



Offshore Wind Skills Intelligence Report

June 2023

**OffshoreWind
IndustryCouncil**

Foreword

We are delighted to present the results of the third annual skills survey, conducted by the Offshore Wind Industry Council (OWIC). Since the first survey was conducted in 2020, the British Energy Security Strategy (BESS), published in 2022, has placed offshore wind at the heart of our nation's efforts to boost home-grown, low carbon energy sources as the long-term answer to an affordable, secure energy system. The Offshore Wind sector deal set a realistic but ambitious target of 30GW; the BESS set a target of 50 GW by 2030, including 5GW of floating offshore wind. The people and the skills needed across industry, government, regulators and NGOs to deliver on this ambition should not be underestimated.

With leasing auctions for offshore windfarms taking place later this year in the Celtic Sea, the annual CfD auction round ongoing and development and construction work continuing for consented projects, our industry has never been so active; against a backdrop of environmental and supply chain challenges.

As OWIC, we continue to actively support the Government's Green Job Delivery Group, which is leading cross-sector efforts to identify and address shared skills gaps in the UK energy sector. This will ensure coordinated action across industry and support for people across the UK joining our sector, whether they need information and advice about careers, employment support, training to develop technical skills, or access to apprenticeships, further and higher education.

We are working with the North Sea Transition Deal to ensure that we can successfully support the transfer of workers from offshore oil and gas into offshore wind. Additionally, we continue to develop our partnerships to support the development of the skills and ambitions of younger people to encourage them to consider a job in offshore wind, across the full range of opportunities from offshore turbine technicians to environmental roles, electrical engineers and digital engineers; skills that are required across our sector.

This year's report reflects the continuing upward trajectory of our industry¹:

- a current workforce figure of **32,257** (an increase of 4% from the 2021 report)
- a forecast workforce of over **104,401** by 2030;
- a positive trend: **20.6%** of our workforce are women (an increase of 4.6% since 2019 and 2.6% since our first report in 2021);
- we have surpassed our sector deal target of 2.5% of our workforce being apprentices - we now have **2.6%**, and finally;
- of those who provided information on ethnicity, **7%** were from non-white backgrounds, compared to 3.8% in 2021.

However, with the ambitious 2030 offshore wind targets, we have to pick up the pace. To meet the BESS 50GW target, which assumes that every project in the current pipeline is successful, we need to attract and retain around 10,000 people every year. Simply put- the **challenge is growing** whilst our **time to achieve it is reducing**. We recognise this challenge and have set out seven priority areas for the offshore wind sector:

1. Workforce Strategy and Sector Ambitions
2. Attraction, Recruitment and Retention

¹ based on the current pipeline of 51GW and assuming that every project is successful

3. Education and Engaging Young People
4. Focus Effort on Critical Occupations
5. Diversity and Inclusion
6. Collaboration with Clusters for Place-Based Solutions
7. Data Collection

Whilst we work and build relationships across the skills landscape, we are ever mindful of the need to support and improve the diversity of our industry, across all characteristics and regions. Research shows that diverse teams lead to better and more innovative decision making and with the challenges that now face our sector, we need to ensure that we reach out to the full talent pool right across the country.

Thank you to everyone who has provided data to support this year's report and the continued support over the year to People and Skills agenda. We look forward to continuing to work closely over the next year.



Richard Sandford

Co-Chair, Offshore Wind Industry Council
Vice President of Offshore Wind UK, bp



Jane Cooper

Director of Offshore Wind, RenewableUK

TODAY'S WORKFORCE



32,257



Total UK Offshore Wind Workforce

17,394 Direct Jobs

14,863 Indirect Jobs

INVESTMENT IN SKILLS

Current Apprentices

2.6% (270)



Graduates & Trainees

0.93% (96)



DIVERSITY & INCLUSION

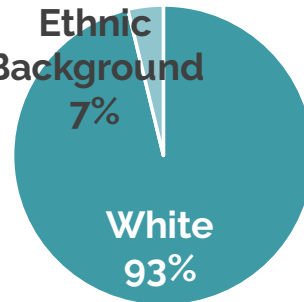


20.6% Women

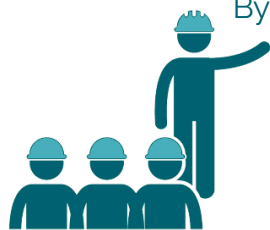


79.4% Men

Ethnic Background 7%



TOMORROW'S WORKFORCE



By 2030, UK Offshore Wind is forecast to employ

104,401

Jobs. 56,296 Direct jobs and 48,105 Indirect Jobs

Executive Summary

Introduction

This report presents a snapshot of the UK Offshore Wind workforce and an analysis of the projected future workforce requirements to 2030 to meet the 50GW, including 5GW floating offshore wind, target set by UK Government in the British Energy Security Strategy (BESS) in 2022.

More than **10,150** individual job records were received from **81** companies for this third annual OWIC survey and the projected results show the number of people working in UK offshore wind at the start of 2023 now stands at **32,257**, comprising **17,394** direct jobs and an additional **14,863** indirect jobs. It is forecast that by 2030 there will be **104,401** jobs in offshore wind in the UK to deliver the current pipeline, assuming that all projects are successful.

Last year the Offshore Wind Industry Council (OWIC) published the results of its second skills intelligence modelling survey to benchmark the workforce active in the offshore wind industry. The number of employees working in UK offshore wind at the end of 2021 had risen to **31,082**, an increase of **16%** from the inaugural survey.

This ongoing growth in the survey results and the increasing forecast numbers reflect the growing UK offshore wind pipeline of future projects contained in the RenewableUK Energy Pulse database.

The last three reports show that the workforce in offshore wind is growing (see Figure 1); however, the forecast of employment required in 2030 (shown in red) is growing at a quicker pace than the current workforce. This is due to increases in the planning pipeline and Government targets (from 30GW in 2019, 40GW in 2021, to the current 50GW target in 2022). Simply put- the **challenge is growing** whilst our **time to achieve it is reducing**.

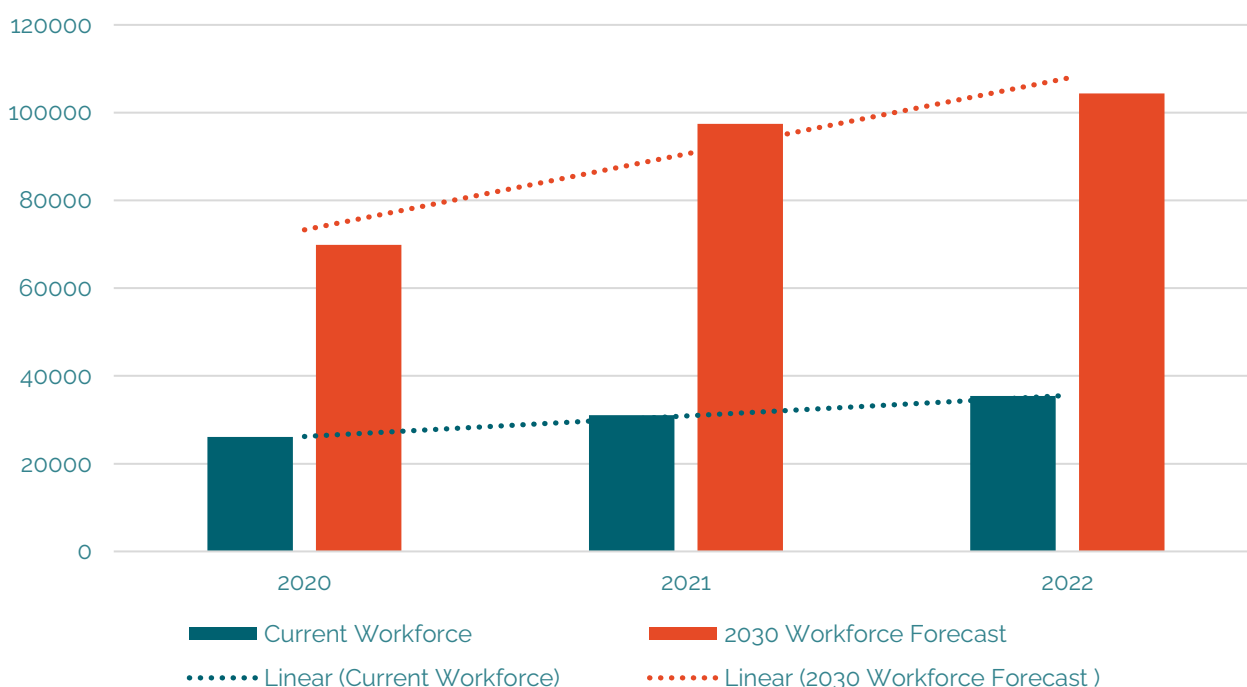


Figure 1 - OWIC UK Annual Offshore Wind Survey and Future Forecasts Results Over 3-Years

The results presented in this report build on the sector's positive trajectory over the past two years and demonstrate a now maturing industry, albeit one that is continuing to grow as the demand for its product increases, particularly in view of the UK's efforts to decarbonise its energy mix. In 2022, the offshore wind industry continued to grow steadily across all fronts: we reached a total of **2,652** installed turbines with a generation capacity of **13.66GW**.

Delivery of floating offshore wind at scale will substantially increase the demand for people and skills in the near future. There will be an increase in the number of jobs in both the direct and indirect employers, increased demand for technical and vocational skills training, additional need for the transfer of workers from other energy sectors and an imperative to attract young people into a career delivering cleaner, greener energy.

Offshore Wind Sector Deal

In 2019 the Offshore Wind sector deal set targets across several areas, which has been endorsed and supported by other sectors; this report presents positive progress against all of them.

The Current Workforce Profile

Progress on Gender Balance

The 2022 survey data included **2,036** women out of a total of **10,150** returns, representing **20.6%** of the current workforce. This represents a **1.3% increase** compared to last year's results and shows an average year-on-year trend of women coming into the sector growing at a rate of around **1.25%** each year. Whilst this is positive and signifies a good chance of achieving the sector deal target of **33%** women by 2030, there remains much work to be done to ensure the sector achieves a genuine gender balance in the future.

Progress on Apprenticeships

Developing the next generation of talent, in particular supporting apprenticeships, is a key target of the Offshore Wind Sector Deal and again positive progress is reported. The Deal set the industry a target of **2.5%** of the workforce to be recruited through apprenticeship programmes, with the 2022 survey showing apprentices now make up **2.6%** of the workforce, an increase of **0.6%** on last year's numbers. This is a pleasing result, but continuing to develop and attract young people into apprenticeship roles is critical for the future success of the sector and the industry's efforts must continue.

Progress on Diversity

Ensuring that the offshore wind workforce is diverse and inclusive is important for the future growth of the industry, allowing the sector to tap into the largest possible talent pool and better reflect the composition of the society in which we work. The 2022 survey results highlight that **7%** of the workforce that provided information was from a non-white background, compared to **3.8%** in 2021.

Although this represents good progress again, there remains more to do to meet the target of 9% of workers from ethnic minority backgrounds in 2030, aiming for a more ambitious target of 12% if feasible.

Regional Breakdown

Based on the data received from industry we know that the DeepWind Cluster in Scotland has almost **30%** of the UK's offshore wind workforce population, followed by Humber with 16.4%, and then London with 15.2%. Northern Ireland has the lowest offshore wind workforce population in the UK, with only 0.3%. Scotland is likely to have the most people working in the industry due to the region's maturity in the energy sector.

Wales has the highest proportion of women working in the industry at **45.9%**. This is followed by Northern Ireland at 38.5%, and then London at 35.4%. The Yorkshire and Humber cluster has 13.5% women working in the industry, which is the lowest of all regions in the UK. The greatest proportion of higher level skills are to be found in London, Wales and the South West.

The spread of apprentices working in the offshore wind industry shows that the Yorkshire and Humber cluster have the highest number of apprentices in industry with **76** apprentices in that cluster alone, followed by the North-East with 49 apprentices, and then South East with 22 apprentices. The regions with the least number of apprentices in the industry are Northern Ireland, Wales, West Midlands and London.

The Future Workforce Profile

The workforce future casting model built in support of this report, draws from the pipeline of future projects contained in the [RenewableUK's Energy Pulse Database](#).

The Offshore Wind Sector Deal's original target of **27,000** direct jobs by 2030 and **30GW** of capacity have now been updated to reflect the Net Zero Strategy published in 2021 and subsequently the Energy Security Strategy published in 2022 which raised the target to **40GW** and then subsequently **50GW** of offshore wind projects by 2030.

Increasing the target to **60GW** by 2030 which, if possible, with the constraints of volumes of raw materials, network connections, and marine capability, would likely require a workforce nearing **120,000**.

This report highlights a substantial increase in the proportion of indirect jobs when compared to direct jobs in the same data set. In both 2020 and 2021 indirect roles were **42%** of the total workforce, but in 2022 this had increased to **48%**. The main report hypothesises is that, as the supply chain starts to prepare for the growth, and that developer organisations are slowing down in their employment direct employee growth to contract out a greater degree of the consenting, construction and supporting functions.

Current and Future Skills Gaps

Future casting informed by the survey results, we forecast that by 2030, the industry will employ **104,401 people** – **56,296** of those being direct, with **48,105** indirect roles. There is a rapid increase in jobs through to 2026 at **88,509** jobs, before slowing down to 2030, reaching 104,401 at the end of 2029. The reason for this is likely because of the nature of project phases - there is substantial activity expected in 2023, with further subsequent growth as the planning phase moves into construction.

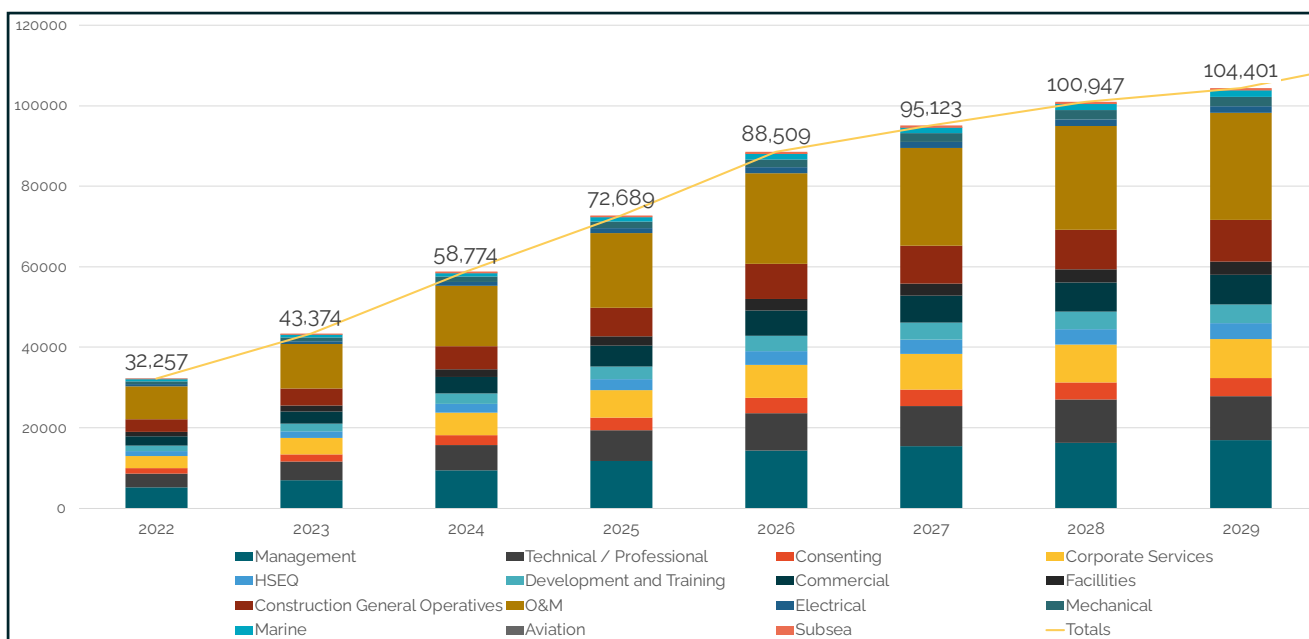


Figure 2 - Breakdown of number of UK offshore wind jobs by Job Role

There are several skills gaps and shortages which need to be addressed across the industry, including those persisting in the same areas as last year:

- High level electrical skills, including Senior Authorised Persons;
- Digital skills e.g., data analysts/scientists etc and engineers with an understanding of data analysis and presentation;
- Consenting skills, particularly amongst SNCBs and regulators but increasingly within the industry, and
- Marine & Port orientated skills.

Over the longer-term, anticipated skills shortages include:

- Electrical technical and engineering skills (particularly substations, HV and cables). These will be exacerbated by the upgrading of the power network and the introduction of battery storage sites;
- Project Management and the ability to manage significant sized projects and multiple contractors;
- High level digital specialisms including data analytics, artificial intelligence, robotics, digital engineering/science, machine learning, SCADA related skills, software development;
- On and offshore logistics, and
- Construction resource for floating wind projects, which are anticipated to require high numbers of people in fabrication and welding.

Conclusions

There are a number of conclusions to be drawn from this year's survey:

1. **Delivery of the Sector Deal Target** - This report projects that the offshore wind industry has the potential to employ 104,401 people by 2030, albeit with the growth in workforce demand projections outstripping the pace of growth in current workforce numbers
2. **Job Roles and Skills** – the offshore wind industry shows a normal proportion of job roles and skills when compared to other industries except for Technical and Professional trades which are higher than average for the offshore wind workforce. Additionally, over 60% of the roles in our industry require science, technology, engineering and maths (STEM) skills, highlighting the importance of young people pursuing STEM subjects in education.
3. **Gender Balance** – There has been an increase in the proportion of women working in the offshore wind industry since the first survey was conducted in 2020. However, we still have a significant amount of work to do to increase the percentage of women in the workforce from 20.6% this year to 33% by 2030.
4. **Ethnicity** – This year has shown that there has been a significant increase in the ethnic diversity of our workforce: rising from 3.8% last year to 7% of our workforce being from BAME backgrounds.
5. **Apprenticeships** -The proportion of apprentices in our workforce is currently at 2.6% which is an increase of 0.6% from last year. It is possible that the effects of the COVID-19 pandemic halted many apprenticeships between 2020 and 2022, and that many apprentices are now returning to their apprenticeship programmes, hence there is a bounce-back.

Recommendations

For the first time, we have included a Recommendations section to support the work of OWIC and wider industry as it strives to meet the 2030 targets and deliver 50GW of clean energy. These include:

1. **Develop a Workforce Strategy and Update Sector Ambitions** – providing a shared plan for industry around which it can coalesce.
2. **Attraction, Recruitment and Retention** – developing a compelling offer for the workforce, including through a step change in apprenticeships and attracting people from other industries.
3. **Educate and Engage Young People** – to promote the offshore wind sector to the next generation.
4. **Focus Effort on Critical Occupations** – ensuring the industry tackles the skills and recruitment to the roles industry needs most and engaging with those training providers who will help us to do so.
5. **Diversity and Inclusion** – reaching the widest possible talent pool and promoting inclusive working cultures in organisations.
6. **Work Collaboratively with Clusters for Place-Based Solutions** – where strategies and plans delivered at a national level work hand in glove with tailored, impactful local solutions.
7. **Improve Future Sector Data Collection** – aim to increase survey returns from across small and medium-sized businesses and in respect of diversity data.

Offshore Wind Skills Intelligence Report 2023

A Report to the Offshore Wind Industry Council

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1 Introduction and Context

This report provides a snapshot of the UK Offshore Wind workforce at the end of 2022 and then offers an analysis of the likely future workforce requirements in this sector out to 2030.

The report draws on the results of an industry-wide survey of the offshore wind workforce carried out between October 2022 and March 2023 by the Offshore Wind Industry Council (OWIC). It then takes this data and, utilising RenewableUK's Energy Pulse database, projects future people and skills needs to 2030.

1.1 The Offshore Wind Sector Deal

In March 2019, the UK Government and the Offshore Wind Industry Council signed a world-leading Sector Deal. Both ambitious and long-term, it sets out a strategy through which offshore wind will become the backbone of the UK's power system.

The Sector Deal's People & Skills related targets and ambitions were:

- Increasing the number of direct jobs to **27,000** by 2030, up from c.11,000 when signed in 2019, supporting at least 60,000 total jobs in the sector,
- A target of at least **33%** women in offshore wind by 2030 (up from 18%), with an ambition to reach 40%,
- A target of at least **9%** of employees in offshore wind from ethnic minority backgrounds by 2030, with ambition to reach 12%,
- A target of at least **2.5%** of employed workforce on apprenticeship programmes by 2030,
- Supporting transition training for former **military** personnel,
- To develop an **Offshore Energy Passport** to facilitate greater job-mobility between offshore industries. (As this target is also contained within the North Sea Transition Deal the work to achieve it has been combined to achieve a single cross sector solution).



The Offshore Wind Sector Deal's original target of 27,000 direct jobs by 2030 and 30GW of capacity have been eclipsed by the Net Zero Strategy and subsequently the Energy Security Strategy, which have led to the UK now targeting 50GW of offshore wind.

1.2 Winds of Change

In response to the energy crisis, BEIS was split into several different departments, with a Department for Energy Security and Net Zero (DESNZ) among those launched in February 2023. BEIS did run the Supply Chain Plan assessment of Allocation Round 5 (AR5) at the end of 2022, preparing for auctions which were then held in March 2023. The government is committed to supercharging clean energy and accelerating its deployment, which could see 95% of Britain's electricity generated from low carbon sources by 2030. As part of these supply chain plans, a strong emphasis has been placed on innovation, the proportion of the supply chain within the UK, and how the developers will support skills and good employment practices.

Similarly, during the ScotWind Leasing process, Crown Estate Scotland required projects to provide a Supply Chain Development Statement (SCDS) which set out information about the supply chain expenditure expected from their project. This puts the need for skills and training at the forefront of the economic viability of future projects and how they are viewed by governments. As such, the OWIC skills survey is vital to providing data and intelligence on both the development and, hopefully, expansion of the offshore wind workforce.

From our future forecasting, we expect the industry's workforce to rise steadily, reaching 104,401 in 2029, climbing from the current level of 32,257. Achieving this increase in seven years will require a substantial effort by employers, although many of this number will be in manufacturing and can be redirected from other tasks and industries. However, it must be noted that this manufacturing base will be needed at a time when upgrades to power networks and new nuclear projects will be drawing away much of the necessary skills, as will other large projects – such as HS2, the Lower Thames Crossing and New Hospitals programme.

Last year (2022) already saw a threefold increase in green jobs, which will need to continue, if not speed up. In May, the government said its newly formed Green Jobs Delivery Group will aim to support the delivery of "up to 480,000 skilled green jobs" by 2030. A high proportion of these will be needed to increase energy production, though there are already signs that demand is outstripping supply.

If there is an end to the moratorium on onshore wind, there will be a ramp up demand for similar skills, especially technical and vocational, also needed in offshore wind. Should a resurgence in onshore projects follow, then they will be drawing on the pool of skilled labour that is currently only being used by offshore wind, further increasing the skills gap already identified.

This suggests that there should be strategic workforce planning across the energy sector. For instance, in the South West, there could be employment pathways designed that cross Hinkley Point C, floating offshore wind fabrication, maritime work, shipbuilding and other renewables. This would provide workers clarity of where their employment is likely to come from in the years ahead and may help to attract the right skills to a particular area.

The Celtic Sea leasing round will spark an increase in the demand for people and skills in planning and consenting over the next two years with, considering these arrays will be floating wind, major employment demand in onshore fabrication. Because of substantial differences in floating and fixed bottom wind turbines, the majority of fabrication is onshore for floating, compared to offshore for fixed bottom, which changes the type, location and proportion of skills that are needed.

The fabrication and fit out of the foundations and towers will call for a much higher proportion of skilled fabrication trades onshore and in port facilities, causing a substantial increase in these technical skills across the South West and Wales for the Celtic Sea, as well as the East Coast of Scotland for INTOG and ScotWind arrays. These employment demands are included in the future casting within this report and make a substantial difference to the previous expectation of future employment in the sector.

Elsewhere, primarily because of the planning time required, there has not yet been the expected increase in the electrification of oil and gas platforms. The success of the INTOG round earlier this year will require a substantial volume of skilled workers, though perhaps importantly this is likely to be several years away and could integrate with other initiatives supporting floating offshore wind. It is likely that the planning and development work will start needing people between 2024 and 2025, where particular resourcing bottlenecks exist, before construction demand also grows from 2025/26.

The focus on driving down the cost of projects also represents a risk to successfully achieving the desired levels of employment and skills in offshore wind. The low sale price of power agreed with the government inevitably constrains what developers can pay employees and the supply chain. At a time when the labour market is tight and competition for labour very competitive both within and between sectors, this heightens the importance for the sector of considering how best to attract, recruit and retain talent.

There is a target to achieve 50GW by 2030, including 5GW of floating offshore wind by 2030, which represents a near doubling of the target published in 2019.

If that 50GW figure was achieved, then it would require a workforce of almost **116,000** – a **260%** increase on the current level. Achieving this is something that, combined with the UK's approach to developing home grown talent may also rely on overseas talent at a time when the rest of the world is also scrambling for skilled employees to build offshore windfarms of their own.

1.3 Industry Response

The Offshore Wind Industry Council (OWIC) has established a people and skills workforce to address the Sector Deal commitments relating to this topic, and to build the engagement from the industry in driving forward action. The focus now is on delivery, to continue embedding change in the developers, operators, manufacturers, and throughout the supply chain, acknowledging that every company is in a different position.

The overarching strategic advisory board, the **Investment in Talent Group** (IITG), reports to the OWIC Board. The group includes representation from Government departments across the UK, including devolved administrations, the Crown Estate, academia, and industry with representation from developers, original equipment manufacturers (OEMs), and top tier supply chain companies. The IITG is responsible for shaping delivery throughout the sector, raising the industry's game to be the exemplar in its response to people and addressing skills issues. Dedicated working groups, working into the IITG, include specialist individuals from across the industry cover activity in relation to apprenticeships, workforce diversity, and engagement with military and education sectors.

Data gathering is essential to providing an evidence-based approach to delivery, allowing for monitoring of the impact and effectiveness of interventions and tracking of the direction of industry.

In particular, OWIC will seek to provide the data and intelligence from this report to industry in order to support the delivery of shared objectives, including the ScotWind and Contracts for Difference Supply Chain Plans, and influencing decision making in government.

Cross energy sector data and workforce planning led by government and the work of the Green Jobs Delivery Group can help to demonstrate the volume of opportunities to jobseekers, including the transferability of these across various technologies in the sector. This will hand individuals the reassurance that gaining a technical trade or professional qualification will ensure long-term meaningful employment, with options to move between employers to progress their career.

Talent Pipeline

In 2022, we have seen an increasingly tight recruitment market. This is resulting in a shortage of potential employees, an increase in the number of “hard to fill” vacancies, and growing competition from other sectors. Despite this, the offshore wind sector still has significant plans for growth which will call for a scaling up of recruitment.

This makes it vital that the industry increases its efforts and its effectiveness when it comes to building a sustainable and truly diverse pipeline of talent, which it then retains. In summary, this will require:

- a) **Short term (1-2 years)** – critical skills identification, promoting and communicating to attract from other sectors and mechanisms to support the Just Transition, recruiting trainees and new entrants, tactical organisational school STEM engagement activities and the promotion of role models.
- b) **Medium term (3-4 years)** – training and development of trainees, including technical apprenticeships, providing upskilling training for employees, strategic sector level school STEM engagement activities, development routes.
- c) **Long term (5+ years)** – trained higher-level apprentices and graduates, initiatives impacting sector workforce at scale, from increased study of STEM subjects to more diverse candidates entering the sector.

Critical skills gaps and skills shortages are those that will inhibit the delivery of projects within the immediate future. There are several skills gaps and shortages which need to be addressed across the industry, including those persisting in the same areas as last year:

- High level electrical skills, including Senior Authorised Persons
- Digital skills e.g., data analysts/scientists etc and engineers with an understanding of data analysis and presentation
- Consenting skills, particularly amongst SNCBs and regulators but increasingly within the industry
- Marine & Port orientated skills

Over the longer-term, anticipated skills shortages include:

- Electrical technical and engineering skills (particularly substations, HV and cables). These will be exacerbated by the upgrading of the power network and the introduction of battery storage sites,
- Project Management and the ability to manage significant sized projects and multiple contractors,
- High level digital specialisms including data analytics, artificial intelligence, robotics, digital engineering/science, machine learning, SCADA related skills, software development,
- On and offshore logistics,
- Construction resource for floating wind projects, which are anticipated to require high numbers of people in fabrication and welding.

Recruitment from other sectors

The industry is committed under the Sector Deal to facilitate people and workforce mobility from other industries and sectors. It is also committed to supporting the movement of ex-military personnel into the industry and has established a **Military Working Group** to this end, supporting service-leavers, veterans, and employers. The Mission Renewables website was launched in 2022 (www.missionrenewable.org), supporting more inclusive practices when working to attract and retain ex-military. This was reinforced in early 2023 when OWIC and RenewableUK signed the Military Covenant.

Recruitment from other sectors of course goes both ways. This means the offshore wind industry needs to be proactive and work collaboratively with the onshore wind industry when it comes to attracting and developing the talent of the future. Furthermore, 2022 has instigated a huge dash for offshore wind around the world, meaning that the UK's offshore wind industry needs to ensure it can retain its current workforce with employment in other continents becoming increasingly attractive to skilled workers.



2 Current Sector Workforce Profile

2.1 Methodology

In October 2022, an industry-wide call was put out from OWIC and RenewableUK across multiple channels for organisations that are engaged within the wind industry to provide a range of details about their workforce.. Some **10,150** individuals with their job records were received from **81** companies, which was considered a strong return. While the 2021 survey saw data submitted from a greater number of companies (97), the 2022 survey saw more data on individuals (10,150 versus 9,961).

The process of uplifting the data provided a fully representative dataset made up of **32,257** individual job records – "Today's Workforce". Analysing the figures gave us **17,394** direct jobs and **14,863** indirect ones, which more or less supports the 50:50 split that has been observed in previous years.

Once the "Today's Workforce" number was established, it was used as the 2022 baseline for skills in the industry and modelled out to 2030. This meant it was increased year-on-year in line with forecasted growth through the UK's pipeline of known projects.

For the first time, the percentage of UK content has been added into the calculations, allowing more focus on the localism agenda, and highlighting the level of exposure that the UK has to foreign supply chains. Given the government's plans to stimulate manufacturing, this is particularly relevant. This data was gathered through the Offshore Renewable Energy Catapult, with a value of 48% used in 2020.

For the purposes of this report, it has been assumed that all projects in the current pipeline will proceed, leading to a total of **51GW by the end of 2029**. This assumes that all projects are completed and are inaugurated on time. Under these assumptions, we forecast that by 2030, the industry will employ 104,401 people.

A complete Methodology can be found in Appendix A.

2.2 Today's National Workforce – Survey Results

Taking the survey results of 81 companies with detailed data on 10,150 individual job roles across the sector, before then applying our extrapolated results, we estimate the size of the UK offshore wind workforce to be **32,257** jobs – a 4% increase on the 31,082 jobs reported in March 2022.

Total Responses

81 Companies
Contributing Data

10,150

Employees Recorded

Sample of 31% of total estimated current UK workforce

32,257



Total UK Offshore Wind Workforce

17,394

Direct Jobs

14,863

Indirect Jobs

2.3 Skills Investment

The Offshore Wind Sector Deal places particular emphasis on developing the next generation of talent, especially through supporting apprenticeships. Under the Deal, the industry has agreed to a target to have 2.5% of the workforce recruited through apprenticeship programmes and according to this year's results, we have already met this target. Apprentices were found to make up 2.6% of the workforce, marking a 0.6% increase on last year, with the proportion of graduates and trainees also up – 0.94% versus 0.8%.

Target 2.5%

Current Apprentices 2.6% (270)

Graduates & Trainees 0.94% (95)

During the pandemic, many companies across the economy faced challenges when it came to retaining apprentices, with many feeling unable to commit to taking in a new cohort in 2021. This sparked a national increase in apprentices in 2022, with companies and individuals that were prevented from engaging with apprenticeships for two years being able to resume their plans. The Offshore Wind sector, as with others, has seen an increase in apprentices, but it is unclear to what degree a Covid "bounce back" or good management and sector growth has influenced this. Regardless, the 0.6% increase in apprentices is substantial and does show a great level of engagement in apprenticeships across the sector.

The **Investment in Talent Group** will continue measuring the numbers, levels and types of apprenticeships, as well as taking steps to identify the operational challenges facing Companies. It will also look at how to support improved attraction, engagement and recruitment of

apprentices to improve diversity. Early work carried out across companies has already shown how changes can make significant differences in the applicant talent pool.

As with apprenticeships, an increase has been observed in the proportion of graduates and trainees in the workforce, rising from 0.8% last year to 0.94% this year. There is no stated target in this area, but it is still important for it to be measured: it shows the ongoing support industry is giving to education in general and continues to rise.

2.4 Job Breakdown

Although this year’s report uses a more granular taxonomy of jobs and job families, there is still a strong alignment with the data from 2021.

Consenting has been broken out into its own job family, which suggests there could be an emphasis on this significant area of need at present. Similarly, the operative family last year that made up 38% of returns has been split out into the technical areas across the sector below degree level. The final change from last year has been the identification of project management roles within the management family, which includes project engineer, manager, and coordinator.

Looking at the survey results, operations and maintenance makes up the largest segment (26%) followed by management (16%) and the technical and professional family (11%), which is made up of the degree level roles in the sector spanning engineers and surveyors to legal roles. Construction accounted for just 10% of responses, which though seemingly small, 2022 was not a significant year for new arrays, as only a limited number were under construction.

Figure 3 (below) shows the breakdown of the workforce by job roles:

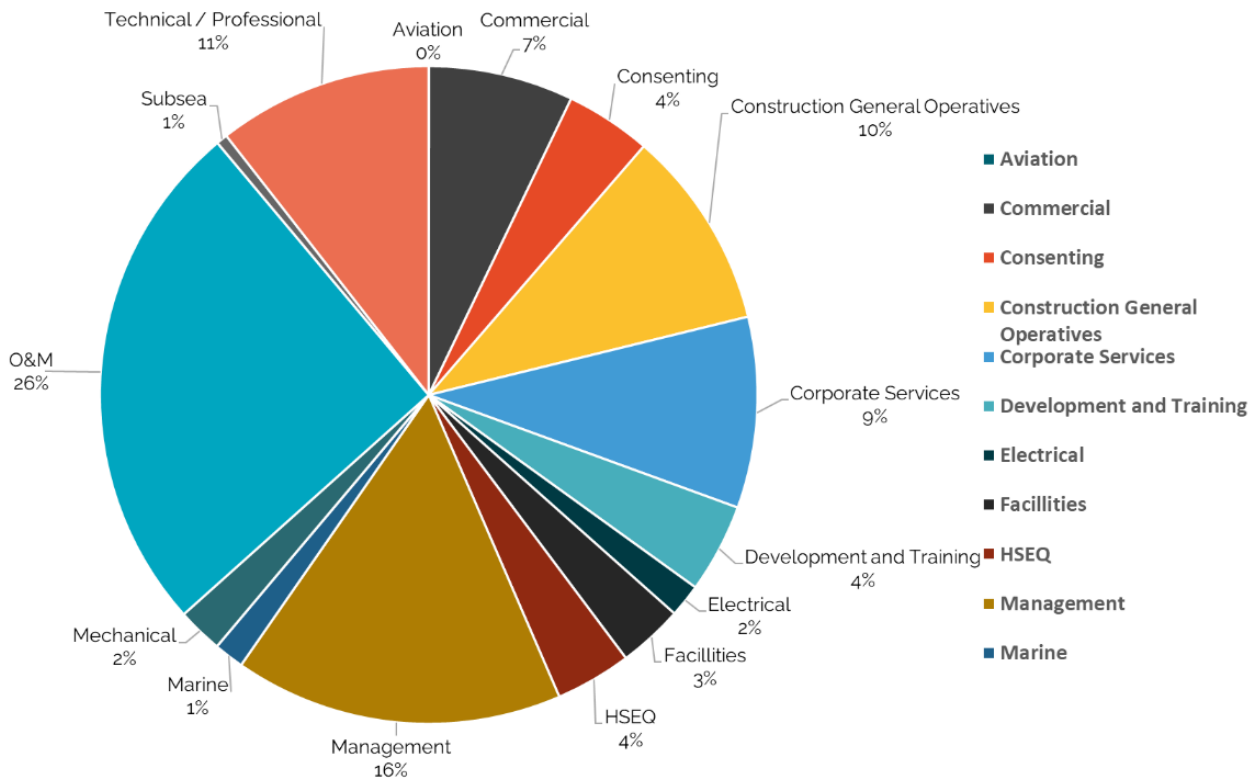


Figure 3 - Breakdown of UK Offshore Wind workforce by Job Role grouping

Analysis of the Data

The smaller job families and sub-families are of interest because they are either not well displayed by the chart or notable by their low numbers.

- Subsea only accounted for 60 people, or 0.56% of the sector.
- Aviation only had two individuals listed, highlighting that there may be issues with capturing people performing these roles within the skills survey
- Marine reported 150 individuals, or 1.46% of the sector.
- Surprisingly, electrical only accounted for 171 individuals, or 1.66% of the sector, though we do believe more electrical engineers with degrees were reported in the degree level technical family group, and that operational electricians were in the operations and maintenance family group.

Management at 16% is a slightly higher proportion than would be expected, however, this group includes Project Management roles, which made up 57% of this Family Group (911 individuals across the Project sub families), making the management and leadership proportion of the sector around 7%.

41% of the sector are in roles involving technical operations (O&M, Mechanical, Electrical, Construction General Operatives, Subsea).

Over 60% of roles in the sector require STEM skills. This figure does not include management and leadership roles (including Project management), many of which will also need a STEM background. This demonstrates that the sector is very exposed to any reduction in the number of young people pursuing STEM area education in the future.

Comparison to the Wider Economy

The Offshore Wind data has been broadly assigned to the relevant Office for National Statistics 'Major Groups'² and compared to the published volumes for all industries to identify similarities and differences.

There is strong correlation across Commercial Services (Sales & Customer Services), Associate Professional and Technical Occupations and broadly Management. The sector looks to have a much lower proportion of Administration level employment and Caring services as would be expected with only a small proportion of hospitality in Facilities Management.

Unsurprisingly the sector has a higher proportion of Professional Occupations and Skilled Trade Occupations. The professional occupations reflect the volume of roles in Engineering, the Consenting professions, legal and other corporate service professions. Similarly, the high proportion of Skilled Trade Occupations reflect the individuals working in Construction, Electrical and Mechanical trades as well as Operations and Maintenance.

² [Employment by occupation - GOV.UK facts and figures](#)

	All Sectors	Offshore Wind
	%	%
Managers, Directors and Senior Officials	10.3	6.8
Professional Occupations	25.7	32.2
Associate Professional & Technical Occupations	14.6	15.8
Administrative And Secretarial Occupations	10.6	3.9
Skilled Trades Occupations	8.9	33.2
Caring, Leisure and Other Service Occupations	8.1	1.1
Sales And Customer Service Occupations	6.8	7.0

Table 1 – Comparison of offshore wind occupation proportions against all the sectors in the UK economy

This comparison provides a high level of assurance as the proportions provided by the Survey align well to the primary activity of the Sector without substantially deviating from the averages across the whole economy.

2.5 Demographics

Age Profile

Digging into the data, the age profile of the industry was found to be diverse, ranging from 17 to 73 years of age. The mean age is 40 which is the same as last year's results. Less than 0.2% (66 people) were identified as being over 65 years old who could retire over the next 5-10 years. This represents a 14% increase on last year. Overall, based on these results, the sector appears to have a good balance when it comes to age.

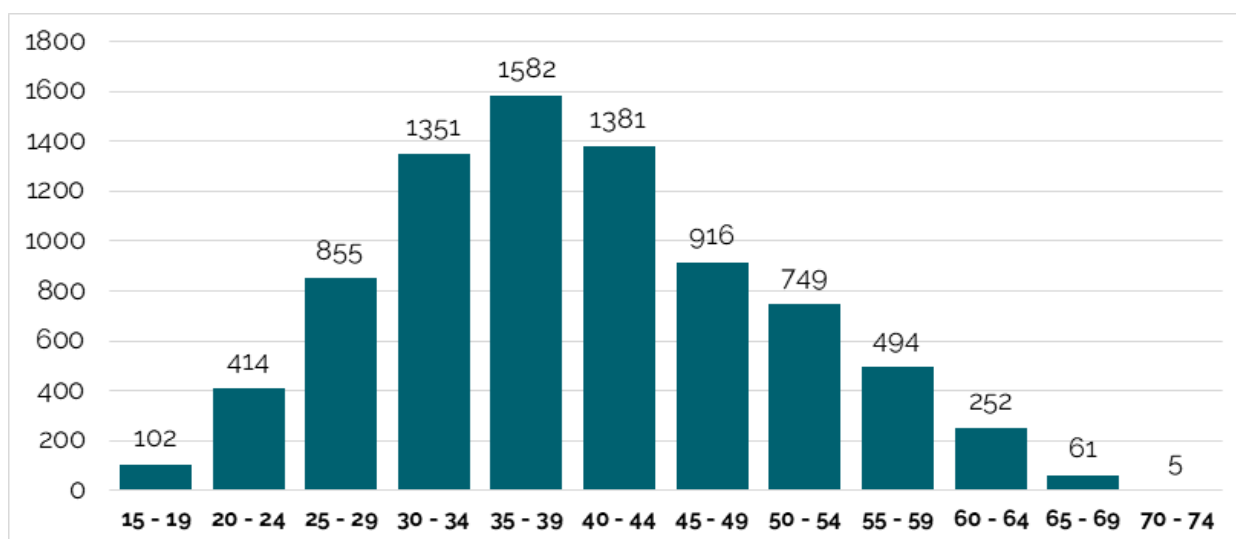


Figure 4 - UK Offshore Wind Workforce – Number of individuals against the Age Profile in 5 year increments

Gender Balance

Currently there is almost an 80:20 split, across the workforce. Of individuals who provided their preferred gender, we recorded **2,056** women (20.6%) and **7,964** men (79.4%). This represents a **1.27% increase** on last year's results. The proportion of females in the workforce has increased slightly from 19.25% to 20.55%. Looking at the past three years, it appears this proportion has grown by around 1.25% each year, meaning the target for 33% of the workforce being female will be reached in 10 years, or by 2032 at the current rate. This is, obviously, an over-simplification and uses a linear growth trajectory, not taking into account that when a proportion of supervisors and managers in the industry are female, the desirability of the industry will likely grow, significantly speeding up the rate of growth. This is something that has been seen in other industries in the past. It should be noted that gender was not provided for 253 (2.5%) of employees in the survey. This suggests that gender information is almost universally collected and documented.

Gender Balance



The proportion of women working in the sector has increased by 1.27% this year, opposed to 1.25% last year. This speeding up may be due to increasing numbers breaking the supervisory and management 'glass ceilings', accelerating desirability of the sector for women overall. More effort is needed to ensure this trend continues.

Gender Age Profile

As was the case with the age profile of the industry, when gender is broken into different age groups, there once more appears to be a good spread across the ranges:

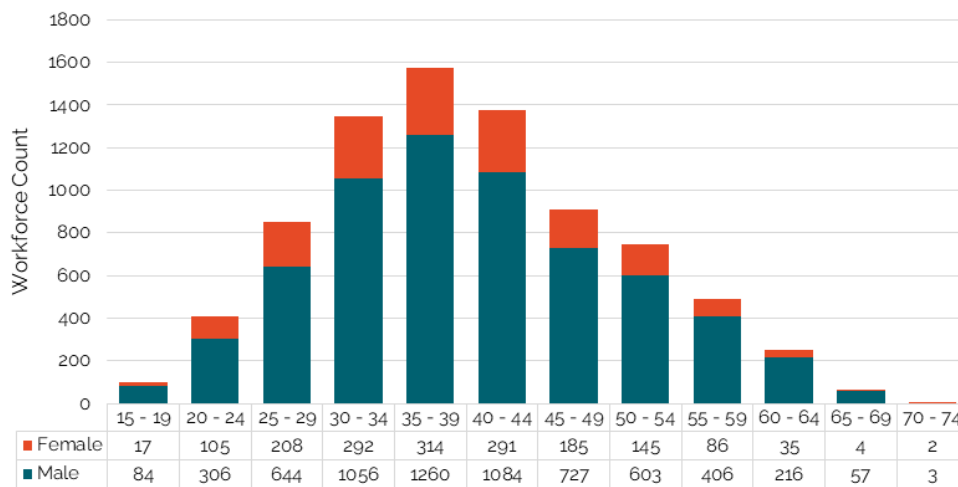


Figure 5 - UK Offshore Wind Workforce – Age Profile by Gender

Gender Skills Level

Exploring the skills levels for women in the industry, they are typically at **Levels 5-7**, which refers to Bachelor’s Degrees and Higher Education Diplomas, across a broad range of roles. When comparing total results, 68% of those at skill Level 2 are female, with 30% at Level 5 and 23% at Level 7. Considering the survey results, women most frequently work in **corporate services, management, and commercial** roles. There was found to be good distribution across all job families, but the following areas were where women were found to be particularly prevalent:

- Contract & Commercial Management
- Sales
- Environmental Management
- Operational Management
- Project Management
- Project Engineering
- Operations and Maintenance
- Technical Trades
- Health & Safety
- Administration
- Finance
- Business Analysis
- Human Resources
- IT
- Law

The breakdown of female job roles is shown below:

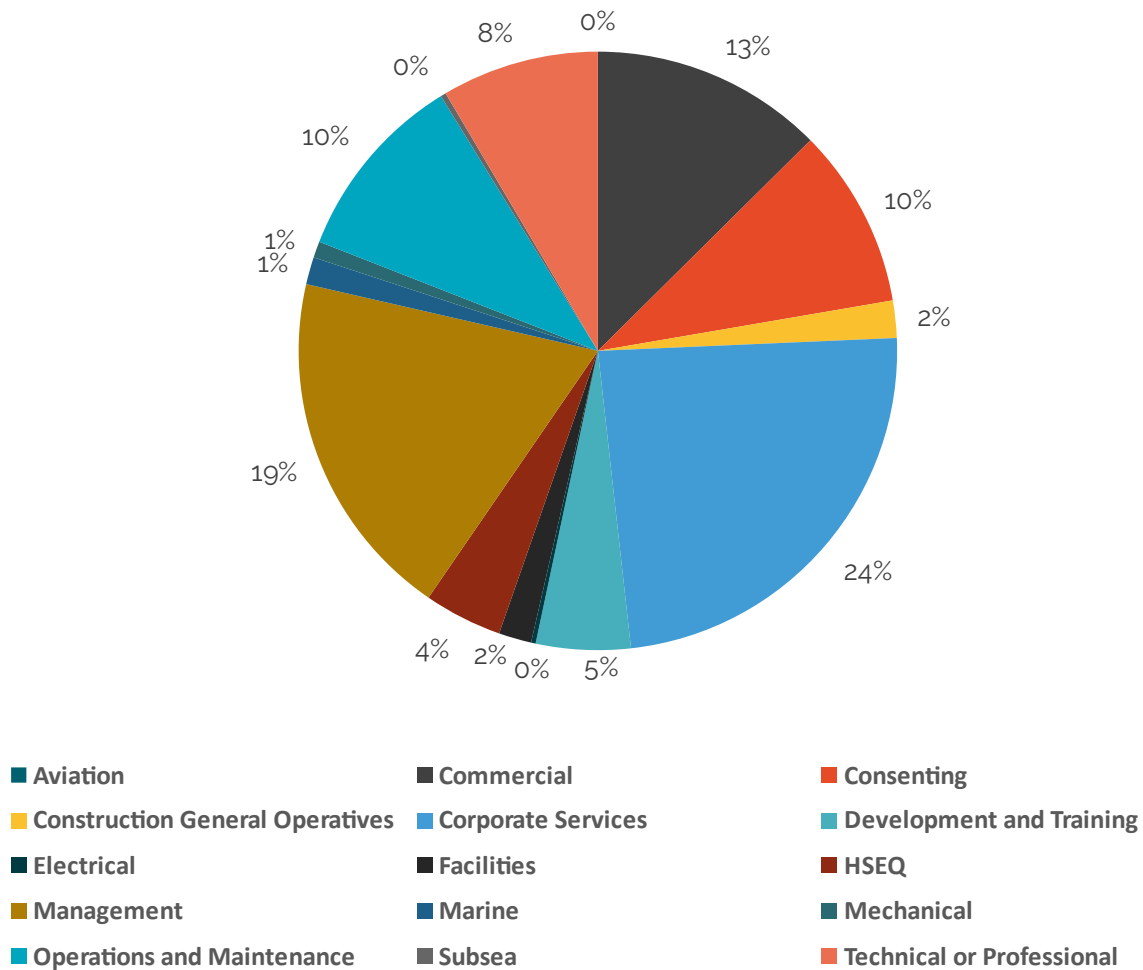


Figure 6 - Breakdown of female job role groups, based on the 2022 Survey Results

Ethnicity

This year's survey shows an increase in the reported ethnic diversity of the workforce, rising from 3.8% last year to see 7% of the workforce being from ethnic minority backgrounds this year. With a strong leadership push, the sector should be able to achieve its target of 9% of employees being from ethnic minorities by 2030. A majority of BAME workers are in Greater London, suggesting many are working in the head offices of developers and larger supply chain organisations. Other areas with high percentages include Scotland, the North East and the North West.

However, data on ethnicity in the UK Offshore Wind workforce has reduced, dropping from 33% of companies submitting returns detailing ethnicity data last year to just 12% this year. It is worth noting that gathering ethnicity data is legally complex and highly sensitive – GDPR can present hurdles, and there is a need for a full EDI policy to substantiate capturing the data in a way that is anonymised but still attributable to a job role or skills area. With reporting decreasing, the need to share knowledge and best practice on how to do this, both within the sector and outside of it is becoming more and more essential.

Ethnicity	Survey Count
Black, African, Caribbean, or Black British	11
Asian or Asian British	38
Mixed or Multiple ethnic groups	8
Any other ethnic group	26
White	1,106
Not Provided	8,961

Table 2 - UK Offshore Wind Workforce - Ethnicity Data

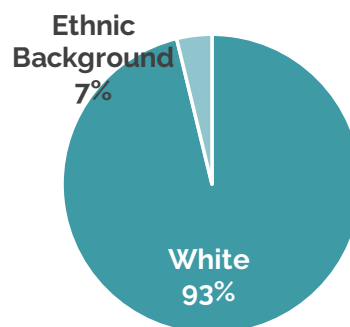


Figure 7 - Summary of ethnicity data received

Based on the survey results, people from ethnic minority backgrounds work across the sector, but 62% are in technical roles, with the remainder found mostly in the roles listed below:

- Leadership
- Operational Management
- Procurement
- Finance
- IT

Technical roles:

- Project Engineering
- Technical Engineering (Electrical, Mechanical and Structural)

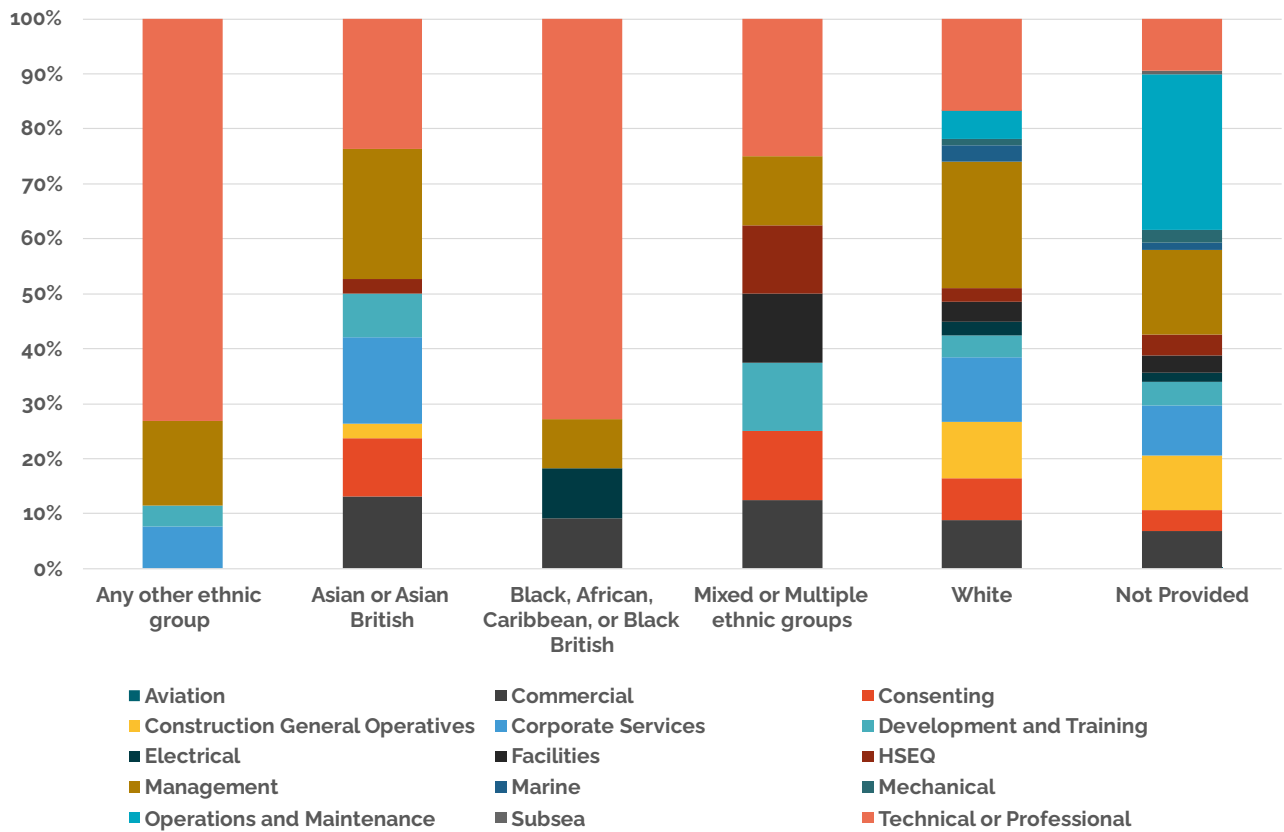


Figure 8 - Breakdown of Ethnicity Skill Level, 2022 Survey



3 Regional and Cluster Workforce

The map below represents the geographic spread of the survey results for the UK Offshore Wind workforce based on data submitted for 8,268 jobs. There were 1,882 responses that had no location data. From those that did, it can be seen Scotland has maintained around a third of the UK Offshore Wind workforce, with a similar overall geographical spread to last year's results.

The map also highlights the Sector Deal Clusters, with the east coast clusters having higher levels of employment based on their proximity to offshore projects. Coastal communities, including Grimsby, Lowestoft, Aberdeen and Canterbury, were found to have higher levels of relative employment. This is primarily down to the locations of key operations sites and port locations that service offshore projects.

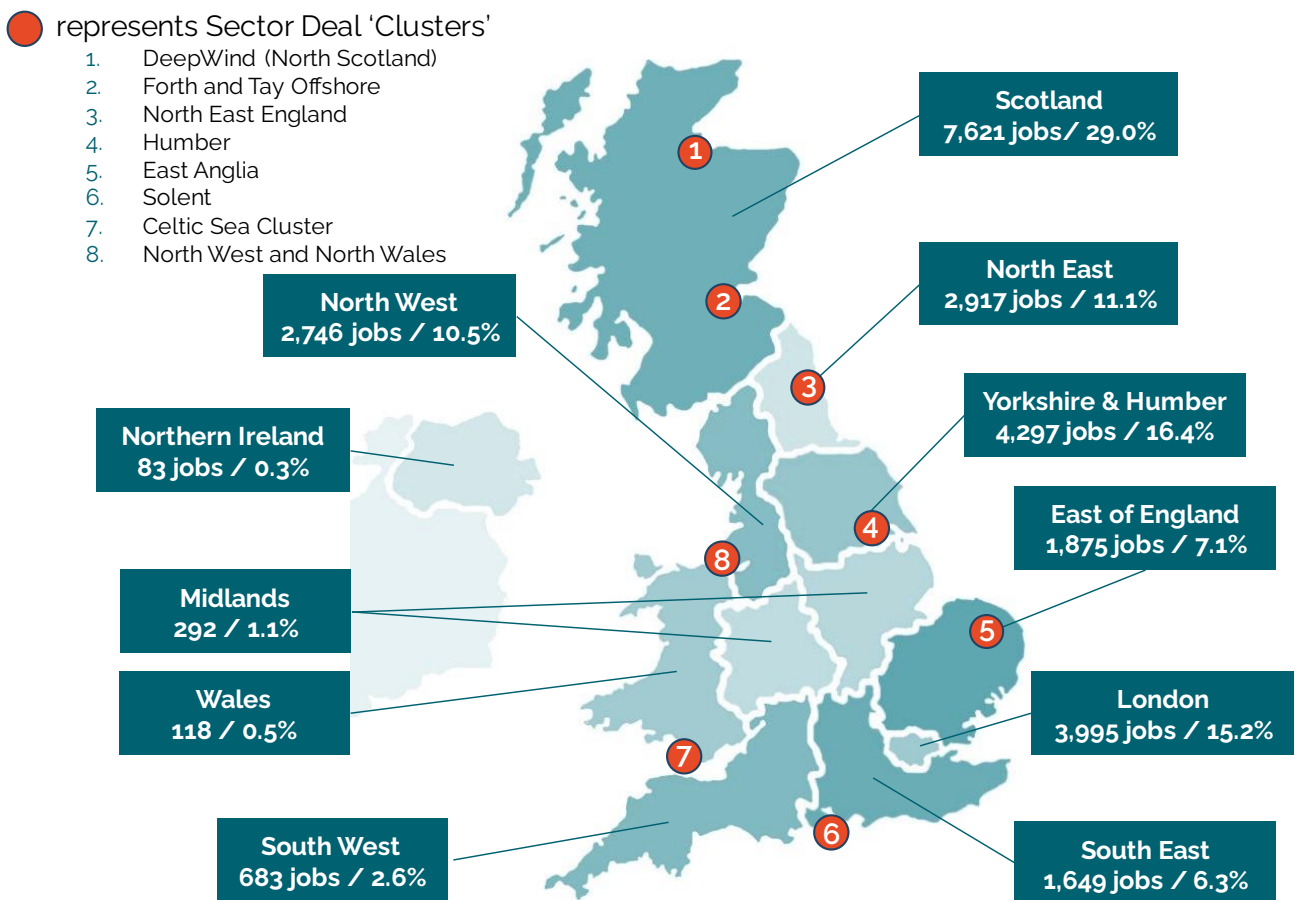


Figure 9 - Geographic spread of the offshore wind workforce, extrapolated from survey results to the whole sector.

3.1 Gender Balance by region

Considering the gender balance at a regional level, it is in-keeping with last year's results, though there are notable improvements in the Yorkshire and Humber region – with the proportion of females rising from 9% to 13% – and Scotland – climbing from 20% to 24%. There were no individuals who identified as non-binary reported in this year's survey.

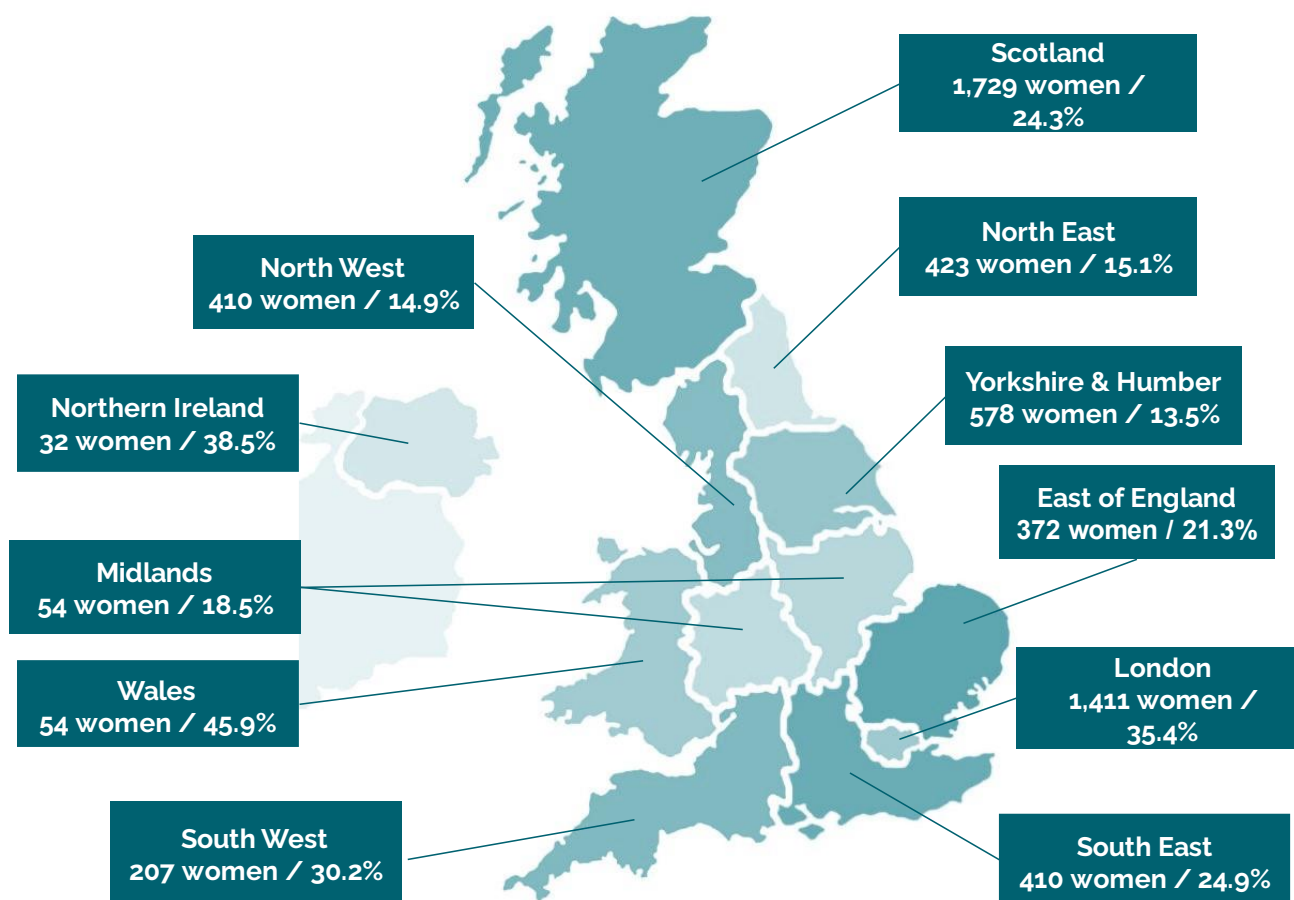


Figure 10 - Geographic spread of the **female** offshore wind workforce, extrapolated from survey results to the whole sector.

Region	Women		Men		Not Provided		Total
	Total	% of total	Total	% of total	Total	% of total	
East of England	117	21.3%	432	79%	41	7%	590
London	444	35.4%	811	65%	2	0%	1257
Midlands	17	18.5%	75	82%	0	0%	92
North East	133	15.1%	746	85%	39	4%	918
North West	129	14.9%	735	85%	0	0%	864
Northern Ireland	10	38.5%	16	62%	0	0%	26
Scotland	544	24.3%	1,697	76%	157	7%	2398
South East	129	24.9%	390	75%	0	0%	519
South West	65	30.2%	150	70%	0	0%	215
Wales	17	45.9%	20	54%	0	0%	37
Yorkshire & Humber	182	13.5%	1,170	87%	0	0%	1352

Table 3 - Geographic spread of the **female** offshore wind workforce, actual survey results. NB. Percentages for Males and Females are a proportion of those reporting gender, not the total in the region.

3.2 Job Roles and Skills Levels by Region

Exploring the distribution of jobs role groups and skills levels across the UK, it becomes quite variable from region to region. Most job roles were found to be in technical and professional disciplines, with corporate services making up the second largest group. Management, including corporate leadership roles, were highest in London, accounting for corporate offices and support functions, such as HR, finance and procurement. Consenting made up a high proportion of the current workforce in Wales and the South West, reflecting the planning phase of the Celtic Sea round.

The table and figure found below show the full breakdown of survey results by job role group and region:

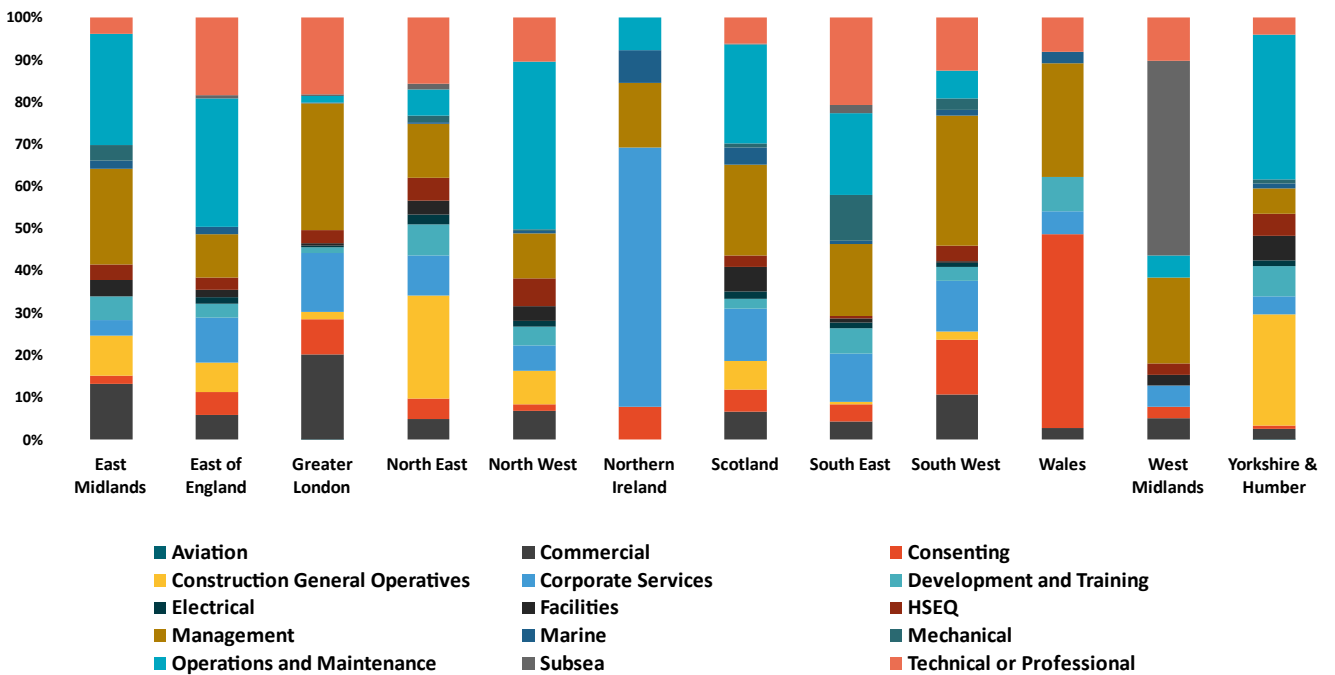


Figure 11 - Breakdown of Job Role groups by region

	Aviation	Commercial	Consenting	Construction General Operatives	Corporate Services	Development and Training	Electrical	Facilities	HSEQ	Management	Marine	Mechanical	Operations and Maintenance	Subsea	Technical / Professional
East Midlands	0	7	1	5	2	3	0	2	2	12	1	2	14	0	2
East of England	0	34	32	41	64	19	9	10	18	60	10	0	180	5	108
Greater London	1	252	107	23	174	19	3	8	38	380	2	0	21	3	229
North East	0	45	44	224	88	68	20	30	50	119	2	15	57	12	144
North West	0	59	13	69	51	40	11	30	57	93	5	3	343	0	90
Northern Ireland	0	0	2	0	16	0	0	0	0	4	2	0	2	0	0
Scotland	0	164	131	166	313	56	47	138	68	535	99	28	586	8	155
South East	0	22	21	3	60	31	7	5	3	89	4	56	101	10	107
South West	0	23	28	4	26	7	2	1	8	66	3	6	14	0	27
Wales	0	3	20	0	4	3	2	2	1	11	1	0	9	0	5
West Midlands	0	2	1	0	2	0	0	1	1	8	0	0	2	18	4
Yorkshire & The Humber	1	32	11	356	60	96	17	79	72	82	15	13	463	0	55

Table 4 - Breakdown of Job Role groups by region

Turning to skills levels, once more the survey results give a broad range, though there are a greater proportion at Levels 4 and above. Yorkshire and the Humber, along with the North East, account for the highest number of Level 3 skills, which is unsurprising given that there is a more developed supply chain in this area, with Ørsted's East Coast hub and Siemens Gamesa's blade manufacturing facilities. The greatest proportion of higher-level skills are to be found in London, Wales and the South West. This can be seen in the figure and table below, which show a full breakdown of survey results by skill level and region:

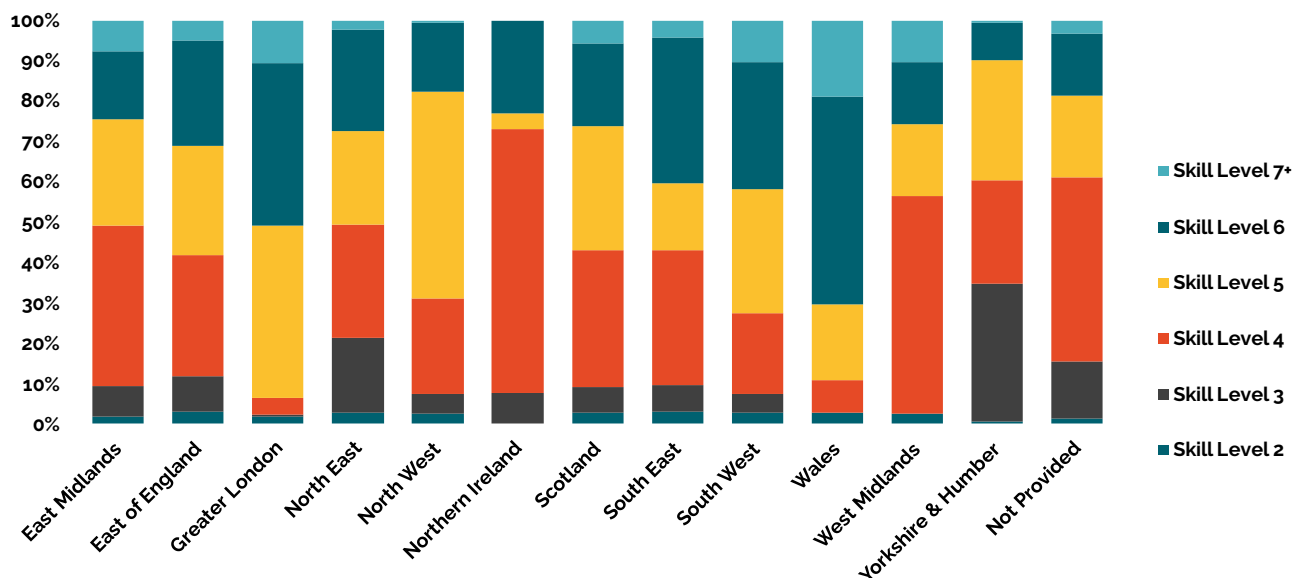


Figure 12 - Breakdown of Skills Levels by region

REGION	Skill Level 2	Skill Level 3	Skill Level 4	Skill Level 5	Skill Level 6	Skill Level 7+
East Midlands	1	4	21	14	9	4
East of England	18	52	177	160	154	29
Greater London	22	5	54	536	509	131
North East	26	169	259	212	232	20
North West	21	43	205	443	148	4
Northern Ireland	0	2	17	1	6	0
Scotland	64	152	819	734	493	136
South East	16	34	173	87	187	22
South West	6	10	43	66	68	22
Wales	1	0	3	7	19	7
West Midlands	1	0	21	7	6	4
Yorkshire & Humber	9	461	346	403	126	7
Not Provided	22	268	859	384	291	58

Table 5 - Breakdown of Skills Levels by region

3.3 Skills Development by Region

When it comes to developing apprenticeships, graduates, and trainees, skills development was found to be mixed across regions. Partly down to impacts of the COVID-19 pandemic in the last 2 years, it is not a surprise to see that graduate and apprenticeship numbers have increased this year. The number of trainees conversely has fallen. Overall, there are 60 more individuals being formally trained by the Sector than in 2021 showing a positive trend.

Looking at apprentices, Yorkshire and the Humber, the North East and South East were found to have the highest number of apprentices, followed by the North West and East of England. A little over 60 apprentice roles did not provide postcode data with their submissions, which means real numbers at a regional level could be slightly higher.

The figure and table below look at the breakdown of survey results for apprentices, graduates and trainees at a regional level:

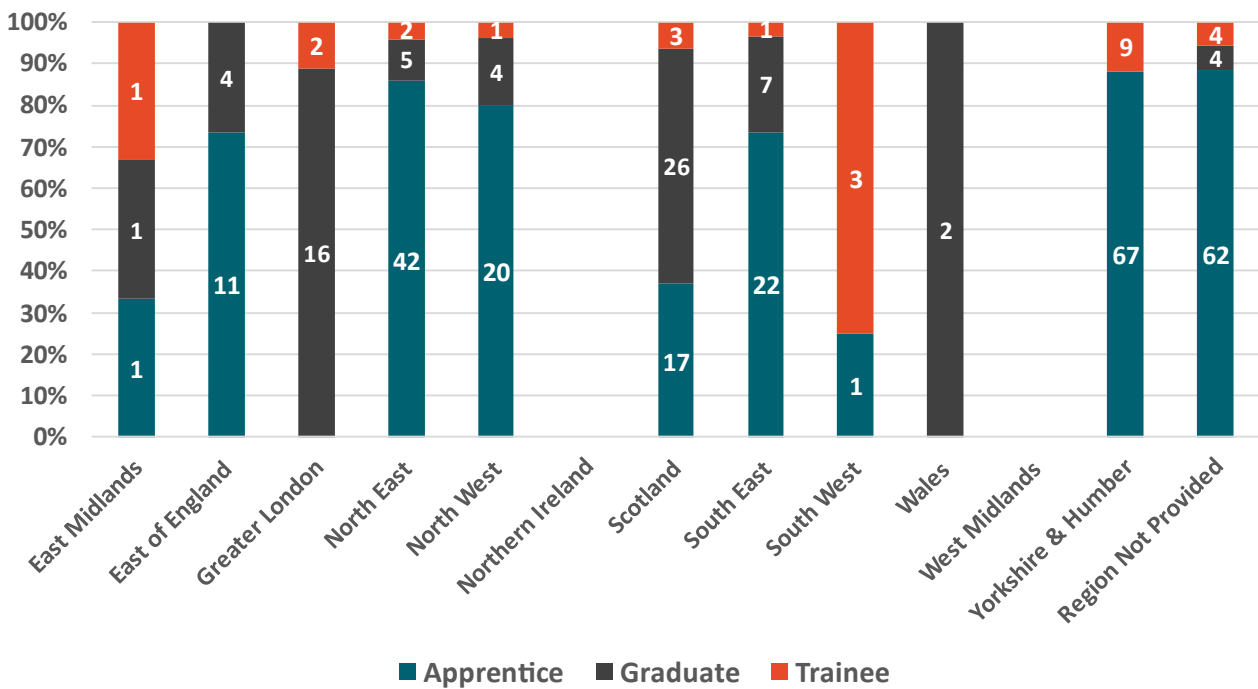


Figure 13 - Apprentice, Graduate & Trainees by UK Region

	East Midlands	East of England	Greater London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire & Humber	Region Not Provided	Grand Total	Total
Apprentice	1	11	0	42	20	0	17	22	1	0	0	67	62	243	
Graduate	1	4	16	5	4	0	26	7	0	2	0	0	4	69	
Trainee	1	0	2	2	1	0	3	1	3	0	0	9	4	26	
Grand Total	3	15	18	49	25	0	46	30	4	2	0	76	70	338	

Table 6 - Apprentice, Graduate & Trainees by UK Region

Developers are set to take on more apprentices next year, both as new entrants to the industry and as upskilling for current employees. New entrant apprentices tend to be in technical trades, such as wind turbine technician and project management, whereas apprenticeships for upskilling employees tend to follow operational management and quality management studies.

Universities in Durham, Newcastle, Hull and Sheffield all have a Level 7 Centre for Doctoral Training (CDT) in Offshore Wind and the environment, which is a five-year programme for PhD level research, meaning there is a good number of experts in different aspects of Offshore Wind applied sciences. These individuals are now working in academia and industry, helping to contribute to the development of innovation around Offshore Wind and the environment.



4 Future Workforce Forecasts

4.1 Investment Data

To forecast jobs growth and investment to 2030, the model has drawn from **RenewableUK's Energy Pulse Database**, using extrapolated data and robust assumptions.

Assumptions here include expected floating wind projects and all project awards through Allocation Round 5 and the Celtic Sea and ScotWind leasing rounds through to the end of 2030.

4.2 Jobs Forecasts

Looking at the Energy Pulse data and future casting informed by the survey results, we forecast that by 2030 the industry will employ 104,401 people – 56,296 of those being direct, with 48,105 indirect roles.



By 2030, UK Offshore Wind is forecast to employ

104,401

Jobs. 56,296 Direct jobs and 48,105 Indirect Jobs

The major threat to this pipeline being achieved and the power generation it promises is the availability of Power Network connections. If these are not available at the correct times, in the correct volumes and in the correct locations, then this will constrain the future delivery of the Offshore Wind pipeline with the consequent knock on to power generation and, as a result, employment.

The Offshore Wind Sector Deal's original targets of 27,000 direct jobs by 2030 and 30GW of capacity were uplifted through the government's Net Zero Strategy, proposing at least 60,000 new jobs – consisting of direct and indirect – supporting 40GW of offshore wind projects, with at least 1GW from floating. This has since been increased further to 50GW of capacity by 2030, with at least 5GW of this from floating wind, supporting 90,000 jobs.

Through our analysis, assuming that the current pipeline of projects is achieved, then the number of jobs supported will be far higher than the government's target. It is important to note, of course, that it may be that not all projects are fully commissioned or operational by 2030, given how some are at an earlier stage of planning and consenting. Even with ambitious development timelines, there are still other constraints that could have an impact.

Delivering an increased ambition of 60GW by the end of 2030 would require a supportive environment and political framework and would include a pipeline of both fixed wind – already mature and well placed to achieve the expected output – and floating wind – largely in its infancy. Increasing the target to **60GW** by 2030 which, if possible, with the constraints of volumes of raw materials, network connections, and marine capability, would likely require a workforce nearing **120,000**.

Figure 16 (overleaf) offers a more detailed breakdown of forecast jobs by role, tracking growth year-on-year. The model finds a strong, almost linear growth trend in job numbers. There is a rapid increase through to 2026, before slowing down to 2030. The reason for this is likely because of the nature of project phases. There is substantial activity expected in 2023, with further

subsequent growth as the planning phase of a number of arrays moves into construction. This activity is added to as investment and job creation begins in and around 2025 onwards for projects that will not necessarily be commissioned or operational by 2030. These include projects from Allocation Round 5 and the Celtic Sea and ScotWind leasing rounds. If the pipeline continues to grow across the mid 2030s then the consenting and design work will be seen in addition to this report's estimates at the end of this decade. However, as these projects are not yet envisaged, the employment for them cannot be estimated but is expected in line with the Energy Strategy for 2050.

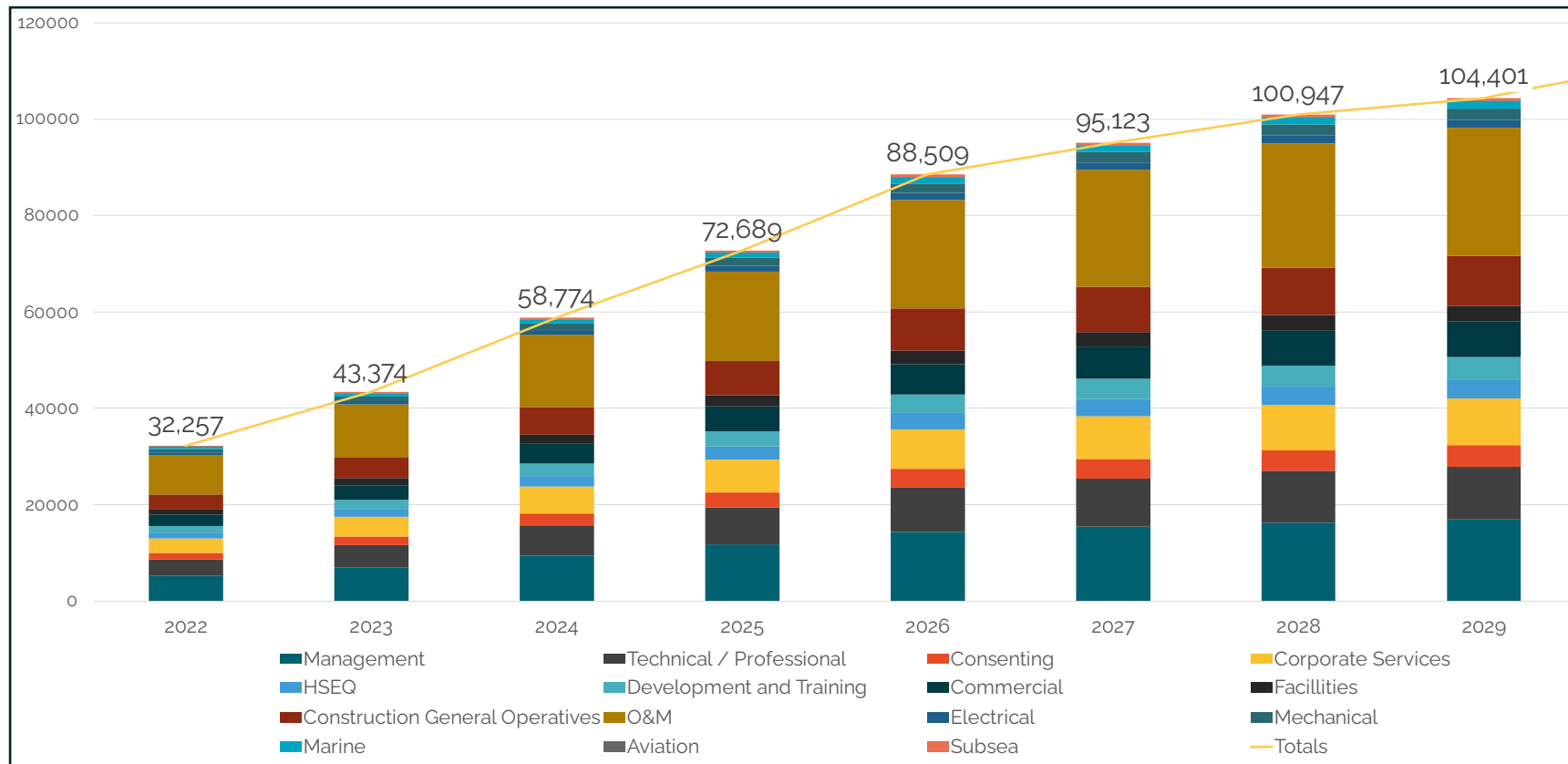


Figure 14 - Breakdown of number of UK offshore wind jobs by Job Role



5 Conclusions

Survey Results

The 2022 OWIC Offshore Wind industry people and skills intelligence survey has been as successful as the first two years, with the results showing that the number of companies and individuals in the sector is continuing to grow broadly in line with expectations.

The growth trend observed shows a workforce **26,093** strong in 2020, rising to **31,082** in 2021, before climbing to **32,257** in this year's survey. This does perhaps suggest growth is slowing somewhat, but this may be because a small number of arrays were constructed in 2022. Considering the known pipeline of projects in place, employment trends are expected to increase sharply to 2027, before then levelling out at the end of the decade.

Delivering the Sector Deal Jobs Target

The overall growth highlighted above shows the Offshore Wind industry will surpass its sector deal target of **90,000** jobs by 2030, assuming projects in the current pipeline are successful. This report is forecasting **104,401** jobs in 2030.

It is crucial to continue putting substantial effort into what will be a very significant workforce increase if this pipeline growth is to be achieved and the government's 50GW ambition realised. The middle of this decade is set to be particularly important, with pressure on the early planning, design and consenting roles needed to get this pipeline of projects approved in time to keep their expected construction dates.

Job Roles and Skills

The sector reflects the expected proportion of roles and skills across the wider economy. Management is at a slightly lower proportion than other sectors, and the proportion of Administration is substantially lower. The sector has a higher-than-average proportion of Technical/ Professional trades, reflecting the importance of Engineering roles. There is a very high proportion of Skilled Trade Occupations, not only due to the expected ongoing maintenance requirement of the sector, but also explained by the volume of manufacturing and construction being conducted in a rapidly growing industry.

Of particular note is that over 60% of roles in the sector require STEM skills. This does not include management and leadership roles (including Project management), many of which will also need a STEM background. This demonstrates that the sector is very exposed to any reduction in the number of young people pursuing STEM area education in the future.

Gender Balance

The offshore wind industry has continuously grown the number of women employed as a percentage of its workforce from **18%** in 2020 to **19.25%** in 2021, now reaching **20.6%**.

This is positive, but does underline the significant, ongoing effort needed within the sector to drive forward this area of change. The Offshore Wind Sector Deal sets a challenging target of having women make up **33%** of the workforce by 2030; going by the current rate of growth, reaching this

target will be difficult. It can be achieved, but it will take the right investment and initiatives to be adopted immediately.

It is worth noting that we received an impressive **97.6%** rate of data provision, which shows how gender is something universally collected on employees, with very little sensitivity to providing this information for the purposes of this survey.

Ethnicity

This year's survey shows an increase in the diversity of our workforce with a range of ethnicities: rising from 3.8% last year to see 7% of the workforce being from ethnic minority backgrounds this year. While it does suggest further work is needed to stimulate both data capture and future workforce report, efforts around recruitment and attracting individuals from a range of backgrounds is clearly working and should be continued. The presence of both female and BAME role models in the sector is extremely powerful and having an impact, which should make achieving targets under the Sector Deal realistic.

Apprenticeships

The results of the survey further highlight positive news when it comes to the proportion of apprentices in the workforce, with the number growing from **1.8%** in 2020, to **2.0%** in 2021 and now reaching **2.6%** at the end of 2022.

While the number of graduates and trainees has dropped from the first survey, where it was **1.4%** in 2020, and it is now at **0.93%**, which is slightly higher than last year (**0.8%**). This is partly down to the impacts of the COVID-19 pandemic on education and the ability of businesses to support graduates and trainees in the workplace during lockdowns and when subject to social distancing.

It is encouraging to see that the number of graduates and trainees has increased slightly and a bounce back to pre-Covid levels can be expected in 2023.

An important factor is that over 60% of roles in the sector require STEM skills, demonstrating that the sector is very exposed to any reduction in the number of young people pursuing STEM area education in the future.

Picture kindly provided by EnBW



6 Recommendations

For the first time, we have included a Recommendations section to support the work of OWIC and wider industry as it strives to meet the 2030 targets and deliver 50GW of clean energy. These include:

- 1. Develop a new Workforce Strategy and update sector ambitions** – Working in collaboration, industry should draft a workforce strategy, that supports existing government ambition in relation to green jobs, setting out how the sector will achieve the substantial growth in employment and skills that is required by 2030. This should include updated targets and defining responsibilities, so greater progress is made towards where the industry needs to be to achieve the targets outlined in the 2022 British Energy Security Strategy.
- 2. Attraction, Recruitment, and Retention** – Industry should develop a compelling offer to inspire and attract individuals to join the offshore wind industry, including through a step change in apprenticeships. This should include consideration of how ongoing professional development, fair pay and excellent quality jobs, as well as a proactive approach to employee engagement, can retain employees in the face of a competitive labour market. In addition, industry should highlight the opportunities available to ex-military personnel, and oil and gas workers, including upskilling opportunities. The offshore wind industry should work closely with other sector deals, like the North Sea Transition Deal, to ensure that they are working with other markets to address shared issues and skills gaps.
- 3. Educate and Engage Young People** – To widen the future talent pool a more coordinated, national-level approach to school engagement is needed to highlight the careers opportunities in the sector and give young people an insight into various opportunities and pathways into employment in our industry. This may include working closely with the Department of Education and skills development bodies to develop vocational and careers pathways into the offshore wind industry. This activity should be complementary to and enhance effective local educational initiatives.
- 4. Focus Effort on Critical Occupations** – There remains concern about the potential for general labour shortages to meet the sector's skills needs. There are, however, already priority occupations where a lack of skills is slowing the sector's progress, and these must be the focus of our skills work in the near term. These skills are; electrical, digital analysis, fabrication, consenting and marine skills. A training industry supply analysis is recommended to be conducted to identify if there is a lack of training capability and capacity in these areas. If capacity is an issue, then support to training organisations is needed so there is alignment between demand and training supply. If there is capacity, then increased promotion and engagement is needed to increase the number of individuals starting careers in these areas and ensure effective links with employer organisations.
- 5. Diversity and Inclusion** – In light of the scale of the skills challenge facing the sector, industry must do more to reach out to the widest talent pool to increase the proportion of under-represented groups within the offshore wind industry. To support this work employers should consider targets for increasing workforce diversity, including at senior levels, and review workplace practices to embed a positive and attractive working culture.

- 6. Work Collaboratively with Clusters for Place-Based Solutions** – Each offshore wind cluster has its own local circumstances and specific skills needs, so local place-based solutions are vital. A national offshore wind workforce strategy should be flexible, allowing it to be tailored to the unique requirements of each cluster. Within any local area it is essential that national skills policy and funding is supported by strong local partnerships between training, employment, and skills organisations and employers creating skills interventions at a local scale and in line with regional skills plans. Collaborative work between clusters is central for bridging our industry's skills gaps, so that ideas and best practice are circulated.
- 7. Improve future Sector Data Collection** - An increase in the annual survey response rate is needed. Although a rate of 18% of companies is good, we can do better with companies that are small and medium sized, since they had a particularly low representation compared with larger companies and we will aim to take steps to engage them more in future survey rounds. Survey returns were also low in respect of Workforce Ethnicity and Military experience. The Gender and Ethnicity Best Practice Guide highlights the importance of effective data gathering and reporting. We will seek enhanced support for employers across industry to better measure, act and communicate in relation to diversity data.



Picture kindly provided by EnBW

7 Appendices

- **Appendix A – Methodology**
- **Appendix B – Survey Questions**
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Appendix A – Research Methodology

1. Industry Survey

Labour market information is crucial for companies when submitting supply chain plans to government in the hope of qualifying for CfDs and in informing the investment decisions of academic and training bodies, allowing them to support the supply of skilled people into the industry. OWIC is committed to reporting annually on progress being made on targets set through the Offshore Wind Sector Deal when it comes to job creation.

As a result, in October 2022, an industry-wide call was put out from OWIC and RenewableUK across multiple channels for organisations that are engaged within the wind industry to provide a range of details about their workforce. If the UK is to have the correct skills resource in the necessary locations to deliver on the target of 50GW of offshore wind generation by 2030, then this information will be vital.

The data requested within the survey has changed over the years and now covers:

- **Organisation Name**
- **Organisation Type and Sub Type (activity)**
- **Job Title / Description**
- **Job role group**
- **Role-sub-groups**
- **Age (previously date of birth)**
- **Gender identity**
- **Nationality**
- **Ethnicity**
- **Phase of Work they are employed in**
- **Project type (previously Asset type)**
- **Employment status**
- **Development status**
- **Full or Part time**
- **Workplace type (site, office, home)**
- **Home location postcode [if living in the UK]**
- **Employer Office Postcode [from which the employee works, if in UK]**
- **Veteran/ex-Military status**

The full detailed set of survey questions is contained in Appendix B.

2. Defining Offshore Wind Job Roles

A common set of people and skills terms was created for the first Offshore Wind people and skills survey in 2020. This saw a common and standardised approach to defining job groups and job roles devised, which has been built on and used to underpin the data gathered in the workforce survey in 2021 and 2022.

The overriding aim here has been to create a common taxonomy of people and skills categories which has been increasingly used across the industry and offers a sense of continuity, this can be seen at Appendix C.

The model highlights the indicative skill level applied to each individual job role. For the purposes of this report, all skills levels are aligned to the UK Skills Level Framework, covering England, Wales, and Northern Ireland. This is set out with the Scottish Qualification and Curriculum Framework included in comparison at Appendix D.

3. Future Casting the Data

The beginning of March 2023 was set as the final cut-off point for the survey, with the data then assembled and cleaned, and the size of the sample assessed. Some **10,150** individuals with their job records were received from **81** companies, which was considered a strong return. While the 2021 survey saw data submitted from a greater number of Companies (97), the 2022 survey saw more data on individuals (10,150 versus 9,961).

It is important we are cognisant in our analysis, however, the sample sizes suggest that the average employer providing data was larger than the average in previous years, which could have a small impact on the conclusions being drawn.

The survey dataset was then uplifted in an effort to make it representative of the UK's Offshore Wind sector as a whole, instead of just the 81 Companies that responded. This was done by creating a comprehensive list of companies in the sector from the RenewableUK membership, of which there are approximately 440, and then sorting them into small, medium and large categories. The data from the 81 was then extrapolated across the 440 companies.

Again, it is important to be mindful that this total number of companies is a high increase over last year's survey, which only saw data extrapolated to 360 Companies. While the same methodology was used, there has been a significant increase in RenewableUK members, and intelligence from other sources indicates that the sector has grown because of intensified focus on Offshore Wind.

This process handed us a new, fully representative dataset made up of **32,257** individual job records – "Today's Workforce".

Once the "Today's Workforce" number was established, it was used as the 2022 baseline for skills in the industry and modelled out to 2030.

The volume of employment for fixed, floating and combined wind is shown below:

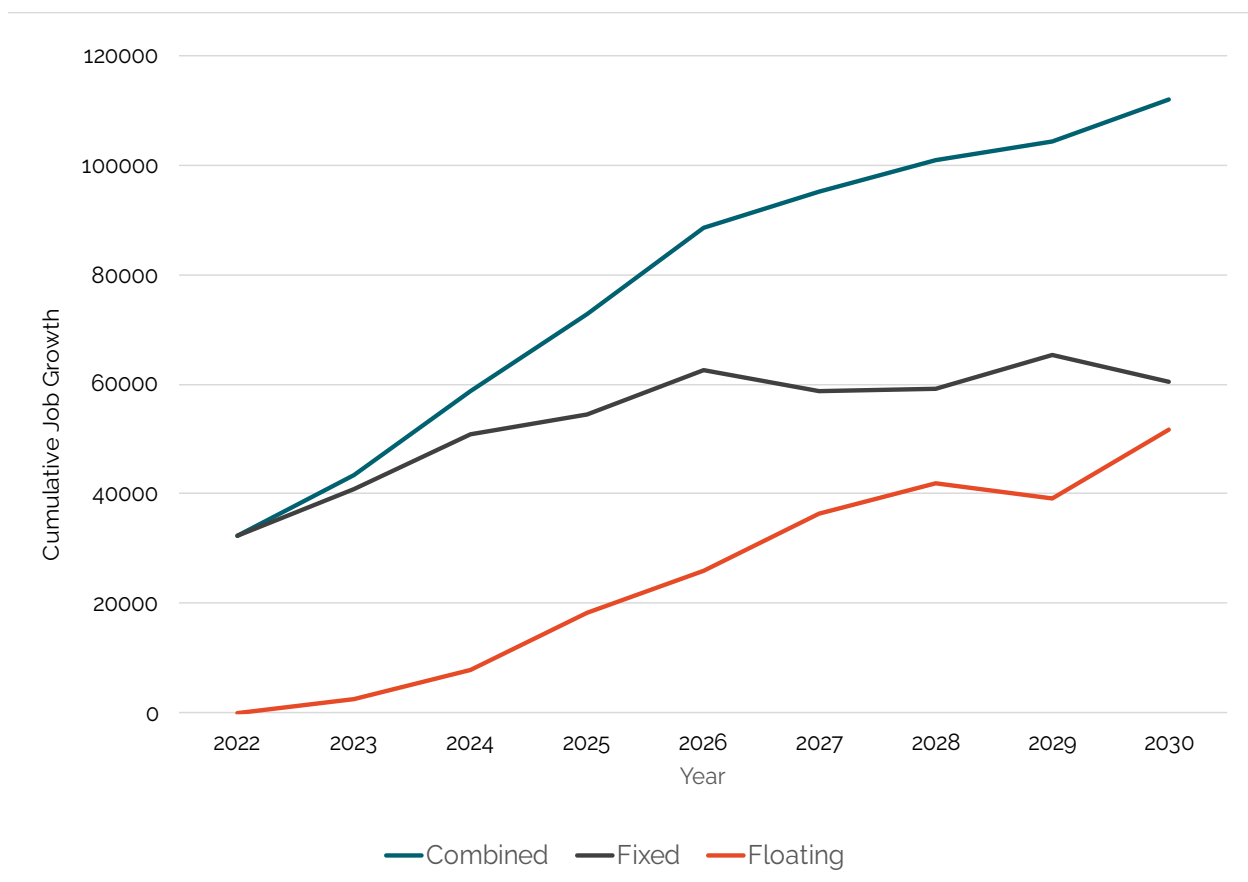


Figure 15 - UK Offshore Wind Employment by Fixed and Floating Wind Arrays

4. Direct vs Indirect Jobs

The final survey data was analysed by categorising companies in the sector to determine whether they are direct, meaning directly involved in power production, or indirect, meaning a role that supports the infrastructure or operations of the direct companies.

When applying this logic to our "Today's Workforce" figures, it gave us **17,394** direct jobs and **14,863** indirect ones, which more-or-less supports the 50:50 split that has been observed in previous years. The number of indirect jobs appear to be increasing, which is likely down to the industry maturing, leading to growth in subcontracting to organisations whose primary purpose is not Offshore Wind generation but rather to provide services to many sectors.

The obvious increase here would be in companies that fabricate steel structures and will service floating wind, but will also support the marine, oil and gas, and construction sector.

5. Productivity and Technology Improvement

To ensure that future casting people and skills numbers are credible and, as a result, actually useful to industry, any model used must take into consideration annual improvements in both:

- **Industry productivity** – the gains made as the industry gets better at designing, constructing, and operating offshore wind farms.

- **Technology improvements** – the gains made as better technology improves things such as wind turbine power curve outputs and size, foundation and cable installation times, and mean time addressing issues involving critical components.

To understand the annual factors to apply to the future cast data to reflect these two critical factors, this report considered many published articles, work carried out by various technical organisations, including the Offshore Renewable Energy Catapult, and the opinion of several experienced industry players. This led to the modelling underpinning this report using:

- a) **0.45%** per annum (on a compound basis) as a reduction factor for Productivity; and
- b) **0.9%** per annum (on a compound basis) as a reduction factor for Technology Improvement.

When combined, this gives an overall effect of 1.35%, as shown below, over 6 years:

The combined [overall] compound effect on the future overall people & skills requirements					
2025	2026	2027	2028	2029	2030
95.95%	94.60%	93.25%	91.90%	90.55%	89.20%

Table 7 - Productivity and Technology Improvement Factors compound effect over the lifetime of a windfarm (applied upto and including 2030)

6. Terminology

The definitions used in this report are defined below.

- **Skills gap** - can be filled by training the existing workforce.
- **Skills shortage** - requires the recruitment of more people with the required skills into the industry. By implication, if there were a ready number of people in the market with the required skills, there would not be a shortage and so skills shortages are associated with insufficient applicants with the skills, experience, qualifications required to fill vacancies.
- **Labour shortages** - relates to the number of people required and not their skills.

Appendix B - Survey Questions

1. Organisation Name

The employing organisation's legal name.

2. Contact Details

3. Organisation Type and Sub Type

Two-tiered data validation to provide quick and clear identification of what role the organisation plays in the industry from Developer to Academic Establishments.

4. Job Title / Description

The employee's contractual job title.

5. Job role group

To define the various entries, each job title will be related to one of the role groups in the common taxonomy which will be accessible on the spreadsheet template through drop down options:

6. Role-sub-groups

To sub-define the role groups further, each identified role group item will then be categorised into sub-groups based upon the mapping in the common taxonomy accessible on the spreadsheet template through drop down options tied to the Role Group:

7. Skill Level

Skill Levels will then be automatically allocated to each job title/role based upon the mapping in the table below accessible on the spreadsheet template through drop down options.

8. Age (previously date of birth)

The employee's age within 5-year ranges, from 15 to 99 years

9. Gender identity

The binary approach was acceptable in the last round of data gathering but the industry is keen to become more inclusive. Recognition of gender identity rather than just binary sex categorisation would contribute to this goal. Whilst many companies are not yet collecting data on gender identity, the two categories of male and female are still included. The employee's gender identity categories as recognised by the Royal College of General Practitioners and used in the 2021 census in England and Wales.

- Male
- Female
- Gender Neutral
- Non-binary
- Gender Fluid
- Gender Queer
- Not provided/not available

10. Nationality

Nationality of employees (as shown on the employee's passport).

11. Ethnicity

The employees' ethnicity categories will continue to be:

- Mixed or Multiple ethnic groups – Including White and Black Caribbean, White and Black African, White, and Asian, Any other Mixed or Multiple ethnic background
- Asian or Asian British – including Indian, Pakistani, Bangladeshi, Chinese, Any other Asian background
- Black, African, Caribbean, or Black British – including African, Caribbean, Any other Black, African, or Caribbean background
- White – Including English, Welsh, Scottish, Northern Irish, or British, Irish, Gypsy or Irish Traveller, Any other White background
- Any other ethnic group

12. Work Phase

This category is available but was not used in the analysis of last survey results. It is proposed that employers are asked to provide this data for each Job Title rather than it being added retrospectively by NSAR or Opergy.

- Pre-construction
- Commissioning
- Construction
- Operations & maintenance
- Decommissioning
- All phases

13. Project type (previously Asset type)

It was agreed with developers and operators that, for those that have both onshore and offshore assets, it might be easier for them to complete if both were listed on the survey. In addition, there is 1GW target for floating wind to be delivered by 2030. It is proposed that an additional category should be added to ensure that the people working in floating wind are included in the survey as the investment plans data for floating wind is already included.

- Onshore & offshore wind
- Offshore fixed wind
- Offshore floating wind
- All wind
- All renewables

It will be assumed in the analysis that those working in offshore fixed, and floating are working 100% of their time in offshore wind. Answers for all other categories will assume that only part of their time is offshore wind and a figure attributed accordingly (to be agreed).

14. Employment status

This is a new category to increase the ability to capture the contractors in the workforce.

- Employee
- Contractor
- Agency

15. Development role

A dropdown for selection. Previously this was garnered by inclusion of key words in the Job Title or a tick box for Apprentices. As key entry routes into the industry, it is important to monitor them and so a dropdown will improve the accuracy of data collection.

- Apprentice
- T level (in England only)
- Graduate development programme
- Intern/trainee (over 6 months)

16. Full or Part time

- Full time
- Part time

17. Home location postcode [if living in the UK]

It is proposed that this category is added as, firstly, a significant proportion of the sector is mobile (estimated 60%) and secondly it is of more value to know where individuals live than the location of their office in understanding what proportion of the local population are benefiting from employment. It also considers marine, peripatetic, itinerant workers etc.

The standard UK postcode where employee lives in a 3- or 4-digit format XX01. Not applicable if outside the UK.

18. Employer Office Postcode [from which the employee works, if in UK]

The county in which the employer office from which the employee works is in a 3- or 4-digit format, not applicable if outside the UK.

19. Veteran/ex Military

An individual's Military status with options of:

- Veteran / ex Military
- Reserve Forces
- No
- Don't know

To measure the success of the ex Military ambition from the OWIC Sector Deal.

Appendix C – Responding Companies

Ace Aquatec	Net Zero Technology Centre
Air Control Tech	NMK Renewables Limited
ARB Wind Ltd	Ocean Expert Ltd
Armultra Ltd	Ocean Winds UK
Associated British Ports	Opergy
Barnes Offshore	Opergy Scotland
BayWa r.e UK Limited	ORE Catapult
Best Proactive Limited	Orlo Energy Ltd
BP	Orsted
Clarksons Port Services Ltd	OspreyCSL
Continuum	OWLC
Copenhagen Offshore Partners A/S	Pegasus Welfare
Corio Generation	Recycl8 Limited
C-Power Energy	Red Rock Power
Crown Estate Scotland	REGENCY OILS LTD
DAERA Marine and Fisheries Division	Renewable Parts Ltd
Donut Safety Systems Limited	RenewableUK/OWIC
Dormor Machine and Engineering Co. Ltd	RPSE Energy Marine Consenting
Dron & Dickson	RWE Renewables Management UK Ltd
East of England Energy Group (EEEEGR)	ScottishPower Renewables
EBC	Shell plc
Enermech	Siemens Energy Ltd
Equinor	Siemens Gamesa Renewable Energy Limited
ESP (Energy Skills Partnership)	SMS Marine Ltd
F-ent	Smulders Projects UK
Fern Communications Ltd	Sonardyne
Floating Energy Alliance	SSE
Flotation Energy	Stowen Group
GAC	Synaptec
Global Energy (Group)	TECOSIM Simulation Limited
Highland Wind Limited	Three60 Energy
Highlands and Islands Enterprise	Titan Surveys
HT Media	Tyne Gangway (Structures) Ltd
Hydrogen East T/A Net Zero East	UXO Control
IKM Testing Aberdeen	Vattenfall
IKM Testing UK	Verlume Ltd
INDUSTRIAS FERRI AS	Vestas Offshore Wind UK Ltd.
JDR Cables	WB Alloys
Jon Ford Environmental	Westwell Developments
Marubeni Europower Ltd.	XceCo Ltd
MJR Power & Automation	

Appendix D – Common Taxonomy of Offshore Energy Roles

Common Taxonomy			
Job Family	Job Family Sub Groups	Approx. Skill Levels (England)	Typical Roles
Management	Leadership	Skill Level 7/8	Company Board roles - Company Directors - C Suite roles etc...
	Management Corporate	Skill Level 6/7	Head of..., Senior Vice President, Director in Title etc...
	Management Operational	Skill Level 6/7	Head of..., Senior Vice President, Director in Title etc...
	Project Management	Skill Level 6/7	Project Director / Project Manager / Construction Director / Construction Manager
	Project Engineering	Skill Level 5/6	Project Engineer / Project Controller / Project Supervisor
	Project Support	Skill Level 4/5	Project Coordinator/ PMO / Project Planner / Project Scheduler
Technical / Professional	Technical - Mechanical Engineer	Skill Level 6/7	Mechanical Engineer
	Technical - Electrical Engineer	Skill Level 6/7	Electrical Engineer, E&I Engineer
	Technical - Structural Engineer/Surveyor	Skill Level 6/7	Structural Engineer, Surveyor
	Technical - Geological Scientist/Surveyor/Engineer	Skill Level 6/7	Geotechnical Engineer / Hydrographic Surveyor / Geo Scientist / Oceanographer / Geologist
	Technical - Process Engineer	Skill Level 6/7	Process Engineer
	Technical - Instrument Engineer	Skill Level 6/7	Instrument Engineer, E&I Engineer
	Technical - Naval Architects	Skill Level 6/7	Naval Architect
	Professional - Legal	Skill Level 7/8	Lawyers
	Professional - Medical	Skill Level 7/8	Doctors, Paramedics
	Professional - Consultant	Skill Level 7/8	Senior Consultants / Associate Consultants / Consultants
	Professional - Audit	Skill Level 7/8	Auditor
Consenting	Senior Management, 10+ people	Skill Level 6/7	Head of..., Senior Vice President, Director in Title etc... of consenting staff
	Senior Project Consent/Team Management <10 people)	Skill Level 6/7	Management of a team of consenting staff delivering consent activities for one or more projects
	Legal Adviser	Skill Level 7/8	Lawyer spending full or part time on consenting related advice
	Consent Project Management	Skill Level 6/7	Project Manager full or part time on project consenting related activities
	Senior specialist/Lead Adviser	Skill Level 6/7	Management or Lead for one or more EIA related topics e.g. ornithology, marine mammals, fisheries, aviation
	Specialist/Adviser	Skill Level 6/7	Specialist advice on an EIA related topics e.g. ornithology, marine mammals, fisheries, aviation
	Senior Policy/Strategic adviser	Skill Level 6/7	Lead responsible for advising consenting related policy or strategic direction
	Policy/Strategic adviser	Skill Level 6/7	Roles supporting consenting related policy or strategic direction
	Project support	Skill Level 4/5	Administrator/Coordinator
	Planning/Scheduling	Skill Level 5/6	Project Planner / Project Scheduler

	Stakeholder Management	Skill Level 6/7	Management of engagement with public, political and statutory stakeholders.
	Land Management	Skill Level 5/6	Negotiating and setting up agreements with landowners for access to land for surveys, construction-and infrastructure
Corporate Services	Corporate Services Human Resources (HR)	Skill Level 6/7	Advisor, Partner, Manager etc...
	Corporate Services Information Technology (IT)	Skill Level 5/6	Helpdesk Technician, Software, Hardware etc...
	Corporate Services Finance	Skill Level 5/6	Accountant, Bookkeeper, General Ledger Clerk etc...
	Corporate Services Legal	Skill Level 7/8	General Counsel, Legal Advisor, Paralegal etc...
	Corporate Services General	Skill Level 4/5	Office Manager, Facilities Manger etc...
	Corporate Services Administration	Skill Level 2/3	PA, Secretary, Executive Assistant etc...
HSEQ	Health & Safety	Skill Level 5	Advisor, Partner, Manager etc...
	Quality	Skill Level 5	Advisor, Partner, Manager etc...
	Environmental	Skill Level 5	Advisor, Partner, Manager etc...
People Development	People Development & Skills	Skill Level 5	Trainer, Teacher, instructor etc...
	Graduate	Skill Level 5	Career stage - Various trades
	Trainee	Skill Level 3	Career stage - Various trades
	Apprentice	Skill Level 3	Career stage - Various trades
Commercial	Sales	Skill Level 5	Sales Manager, BD Manager, Sales Executive etc...
	Marketing	Skill Level 5	Marketing Executive, Marketing Manger etc...
	Commercial	Skill Level 5	Commercial Executive, Commercial Manger etc...
	Procurement	Skill Level 5	Buyer, Procurement Officer etc...
Facilities	Catering & Cleaning	Skill Level 4/5	Chef, Cook, Cleaner
	Facility Maintenance	Skill Level 4/5	Builder, plumber, painter, handyman etc...
	Air & Marine Transport	Skill Level 4/5	HLO, Marine Coordinator
	Logistics	Skill Level 4/5	Crane Driver, Forklift Driver etc...
Construction General Operatives	Senior Construction	Skill Level 5	Supervisor, Shift Manager, Foreman, Chargehand etc...
	Skilled Construction	Skill Level 4	Welder, Plater, Pipefitter etc...
	Semi-Skilled Construction	Skill Level 3	Forklift Driver, Driver, Crane Driver, Scaffolder, Rigger, Painter etc...
	Manual Construction	Skill Level 3	Labourer, Groundworker, Quayside Operative etc...
O&M	Senior O&M	Skill Level 5	Supervisor etc...
	Skilled O&M	Skill Level 4	Turbine Technician, Statutory Inspector, etc...
	Semi-Skilled O&M	Skill Level 3	Scaffolder, Rigger, Painter etc...
	Manual O&M	Skill Level 3	Labourer, Quayside Operative etc...
Electrical	Senior Electrical	Skill Level 5	Electrical SAP etc... Senior Electrical Tech, Senior Electronic Tech
	Skilled Electrical	Skill Level 4	Electrical Supervisor, Level 7 Electrical Technician... Electrical Tech, Electrician, Electronic Tech
	Semi-Skilled Electrical	Skill Level 3	Cable Jointer etc...
	Manual Electrical	Skill Level 3	Cable puller etc...
Mechanical	Senior Mechanical	Skill Level 5	Senior Mechanical Tech
	Skilled Mechanical	Skill Level 4	Mechanical Supervisor, Mechanical Technician
	Semi-Skilled Mechanical	Skill Level 3	Fitter, mechanic

	Manual Mechanical	Skill Level 3	Manual mechanical operative
Marine	Senior Marine	Skill Level 5	Captain, Skipper, Mooring Master etc... OIM, DPO, SSL (Section Stability Leader)
	Skilled Marine	Skill Level 4	1st Officer, DPO, Marine Engineer etc... SSL
	Semi-Skilled Marine	Skill Level 3	CRO, Crane Operator
	Manual Marine	Skill Level 3	Mate, Deckhand, Able Seafarer etc... Roustabout, facilities crew etc
Aviation	Senior Aviation	Skill Level 6/7	Pilot etc...
	Skilled Aviation	Skill Level 5/6	Navigator, Senior Crew etc...
	Semi-Skilled Aviation	Skill Level 3	HLO etc...
	Manual Aviation	Skill Level 3	Groundcrew, Loading Crew etc...
Subsea	Senior-Subsea	Skill Level 5	Diving Supervisor, Survey Party Chief etc...
	Skilled-Subsea	Skill Level 4	Diver, ROV Pilot, Surveyor etc...
	Semi-Skilled-Subsea	Skill Level 3	Diver/Tech etc...Subsea Engineer
	Manual-Subsea	Skill Level 3	Deck Crew etc...

version September 2022

Appendix E – UK Skills Level Framework

Framework	UK Skills Level England, Wales, & Northern Ireland	SQCF Level Scotland	Example Awards
Secondary / Further Education	Level 1	4	GCSE grade D-G BTEC at level 1 Functional Skills at level 1
	Level 2	5	GCSE grade A* - C NVQ Level 2 BTEC at Level 2 Functional Skills at level 2
	Level 3	6	AS/A Level NVQ Level 3 BTEC at Level 3 T Levels
Framework for Higher Education Qualifications	Level 4	7 - 8	Certificate of Higher Education BTEC at Level 4 Higher National Certificate (HNC) Level 4 NVQ
	Level 5		Foundation Degree BTEC at Level 5 Higher National Diploma (HND)
	Level 6	9 - 10	UK Bachelor's degree Degree Apprenticeship
	Level 7	11	UK Master's Degree Postgraduate Certificate
	Level 8	12	Doctorates



Picture kindly provided by EnBW

Offshore Wind Industry Council

www.owic.org.uk/people-skills

