

Career Opportunities in Scotland across

Offshore Wind

Skills
Development
Scotland

 **SOWEC**
Scottish Offshore Wind Energy Council



Contents

Page	
03	Introduction
04	Offshore Wind in Scotland
06	What does a typical Offshore Wind project look like?
08	How big is the opportunity?
09	Job roles
10	- Critical skills gaps and shortages
11	- Project Management
13	- Project Development
17	- Maritime
21	- Manufacturing
24	- Construction
27	- Engineering
30	- Electrical Services
32	- Data & Communications (ICT)
34	- Operations & Maintenance
37	Relevant training for Offshore Wind
38	Practical next steps to a career in Offshore Wind
40	Case studies
41	Annexes
42	Acknowledgements

Introduction

Offshore wind is critical for Scotland, the UK and most of our European neighbours to transition from fossil fuel powered electricity production towards clean, renewable power. **Peak installation will come in the next 10 to 20 years**, however, the windfarms themselves will remain operational well into the second half of this century. **Offshore wind will support thousands of new jobs and offers a career for life.**



Offshore Wind in Scotland

There are already more than 3GW of offshore wind installations in Scottish waters, and a further 7GW in late development stages. ScotWind, a major offshore wind energy initiative, will add a further 30GW when it is complete. INTOG (Innovation and Targeted Oil and Gas), which will help decarbonize offshore oil and gas installations, as well as trialing new ways to capture offshore wind, adds a further 5.4GW. Altogether this means Scotland will have around **45.6GW** of installed offshore wind capacity – **50% of Scotland's renewable energy by 2050**.

Some of these installations are fixed bottom, but an increasing number are 'floating' allowing wind energy to be captured further out to sea.



Figure 1, on the next page, provides an overview of all offshore windfarms: 8 that are already operational, 6 that are consented or under construction, 19 ScotWind sites and 12 INTOG sites.



Offshore Wind in Scotland

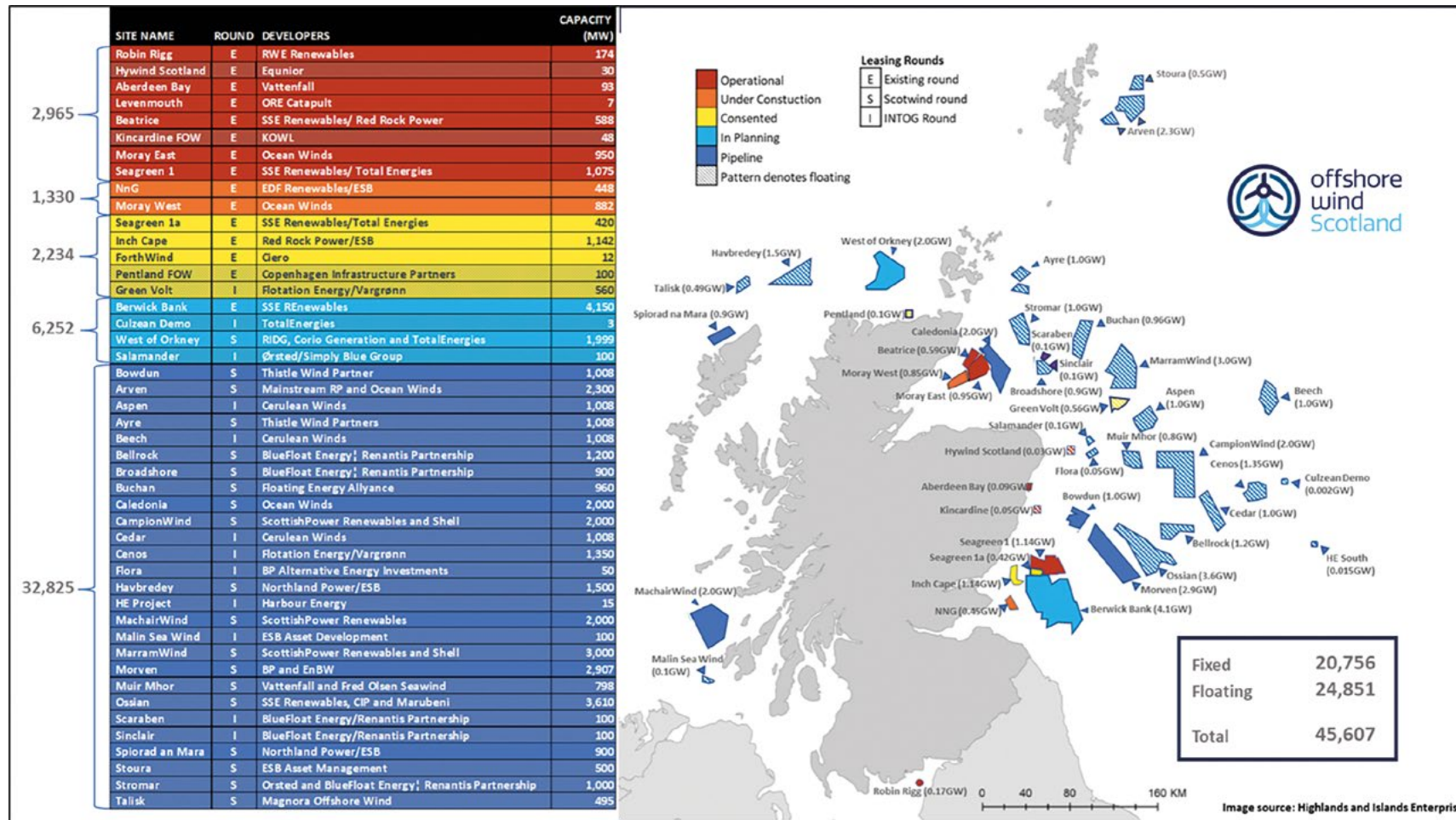


Figure 1
Offshore wind in Scotland
(Offshore Wind Scotland, www.offshorewindscotland.org.uk/the-offshore-wind-market-in-scotland/)



What does a typical Offshore Wind project look like?

A typical offshore wind project is made up of five phases*:

1. Planning & Development

(lasts between 3 and 5 years)

A wind farm developer, often with help of specialist contractors, leads this phase. The developer could be a large electricity company or a wind energy specialist. They assess the potential site by studying the seabed, tidal and wind conditions, and local wildlife throughout the year. The goal is to determine how local conditions vary throughout the year, how much energy can be generated and how to minimise impacts on wildlife. During this time, the developer consults with public agencies, local communities, the fishing industry, and environmental groups. Once the site is confirmed as suitable, the developer designs the wind farm, secures permits, and arranges financing for the build. Most work happens onshore, but offshore activities are needed to survey and monitor the site. Key outcomes include getting planning approval and securing a date for connecting the wind farm to the electricity grid.

2. Manufacturing & Fabrication

(lasts between 1 and 3 years)

After securing approval and a grid connection date, the developer works with various contractors to produce all necessary wind farm components, including:

- **Wind turbines** – often made abroad but with blades manufactured in the UK. These are large and require special transport.
- **Foundations** – for fixed-bottom and floating turbines tethered to the seabed by cables. These are built from steel and concrete, typically in the UK.
- **Subsea cables** – that transfer power from turbines to shore, as well as allowing data and communications to be sent to and from the wind farm. These bulky cables are also made in the UK.
- **Electrical systems** – including switchgear, transformers and communication systems, sourced both locally and internationally. Most work happens onshore, and materials are transported offshore when needed.

3. Installation & Commissioning

(lasts between 1 and 2 years)

This phase involves both onshore and offshore activities. Onshore, construction focuses on connecting the wind farm to the national grid via substations and integration of components on/near shore. Offshore, large turbines and cables are transported to the site by specialised ships. Smaller equipment and personnel use supply vessels like those in the oil and gas industry. After installation, thorough testing ensures everything works correctly under different conditions. Once approved, the wind farm goes “live” and starts generating power. During this phase, many contractors are hired to complete the work, and the developer continues to monitor the site and consult with stakeholders.

* each phase lasts a number of years, which can vary depending on the complexity of the project.



What does a typical Offshore Wind project look like?

A typical offshore wind project is made up of five phases*:

4. Operations & Maintenance

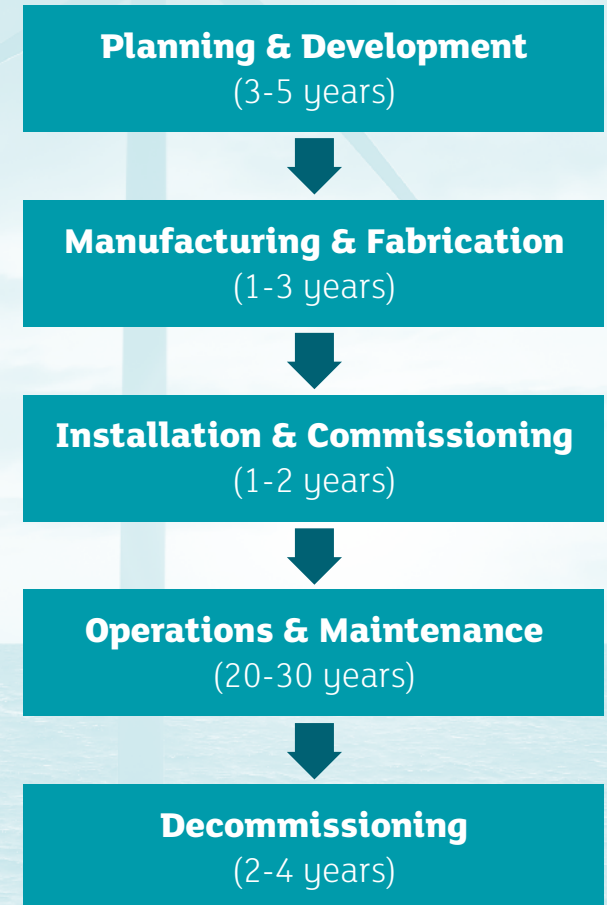
(lasts between 20 and 30 years)

The wind farm developer or its subcontractor operates and maintains the wind farm. This involves remote monitoring, with technicians analysing data and using submersible or airborne remotely operated vehicles to inspect structures. Maintenance is performed every 6-12 months, and repairs are made when needed. A well-maintained wind farm can operate for 20-30 years before it needs to be decommissioned.

5. Decommissioning

(lasts between 2 and 4 years)

At the end of a wind farm's life, there are a few options. The farm can be decommissioned by removing all structures, although this is costly. Alternatively, it can be refurbished and continue operating, or it can be "repowered" with more advanced turbines, which may require starting the planning process again. Often, the most efficient option is to keep the wind farm running by replacing parts as needed, extending its life by 5-10 years. However, this can become challenging if parts are no longer available. The first offshore wind farm in Scottish waters, Beatrice, was a demonstrator site with two turbines. This is likely to be decommissioned over the next few years, however, large scale decommissioning of other sites is not expected until the 2030s.



* each phase lasts a number of years, which can vary depending on the complexity of the project.



How big is the opportunity?

Offshore wind in Scotland will be significant. Between 2024 and 2029 it is estimated that the **workforce** employed by the offshore wind sector will grow from around 9,000 to over **40,000** (Figure 2).

There are many jobs available in offshore wind. This brochure highlights **85 different key job roles**, requiring **different skills** and career progression from **entry through to senior levels**. Of these, 48 are based onshore, 11 offshore and 26 can be on or offshore dependent on the particular job requirements. These key job roles will be supported by many others, that are relevant across several sectors.

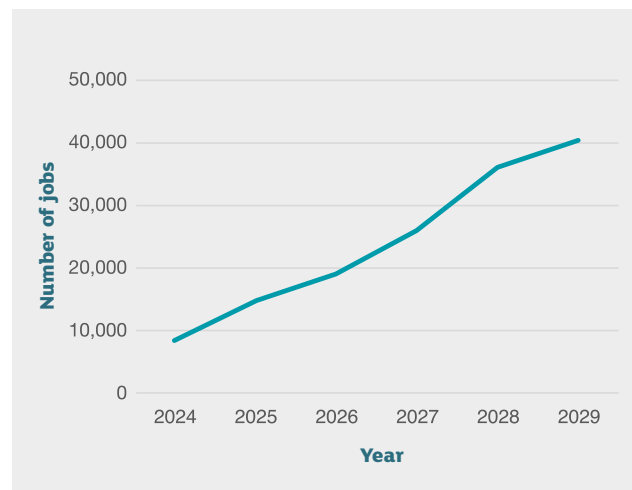


Figure 2
Growth of jobs in the offshore wind sector in Scotland. (Data is from Opregy's Energy Skills Intelligence Hub www.energyskillshub.co.uk/dashboard/)



Most jobs are relevant to multiple offshore wind project phases, offering **whole lifetime career opportunities**.

In addition, there is opportunity to work across the whole of the UK and beyond, with wind farms offshore of the North East and North West of England, Wales and the South coast of England. Many people will be able to work on both **offshore and onshore wind farm projects**.



Job roles

There is a **job for everyone** in offshore wind, whether you are interested in technical, practical, administrative, managerial, number crunching, or engaging with people roles and more.

To make it easier to find your ideal role, this guide has grouped the 85 key jobs under nine different headings:

- **Project Management**
 - oversees all aspects of the offshore wind farm development
- **Project Development**
 - concentrates on the initial stages of planning the wind farm
- **Maritime**
 - provides support to planning, operational and decommissioning stages
- **Manufacturing**
 - produces the different materials, components and devices required for an offshore wind farm
- **Construction**
 - delivers materials, components and devices to site and builds the offshore and onshore structures
- **Engineering**
 - critical to each stage of an offshore wind project, and includes, electrical, mechanical, structural and electronic skills
- **Electrical Services**
 - critical to manufacturing, building and operational stages of an offshore wind project
- **Data & Communications (ICT)**
 - provides the data, analysis, monitoring and communication that is needed for all aspects of offshore wind farm development
- **Operations & Maintenance**
 - critical to ensure that wind turbines continue to operate at their best throughout the 25 years expected lifetime of an offshore wind farm

Many of these roles are open to people with **different levels of experience**, from those leaving school, college or university to others already in work and transitioning from other sectors. Obtaining an entry level position will allow you to gain experience and progress to more senior roles over time.



Critical skills gaps and shortages

There are a number of key job roles that are seen as critical by sector organisations, where there are already, or are expected to be, significant shortages:

- **Project Management**
 - Health & Safety Officer
- **Project Development**
 - Consultant - Grid Connection & Application;
 - Consultant - Site Design & Modelling; Consultant - Energy Yield Assessor & Design; Environmental Consultant; Marine Ecologist; Consents Manager; Maritime Planning Officer; Legal Counsel
- **Maritime**
 - Vessel Master; Mate; Deckhand; ROV Sub-Engineer/Pilot
- **Manufacturing**
 - Quality Controller
- **Engineering**
 - DNO case worker; HV Cable Engineer; Test & Commissioning Engineer
- **Electrical Services**
 - HV Technician; Senior Authorised Person
- **Data & Communications (ICT)**
 - Onshore Processor; Offshore Processor; Control Room Engineer/Technician; SCADA Technician
- **Operations & Maintenance**
 - Wind Turbine Technicians; Robotic Autonomous Systems (RAS) Operations Engineer

The following pages provide a brief description of different key job roles, the qualifications required, whether the role is on- or offshore, and whether it requires onsite or offers hybrid working. Jobs where there are shortages are highlighted in **red**.



Project Management

There are six key job roles associated with the management of offshore wind farm projects, and these are performed throughout the life of the wind farm:

- **Project Director**
- **Project Manager**
- **Logistics Coordinator/Manager**
- **Communications & Engagement**
- **Administrator**
- **Health and Safety Officer**

These jobs require a range of technical and soft skills including:

- **Technical** – project planning, budgeting, resource management, technical writing, data analysis, IT literacy
- **Soft** – communication and presentation, time management, interpersonal



Project Management

■ Project Director

Oversees the planning, financing, and construction of the offshore wind farm. This includes site identification, securing permits, arranging financing, and managing stakeholders. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires degree level qualifications in engineering, environmental science, renewable energy, or business management. Professional project management qualifications, strong financial and stakeholder management skills are highly desirable.

■ Project Manager

Manages the day-to-day running of the project, including reporting, staff management and financial management. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires degree level qualifications in a relevant engineering, scientific or economics subject. Professional project management qualifications are highly desirable.

■ Logistics Coordinator/Manager

Organises the transportation of wind turbines, materials, and personnel to the offshore site, ensuring efficient and timely delivery. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires degree level qualifications in logistics, supply chain management, or maritime studies and/or significant experience in offshore logistics, shipping, or project management.

■ Communications & Engagement Coordinator

Manages public relations and stakeholder engagement, ensuring positive relations with local communities, government agencies, and other stakeholders. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires qualifications and/or significant experience in communications, public relations, or marketing.

■ Administrator

Provides administrative support to the offshore wind farm project, managing documentation, scheduling, and communications within the project team. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires qualifications and/or experience in business administration or a related field. There are relevant apprenticeship frameworks that offer a route to this role.

■ Health and Safety Officer

Ensures that all offshore wind farm activities comply with health and safety regulations, and that risks are managed effectively. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires a relevant certificate in occupational health and safety (such as NEBOSH or IOSH), as well as experience of offshore projects (e.g., renewable energy, oil and gas). There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in red



Project Development

There are sixteen key job roles associated with the development of new offshore wind farm projects:

- **Consents Manager**
- **Maritime Planning Officer**
- **Procurement Manager**
- **Technical Sales Manager**
- **Electrical Sales Engineer**
- **Financial Analyst**
- **Legal Counsel**
- **Consultant - Grid Connection & Application**
- **Consultant - Site Design & Modelling**
- **Consultant - Energy Yield Assessor & Design**
- **Environmental Consultant**
- **Oceanographer**
- **Hydrographer**
- **Geophysicist**
- **Marine Ecologist**
- **Geographic Information Systems (GIS) Technician**

These jobs require a range of technical and soft skills, including:

- **Technical** – project planning, budgeting, resource management, technical writing, data analysis, IT literacy, programming
- **Soft** – communication and presentation, time management, interpersonal



Project Development

■ Consents Manager

Secures the necessary permits, licences and regulatory approvals that are required to develop and operate an offshore wind farm. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in a relevant subject area such as environmental science, marine biology/science, urban planning, geography/earth sciences or environmental law.

■ Maritime Planning Officer

Ensures that offshore wind farm developments comply with maritime regulations and do not disrupt marine navigation or other sea users. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in maritime studies, environmental planning or a related field. Must have knowledge of maritime laws and marine spatial planning.

■ Procurement Manager

Oversees the purchasing of equipment, services, and materials needed for the offshore wind farm, ensuring cost-effectiveness and timely delivery. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in supply chain management, business administration, or engineering. Must have previous experience of procurement for large-scale infrastructure or energy projects.

■ Technical Sales Manager

Sells technical solutions, such as wind turbines or associated equipment, to offshore wind farm developers. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in engineering or a technical field related to wind energy. Must have technical knowledge of wind turbines and power systems. There are relevant apprenticeship frameworks that offer a route to this role.

■ Electrical Sales Engineer

Sells electrical equipment and systems for offshore wind farms, ensuring that the products meet technical specifications and project needs. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in electrical engineering or related field. Must have experience of electrical systems for offshore wind projects. There are relevant apprenticeship frameworks that offer a route to this role.

■ Financial Analyst

Assesses the financial viability of projects, monitors costs, and creates financial models to ensure profitability. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in finance, economics, or business administration. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in red



Project Development

■ Legal Counsel

Secures the necessary permits, licences and regulatory approvals that are required to develop and operate an offshore wind farm. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in a relevant subject area such as environmental science, marine biology/science, urban planning, geography/earth sciences or environmental law.

■ Consultant - Grid Connection & Application

Provides technical and regulatory advice and support to enable the wind farm to connect to the national electricity grid. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires degree level qualifications in electrical engineering, power systems, renewable energy or a related field and experience of high voltage systems including the national grid. Also requires proficiency with grid modelling software.

■ Consultant - Site Design & Modelling

Optimises the wind farm site layout for maximum efficiency and cost-effectiveness while ensuring compliance with regulatory and environmental requirements. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires degree level qualifications in civil engineering, environmental science, renewable energy, or related fields. Also requires proficiency with 3D modelling and geospatial systems software.

■ Consultant - Energy Yield Assessor & Design

Predicts and optimises the energy output of the wind farm over its operational life. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in renewable energy, electrical engineering, meteorology, or a related technical field. Also requires proficiency with energy yield modelling software.

■ Environmental Consultant

Evaluates the impact of the offshore wind farm on marine ecosystems and ensures that the project complies with environmental regulation. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in marine biology, environmental science, or a related field.

■ Oceanographer

Studies ocean currents, wave patterns, and environmental factors to assess the impact of the offshore wind farm on marine environments and its performance. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in oceanography, marine science, or related fields.

*Jobs where there are shortages are highlighted in red



Project Development

■ Hydrographer

Conducts surveys of the seabed to provide accurate maps and data for the installation of wind turbine. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in hydrography, marine surveying, or geomatics and experience with sonar and GIS software.

■ Geophysicist

Studies the physical properties of the seabed to ensure safe and efficient wind turbine foundation design. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in geophysics, geology, or earth sciences.

■ Marine Ecologist

Studies the marine environment to ensure the offshore wind project minimizes its ecological impact. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in marine biology or ecology.

■ Geographic Information Systems (GIS) Technician

Creates, maintains and analyses geographical data to support spatial planning. This is an onshore position, that requires onsite working.

Qualifications:

This role requires a degree in geography or related subject, urban planning, civil engineering or computer science. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in **red**



Maritime

Maritime roles are critical across all project phases, from supporting project development, delivering people and components to the wind farm site, and supporting the monitoring of subsea structures.

There are fourteen key job roles associated with maritime activities. While most are offshore, several are onshore:

- **Master**
- **Mate**
- **Deckhand**
- **Crew Manager**
- **Vessel Supervisor**
- **ROV Sub-Engineer/Pilot**
- **Diver/Dive Supervisor**
- **Shipyard Manager**
- **Ships Agent**
- **Dock Master**
- **Dock Gateman**
- **Line Handler**
- **Marine Coordinator**
- **Shipwright**

These jobs require a range of technical and other skills, including:

- **Technical** – navigation, GPS/GIS, health & safety, resource management, equipment operations, data analysis, IT literacy
- **Other** – communication and presentation, decision making, time management, interpersonal, adaptability, offshore working, rotation and shift working (away from home)



■ Master

Captains a vessel and is responsible for transporting personnel and materials to and from the offshore wind farm site. This is an offshore position, that requires onsite working.

Qualifications:

This role requires Master Mariner certification.

■ Mate

Assists the vessel master in navigation, safety, and operations during offshore wind farm activities. This is an offshore position, that requires onsite working.

Qualifications:

This role requires an Officer of the Watch (OOW) certification that meets Standards of Training, Certification and Watchkeeping for Seafarers (STCW).

■ Deckhand

Supports the vessel crew by performing various tasks on deck, including loading and unloading equipment. This is an offshore position, that requires onsite working.

Qualifications:

This role requires basic safety training to operate at sea that meets Standards of Training, Certification and Watchkeeping for Seafarers (STCW).

■ Crew Manager

Manages the crew for vessels and offshore operations, coordinating crew schedules and rotations and ensuring staffing and safety standards. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience and strong organisational and interpersonal skills.

■ Vessel Supervisor

Oversees the operation of support vessels used for offshore wind farm activities. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience in marine operations and strong organisational and interpersonal skills.

■ ROV Sub-Engineer/Pilot

Operates remotely operated vehicles (ROVs) for underwater inspections and maintenance tasks. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role generally requires an HNC/HND in marine science, engineering or computing science followed by certification in ROV operations, e.g., from an EAL (Excellence in Achievement & Learning) accredited training provider. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in **red**



■ Diver/Dive Supervisor

Performs underwater inspections and repairs, and, as a dive supervisor, manages the safety of diving operations. This is an offshore position, that requires onsite working.

Qualifications:

This role requires a commercial diving certificate, from a UK Health and Safety Executive (HSE) approved training provider.

■ Shipyard Manager

Oversees the operations of shipyards involved in building and maintaining vessels for wind farm activities. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience in shipyard management or marine engineering.

■ Ships Agent

Acts as a liaison between shipowners, vessel operators, and port authorities for offshore wind farm vessels. This is an onshore position, that offers hybrid working.

Qualifications:

No formal qualifications required but relevant experience in shipping logistics or port operations. There are relevant apprenticeship frameworks that offer a route to this role.

■ Dock Master

Manages dock operations where offshore wind farm vessels are loaded and unloaded. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience in port or marine operations.

■ Dock Gateman

Controls access to docks, ensuring security for offshore wind farm vessels and equipment. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience in port or security operations.

■ Line Handler

Assists with mooring and securing vessels at the dock during offshore wind farm operations. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but relevant experience in port or mooring operations.



Maritime

■ Marine Coordinator

Coordinates all marine operations related to offshore wind farm activities, ensuring safe and efficient movements of vessels and people. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in marine operations or related field, and significant offshore experience.

■ Shipwright

Constructs and repairs wooden or composite structures on vessels used in offshore wind farm operations. This is an onshore position, that requires onsite working.

Qualifications:

Requires an HNC/HND in shipwright work or carpentry. There are relevant apprenticeship frameworks that offer a route to this role.



Manufacturing

While most of the wind turbine components are manufactured outside the UK, there are eleven key job roles available that support manufacturing of some components and turbine foundations:

- **Manufacturing Manager**
- **Production Supervisor**
- **Coating Technician**
- **Blasting Technician**
- **CNC Machinist**
- **Laser Operator**
- **Jointing Operative**
- **Welder**
- **Plater**
- **NDT Inspector**
- **Quality Controller**

These jobs require a range of technical and other skills, including:

- **Technical** – budgeting, resource management, equipment operations, health & safety, IT literacy
- **Other** – communication and presentation, time management, interpersonal

Siemens Energy



■ Manufacturing Manager

Oversees the production of wind turbine components, ensuring efficiency and quality. This is an onshore position, that requires onsite working.

Qualifications:

This role requires an HNC/HND or degree in engineering or manufacturing management.

■ Production Supervisor

Supervises day-to-day manufacturing operations, ensuring production targets and quality standards are met. This is an onshore position, that requires onsite working.

Qualifications:

This role requires suitable experience and/or an HNC/HND or degree in manufacturing or industrial engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ Coating Technician

Applies protective coatings to wind turbine components, ensuring durability in harsh marine conditions. This is an onshore position, that requires onsite working.

Qualifications:

This role requires training in surface treatment and coating application. There are relevant apprenticeship frameworks that offer a route to this role.

■ Blasting Technician

Prepares the surfaces of wind turbine components using abrasive blasting before these are treated with protective coatings. This is an onshore position, that requires onsite working.

Qualifications:

This role requires experience in surface preparation and blasting techniques. There are relevant apprenticeship frameworks that offer a route to this role.

■ CNC Machinist

Operates CNC (Computer Numerical Control) machines to produce precision parts for wind turbines. This is an onshore position, that requires onsite working.

Qualifications:

This role requires training or certification in CNC machining. There are relevant apprenticeship frameworks that offer a route to this role.

■ Laser Operator

Operates laser cutting machines to produce turbine parts with precision. This is an onshore position, that requires onsite working.

Qualifications:

This role requires training in laser cutting technology. There are relevant apprenticeship frameworks that offer a route to this role.



Manufacturing

■ Jointing Operative

Carries out the jointing of electrical cables for wind turbines, ensuring proper electrical connections. This is an onshore position, that requires onsite working.

Qualifications:

This role requires a certificate in electrical cable jointing (such as from a City & Guilds accredited training provider). There are relevant apprenticeship frameworks that offer a route to this role.

■ NDT Inspector

Uses non-destructive testing (NDT) methods to assess the integrity of wind turbine structures and components. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires a certificate in NDT.

■ Welder

Performs welding tasks to fabricate and repair wind turbine components. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires a welding certificate (such as from a City & Guilds accredited training provider) and experience in structural and offshore welding, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Quality Controller

Ensures that materials and construction processes meet quality standards for the wind farm components. This is an onshore position, that requires onsite working.

Qualifications:

This role requires an HNC/HND or degree in engineering or manufacturing. There are relevant apprenticeship frameworks that offer a route to this role.

■ Plater

Applies protective coatings to wind turbine. Assembles and fits metal plates for turbine foundations and other structures. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

No formal qualification but requires experience in metal fabrication and plate fitting, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.



*Jobs where there are shortages are highlighted in **red**



Construction

There are seven key job roles associated with the construction of offshore wind farms, with roles available both on and offshore. Most of these roles are involved in multiple project phases:

- **Site Supervisor**
- **Civils Contractor**
- **Storeperson**
- **Transport Operative**
- **Scaffolder**
- **Crane Operator**
- **Crane/Rigging Inspector**

These jobs require a range of technical and other skills, including:

- **Technical** – resource management, equipment operations, health & safety, IT literacy
- **Other** – communication and presentation, time management, interpersonal, offshore working, working at heights, rotation and shift working (away from home)



■ Site Supervisor

Manages on-site activities, ensuring that installation and construction work is completed safely, on time, and according to the project plan. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but must have experience in site supervision for offshore construction projects. There are relevant apprenticeship frameworks that offer a route to this role.

■ Civils Contractor

Responsible for onshore civil engineering work such as building infrastructure to support the wind farm. Variety of roles from constructing site buildings to access roads. This is an onshore position, that requires onsite working.

Qualifications:

Range of skills and qualifications required including surveying, bricklaying, joinery, groundworks, machine operator and general labourer. There are relevant apprenticeship frameworks that offer a route to this role.

■ Storeperson

Manages inventory and storage of materials and tools used in offshore wind farm construction. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications but requires experience in warehouse or inventory management. There are relevant apprenticeship frameworks that offer a route to this role.

■ Transport Operative

Organises the transport of turbine components, personnel, and materials to onshore locations for subsequent transport offshore. This is an onshore position, that requires onsite working.

Qualifications:

No formal qualifications required but must be experienced in logistics and transportation management of extremely long/large loads. There are relevant apprenticeship frameworks that offer a route to this role.

■ Scaffolder

Erects scaffolding structures to support offshore wind farm construction and maintenance activities. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires certification in scaffolding, e.g. from the Construction Industry Scaffolders Record Scheme (CISRS) as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Crane Operator

Operates cranes to lift and position heavy wind turbine components during installation. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires certification as a crane operator, e.g. from the Construction Plant Competence Scheme (CPCS) as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.



Construction

■ Crane/Rigging Inspector

Inspects cranes and rigging equipment used for offshore wind turbine installation to ensure safety and functionality. This is an offshore position, that requires onsite working.

Qualifications:

This role requires certification in rigging and lifting operations that meets, e.g., Lifting Operations and Lifting Equipment Regulations (LOLER), as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.



Engineering

Engineers are critical across all phases of an offshore wind farm. There are ten key job roles:

- **Naval Architect**
- **Structural Engineer**
- **DNO Case Worker**
- **Design Engineer**
- **Product Development Engineer**
- **Marine Engineer**
- **HV Cable Engineer / Cable Testing Engineer**
- **Test & Commissioning Engineer**
- **Field Service Engineer**
- **CAD Technician**

These jobs require a range of technical and other skills, including:

- **Technical** – engineering, resource management, equipment operations, technical writing, data analysis, data visualisation, health & safety, IT literacy
- **Other** – communication and presentation, time management, creative thinking, problem solving, interpersonal, offshore working, working at heights, rotation and shift working (away from home)



Engineering

■ Naval Architect

Designs vessels and marine structures used in offshore wind farm operations. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in naval architecture or marine engineering.

■ Structural Engineer

Designs the foundations and support structures for offshore wind turbines, ensuring that they can withstand harsh marine environments, including waves, currents, and wind loads. This is both an onshore and offshore position, that offers hybrid working.

Qualifications:

This role requires a degree in structural, civil, or marine engineering.

■ DNO Case Worker

Ensures that the wind farm's grid connection application process to the national grid progresses and that all technical and regulatory requirements are met. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in electrical engineering, power systems or a related field. Must have experience in working with utility companies and understanding grid regulations.

■ Design Engineer

Develops engineering designs for wind turbine components, support structures and turbine cabling. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in mechanical, structural, or electrical engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ Product Development Engineer

Develops new turbine technologies and components to improve performance and reliability. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in engineering or product development. There are relevant apprenticeship frameworks that offer a route to this role.

■ Marine Engineer

Designs and maintains offshore structures, vessels, and machinery used in wind farm operations. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires a degree in marine engineering or naval architecture. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in red



Engineering

■ HV Cable Engineer / Cable Testing Engineer

Responsible for designing, laying, and maintaining the cables that connect offshore wind turbines to onshore power grids. This includes both inter-array cables (between turbines) and export cables (to shore). This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires a degree in electrical engineering, marine engineering, or offshore engineering, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ CAD Technician

Prepares detailed technical drawings and blueprints for wind farm structures and components. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires an HNC/HND or degree in drafting or design engineering, marine engineering, or offshore engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ Test & Commissioning Engineer

Manages the offshore installation process, ensuring turbines, cables, and substations are correctly installed at sea. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires a degree in offshore engineering, marine engineering, or mechanical engineering, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Field Service Engineer

Provides maintenance and troubleshooting for electrical and mechanical systems on vessels and offshore wind infrastructure. This is an offshore position, that requires onsite working.

Qualifications:

This role requires a degree in electrical, mechanical or marine engineering. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in red



Electrical Services

Electrical services are provided across all but the planning and development phase of an offshore wind project. There are six key job roles:

- **Senior Authorised Person (SAP)**
- **Electrician**
- **HV Technician**
- **Fibreoptic Technician**
- **Carousel and Tensioner Operator**
- **Cable Jointer**

These jobs require a range of technical and other skills, including:

- **Technical** – equipment operations, health & safety, IT literacy
- **Other** – communication and presentation, time management, problem solving, interpersonal, offshore working, working at heights, rotation and shift working (away from home)



Electrical Services

■ Senior Authorised Person (SAP)

Responsible for ensuring the safe operation, maintenance, and management of high-voltage (HV) electrical systems. This includes overseeing and authorising switching operations, isolations, and the safety of personnel working on high-voltage equipment such as substations, transformers, and electrical circuits. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires a degree in electrical engineering, power systems engineering or related field, extensive experience (typically 5-10 years) in high voltage systems, SAP certification and offshore safety certification.

■ Fibreoptic Technician

Installs and maintains fibre optic cables used for data transmission in offshore wind farm systems. This is an offshore position, that requires onsite working.

Qualifications:

This role requires certification in fibre optic cabling and splicing (e.g., from a City & Guilds accredited training provider), as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Electrician

Installs and maintains electrical systems for wind turbine components and infrastructure. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires certification as an electrician, which can be gained from colleges and private training providers. There are relevant apprenticeship frameworks that offer a route to this role.

■ Carousel and Tensioner Operator

Operates carousel and tensioner equipment used in laying cables for offshore wind farms. This is an offshore position, that requires onsite working.

Qualifications:

This role requires training in operating marine cable equipment, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ HV Technician

Specialises in the installation, maintenance, and repair of high-voltage systems used in offshore wind farms. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires HV technician certification (such as from a City & Guilds accredited training provider) and ideally experience in offshore environments, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Cable Jointer

Installs and maintains electrical cables, especially those used in offshore wind farm transmission systems. This is both an onshore and offshore position, that requires onsite working.

Qualifications:

This role requires certification in high and low voltage cable jointing (such as from a City & Guilds accredited training provider), as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in **red**



Data & Communications (ICT)

Individuals working in data & communications (ICT) roles ensure that offshore wind farms are operating efficiently and optimally. There are six key job roles:

- **IT Manager**
- **Offshore Processor**
- **Onshore Processor**
- **Control Room Engineer/Technician**
- **SCADA Technician**
- **Communication Network Technician**

These jobs require a range of technical and other skills, including:

- **Technical** – programming, software engineering, IoT, machine learning and AI, simulation/modelling, data analysis, data visualisation, database management
- **Other** – communication and presentation, time management, problem solving, interpersonal



Data & Communications (ICT)

■ IT Manager

Manages the IT infrastructure for onshore and offshore wind farm operations. This is an onshore position, that requires onsite working.

Qualifications:

This role requires a degree in information technology or computer science.

■ Offshore Processor

Processes real-time data collected offshore to ensure turbine performance and reliability. This is an offshore position, that requires onsite working.

Qualifications:

This role requires a degree in engineering or data science, as well as certificates for safely working offshore. There are relevant apprenticeship frameworks that offer a route to this role.

■ Onshore Processor

Processes data and information collected from the offshore wind farm, supporting project management and analysis. This is an onshore position, that requires onsite working.

Qualifications:

This role requires a degree in data science, engineering, or project management. There are relevant apprenticeship frameworks that offer a route to this role.

■ Control Room Engineer/ Technician

Monitors, controls and optimises the operations of offshore wind turbines from an onshore control centre. This is an onshore position, that requires onsite working.

Qualifications:

This role requires an HNC/HND or degree in electrical or control systems engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ SCADA Technician

Installs and maintains SCADA (Supervisory Control and Data Acquisition) systems used to monitor wind farm performance. This is an onshore position, that requires onsite working.

Qualifications:

This role requires a degree in electrical or control systems engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ Communication Network Technician

Installs and maintains communication networks for data transfer between the wind farm and onshore facilities. This is an onshore position, that requires onsite working.

Qualifications:

This role requires at least an HNC/HND in computer science or information technology. There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in red



Operations & Maintenance

This phase is the longest in the lifetime of an offshore wind farm, with job roles available both on- and offshore. There are nine key job roles:

- **Operations Manager**
- **Asset Integrity Manager**
- **Facilities Manager**
- **Workshop Manager**
- **Rope Access and Blade Repair Technician**
- **Wind Turbine Technician**
- **Fire Safety Technician**
- **Lift Technician**
- **Robotic Autonomous Systems (RAS) Operations Engineer**

These jobs require a range of technical and other skills, including:

- **Technical** – resource management, equipment operations, health & safety, engineering, IT literacy
- **Other** – communication and presentation, time management, decision making, self-motivation, interpersonal, offshore working, working at heights, rotation and shift working (away from home)



Operations & Maintenance

■ Operations Manager

Oversees the day-to-day operations of an offshore wind farm, ensuring optimal performance and addressing maintenance and operational issues. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in engineering, renewable energy, or operations management. Must have experience of managing large-scale renewable energy projects.

■ Asset Integrity Manager

Ensures that the wind farm's physical assets (turbines, cables, platforms) are maintained in good condition throughout the project's lifecycle. This is an onshore position, that offers hybrid working.

Qualifications:

This role requires a degree in engineering or asset management. Must have experience of offshore wind farms. There are relevant apprenticeship frameworks that offer a route to this role.

■ Facilities Manager

Manages the facilities and infrastructure of onshore support centres for the offshore wind farm. This is an onshore position, that requires onsite working.

Qualifications:

This role requires suitable experience and/or qualifications in facilities management or engineering. There are relevant apprenticeship frameworks that offer a route to this role.

■ Workshop Manager

Manages the onshore workshop where repairs and maintenance of wind farm equipment are performed. This is an onshore position, that requires onsite working.

Qualifications:

This role requires suitable experience and/or qualifications in mechanical engineering or a related field. There are relevant apprenticeship frameworks that offer a route to this role.

■ Rope Access and Blade Repair Technician

Performs maintenance and repair on wind turbine blades using rope access techniques. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires certification in rope access from an Industrial Rope Access Trade Association (IRATA) accredited training provider as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Wind Turbine Technician

Carries out operation and maintenance activities for offshore wind turbines, ensuring they work efficiently and safely throughout their operational life. This is an offshore position, that requires onsite working.

Qualifications:

This role requires training or a formal qualification in electrical, mechanical, or renewable energy engineering. In addition, must have certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in **red**



Operations & Maintenance

■ Fire Safety Technician

Ensures that fire safety systems are properly installed and maintained on offshore wind farm platforms. This is an offshore position, that requires onsite working.

Qualifications:

This role requires certification in fire safety, such as from the National Examination Board in Occupational Safety and Health (NEBOSH), as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Lift Technician

Installs and maintains lifts used on offshore platforms and onshore facilities. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires certification in lift installation and maintenance, such as from the Lift and Escalator Industry Association (LEIA) as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

■ Robotic Autonomous Systems (RAS) Operations Engineer

Develops, operates, and maintains robotic systems that can autonomously perform tasks related to the installation, inspection, maintenance, and repair of offshore wind farms. These can be aerial, submersible or 'on platform/turbine' devices. This is both an offshore and onshore position, that requires onsite working.

Qualifications:

This role requires a degree in robotics engineering, mechanical engineering, electrical engineering, mechatronics, or marine engineering, as well as certificates for safely working offshore, such as from the Global Wind Organisation (GWO). There are relevant apprenticeship frameworks that offer a route to this role.

*Jobs where there are shortages are highlighted in **red**



Relevant training for Offshore Wind

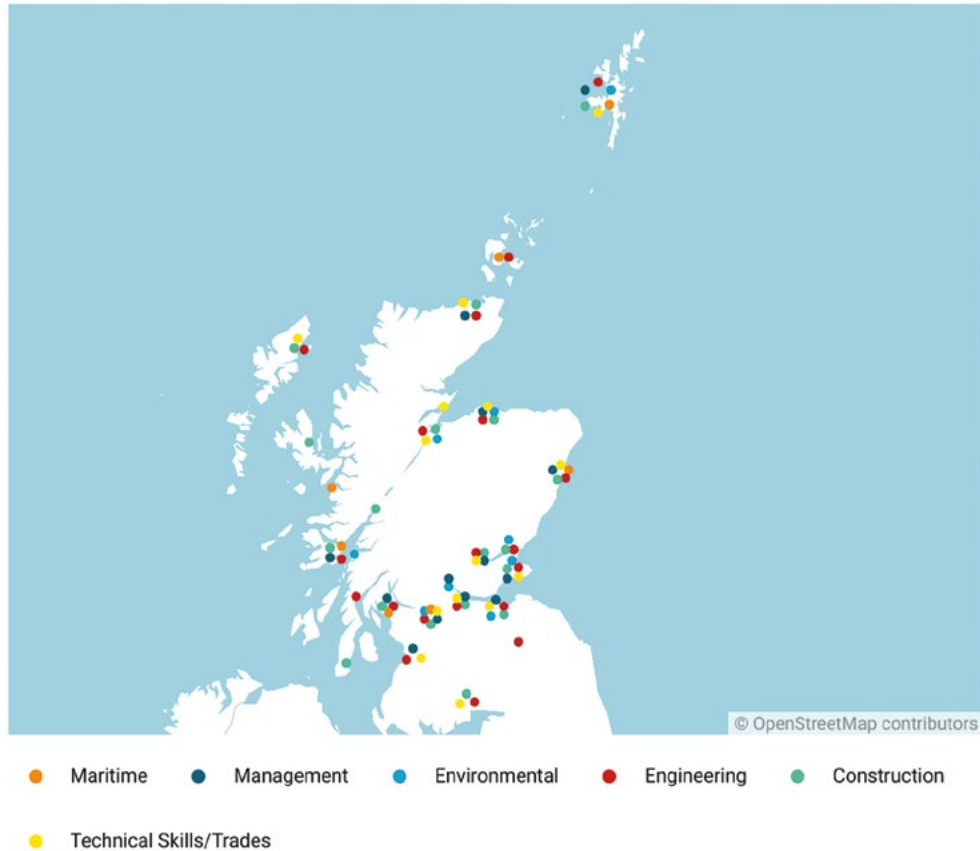


Figure 3

Location of further and higher education institutions that provide education and training for offshore wind. Private providers are located across Scotland (see Annex 2 for further information).

Training is available through universities, colleges and private training providers:

- **256 private sector specialist courses**, from 16 providers in Scotland
- **578 relevant courses offered by Scottish colleges and universities:** 495 general & 83 specialist courses from 36 institutions
- **39 apprenticeship programmes:** 19 Foundation, 17 Modern and 3 Graduate

These cover the following disciplines/specialisms:

- Construction
- Engineering
- Environmental
- Management
- Maritime
- Technical Skills/Trades



Practical next steps to a career in Offshore Wind

There are a number of ways to find out more about careers in offshore wind:

- Visit My World of Work website: www.myworldofwork.co.uk
- Speak to your school careers advisor or visit your local Skills Development Scotland Careers Centre for further careers guidance on any of the careers you are interested in.
- Speak to your local Jobcentre Plus work coach
- Ensure your CV is up to date and highlights the transferable skills for the sector.
- Look out for employer open days or school/college visits.
- Use existing networks, e.g. speak to family and friends who may have knowledge of the sector and even consider the possibilities of shadowing opportunities.
- Seek opportunities for work experience via your school or college.
- Register to receive trade magazines and publications.
- Use online search engines to research companies in the sector.
- Attend local recruitment open days.
- Register to receive updates from online jobs boards and search engines.
- Register on specialist recruitment websites to receive updates.
- Use Social media – Facebook, LinkedIn and Twitter to research key contacts and join specialist interest groups.
- Attend sector conferences and trade shows



Practical next steps to a career in Offshore Wind

Online literature, fact sheets, media sources and training material can provide greater insights:

- Offshore Wind Scotland: Skills for Offshore Wind Portal site (SkillOW) | Offshore Wind Scotland. <https://www.offshorewindscotland.org.uk/skills-for-offshore-wind/>
- RenewableUK: introduction to offshore wind. <https://www.renewableuk.com/our-work/offshore-wind/>
- Scottish Renewables: careers in renewable energy industries. <https://www.scottishrenewables.com/our-industry/careers>
- Offshore Wind Industry Council (2023): Offshore Wind Skills Intelligence Report. <https://www.owic.org.uk/media/gf5ddwxt/offshore-wind-skills-intelligence-report-2023.pdf>
- Offshore Wind Industry Council (2024): OWIC People and Skills Plan 2024. <https://www.owic.org.uk/media/b52pfz3f/owic-people-skills-plan-2024.pdf>
- Scottish Industry Directories: Offshore Wind. <https://osw.directories.scot/>
- Open University: Offshore Wind. <https://www.open.edu/openlearn/mod/oucontent/view.php?id=73763§ion=9>
- Future Learn: Introduction to Offshore Wind Energy. <https://www.futurelearn.com/courses/introduction-to-offshore-wind-energy>
- NESAs: Energy Career Pathways <https://energycareerpathways.com/>
- My Energy Future <https://www.myenergyfuture.global/>



Equinor, Hywind Scotland



Case studies

Still unsure?

Have a look at these case studies, from across Scotland and the UK, which illustrate the range of opportunities in offshore wind



Seagreen
- Scotland's largest
wind farm



A big fan of wind energy!

**Rope Access Painting
in Moray East Offshore
Wind Farm**



41km of subsea cables delivered from Rosyth



Annexes

This brochure is accompanied by two Excel-based annexes:

- **Annex 1** provides further information on job roles and allows users to filter these by role, qualification, experience level, location (on/offshore), mode of work, grouping and whether there are shortages or not. It also allows free text searches
- **Annex 2** provides a list of relevant courses offered by colleges, universities and private providers (accurate at time of publication, January 2025)

Both annexes are available to download from the SDS website:

www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning



Acknowledgements

Skills Development Scotland would like to thank the following organisations which provided valuable input to this brochure:

- Dundee City Council/Forth and Tay Cluster
- DYW / Edinburgh Chamber of Commerce
- Energy Transition Unit at RGU
- ESP
- Flotation Energy
- Inch Cape Wind
- NMIS/Manufacturing Skills Academy
- Offshore Renewable Energy Catapult
- RenewableUK
- Scottish Engineering
- Scottish Government
- Scottish Power Renewables
- Scottish Renewables
- Scottish Funding Council
- SOWEC skills group



Skills Development Scotland

11 George Square
Glasgow G2 1DY

www.sds.co.uk

