

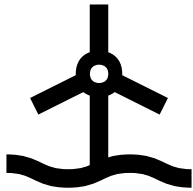
A photograph of an offshore wind farm in the ocean. The foreground shows the churning, white-capped wake of a boat. In the middle ground, a large white wind turbine with a yellow base stands prominently. Other turbines are visible in the distance under a clear blue sky.

Offshore Wind Supply Chain Opportunities



VATTENFALL





An offshore wind world of opportunity

To make a life free from fossil fuel possible for our customers within one generation. That's our goal.

Offshore wind projects can deliver renewable electricity at scale. The UK is leading the way, and we are developing a pipeline of projects that could power 3.6million UK homes.

The opportunities for the UK supply chain are diverse. There are companies of all sizes and backgrounds who are thriving working in the sector.

The industry is expected to generate tens of thousands of skilled jobs across the UK, making offshore wind the backbone of a clean, reliable and affordable energy system.

- By 2030, the UK will have at least 30GW of offshore wind capacity which will provide over 30% of the UK's power needs.
- The industry is investing across the UK, particularly in our coastal communities, and jobs in the sector will more than double to over 27,000 in 2030.
- The offshore wind industry will invest over £48bn in the UK's energy infrastructure and support competitive UK supply chains.
- Global growth in offshore wind will drive a five-fold increase in UK exports, to £2.6bn a year by 2030.

UK project pipeline

Expected Timeline

Norfolk Vanguard - 1.8GW



2021/2022

Onshore
construction
start



Mid 2020s

Offshore
construction
start



Post 2025

Operational

Norfolk Boreas - 1.8GW



2022/24

Onshore
construction
start



Mid 2020s

Offshore
construction
start



Post 2025

Operational

Thanet Extension Offshore Wind Farm - 340MW



2021

Onshore
construction
start



2023

Offshore
construction
start



2024

Operational

Contracting for projects

Each project will have a bespoke contracting strategy, designed to ensure good value for money for UK consumers whilst delivering a well designed, high performing project.

The likely packages of work will include the following:

Wind turbines



Wind turbine foundations



Transport and installation



Grid - including electrical equipment, offshore and onshore facilities



Cables - export and inter array cable supply and installation



Can your business benefit?

Offshore wind is a major opportunity for SMEs across a multitude of sectors. There are thousands of SMEs already working in our supply chain alone across the UK.



Within each package of work there will be hundreds of opportunities for companies to provide goods and services to the projects.

Onshore

Onshore Cable

Ground thermal resistivity surveys
Ground investigation surveys (bore holes)
Topographical survey
Design and engineering for highway and access improvements
Consulting & engineering services for production of final documentation for DCO conditions discharge (transport & highways, access improvements, preparation of traffic related plans)
Cable haul road and site drainage designs
HDD and 3rd party support
Hydrology and UXO surveys and reports

Cable Route - Duct Installation

Pre and post construction drainage
Fencing
Archaeological and ecological surveys
Procurement of cement bound sand, ducts, marker tiles and installation
Removal of displaced excavated material
Trenchless crossing design, procurement and install
Vehicle marshalling
Portable welfare facilities

Cable Route - Cable Install

Jointing gangs (specialist skill)
Fibre optic splicing
Cable pulling (equipment and labour)
Reinstatement of temporary access routes to joint bays (fencing, topsoil stripping, grading, surface laying, etc.)

Mobilisation areas

Labour and materials required to establish the site (fencing, topsoil strip, grading, surface laying)
Labour and materials required to reinstate the site
Vehicle marshalling, cleaning and servicing

Onshore Substation

Topographical and geotechnical surveys
Onshore Engineering Support
NG Design Verification & Commissioning Compliance
Primary Plant Design
Secondary Design
Civil Design
Civil Enabling Works
Civil Contractors Balance of Plant (Electrical & mechanical) – Supply & assembly

Substation

400 kV OHL works (temporary towers, new towers, piling, construction, stringing, etc.)
A47 new right lane filter and new permanent access road (asphalt) construction
Drainage works (attenuation ponds –ongoing maintenance)
Planting (ongoing maintenance required)

Accommodation & Buildings

Cabins, messrooms, canteens, offices, stores, security
Establishment, maintenance, removal, provision of services

Services

Electricity, water, drinking water
Establishment, supply (fixed or temporary), removal

Civil Works

Removal & legal disposal of cable drums and/or redundant equipment/materials resulting from works
Supply & install Substation Labelling
Substation Signage
Realignment of fibre ducts
Supply & install Fibre Optic Joint Boxes
Excavation & Reinstatement of HV Joint Bays
Grouting of apparatus bases
Craneage of cable drums

Onshore

General & Miscellaneous

Onshore cable route landscaping studies
Contaminated land studies and surveys
RAMS support activities
Consultancy services for OFTO transfer
Grid code compliance consulting
Transient studies
Archaeological mitigation works
Ecology monitoring & mitigation works
(incl. support & survey work)
Substation design support
Environmental Clerk of Works
Ecological Clerk of Works
Agricultural Liaison Officer
Arboricultural Liaison Officer
Community Liaison Officer
COCP Special Support
Environmental construction support
COMSOL Calculation Software
Power Factory RMS Software
Temporary Warehousing
Fencing & lighting
Fuel & Lubes
Data management
Office Cleaning
Waste collection
Vehicle Leasing
Vending machines
Catering services
Temporary Power Supplies
Safe Permit to Work Software
Cable Burial Assessments support
Lifting equipment
Plant hire
Crane hire
Fork lifts & telehandlers
Storage containers
Project photography/videography
Misc. Mechanical services
Misc. Electrical services
Transport

Offshore

Marine hydrographers, engineers and
Geoscientists
Office administration/support staff
Employment typically
Marine vessel crew
O & M site manager
Maintenance team leader
Technicians
Marine Co coordinators
Augmented reality
Divers
HSE specialists
Environmental consultants - Offshore
Legislation consultants - Offshore
Client Reps
Scour protection & marine growth monitoring
Marine Warranty surveyors
Logistics personnel
NDT technicians
Seafastenings fabricators
Welders
Photography
Drones
Fuel & Lubes
CTVs
Barges



What does it take to compete?

Register with us to take advantage of early supply chain information.

Across our projects, we hold supply chain sessions for businesses to come along and find out more about the opportunities in the industry.

Your company will need to be of sound financial standing and have a strong health & safety policy and track record. Come and talk to us to benefit from early information. Find out what accreditations or training that might assist your company when competing for contracts.

Many of the opportunities will be through contracts from our main suppliers. You can sign up for many industry events through Renewable UK to get to know the industry and the major players, and get to understand their expectations and the opportunities that will be open for competition. Once selected, they will be a part of our supply chain engagement programme.

Building skills to work in the supply chain

Offshore wind is recognised as a growing and important part of the economy. There is funding, training and support available to businesses interested in working in the industry.

Identified skills areas crucial to the success of offshore wind sector ¹

Asset Management Specifically environmental, compliance and engineering

Project Management Ability to handle large contracts worth millions

Leadership Ability to manage and organise teams

Engineers Across a number of relevant disciplines such as mechanical and electrical

Scientists In environmental and physical sciences such as marine biology

Technicians Particularly relating to blade and turbine maintenance

Health and Safety Advanced first aid and rescue professionals

Soft Skills Such as team working, team living and problem solving

The Focus of Innovation¹

Developing tomorrow's innovators is vital for the offshore wind industry if it is to achieve its full potential, particularly in areas such as:

- Training and technical standards
- Vessels and logistics solutions
- Subsea cables
- Transmission
- Foundations
- Turbine technology
- Artificial intelligence and robotics
- Data analytics

The skills required within the offshore wind sector are similar to those in existing sectors such as onshore electricity generation, transmission and distribution, general manufacturing and the offshore oil and gas sector.

The UK oil and gas sector has shed many jobs over the past four years. As this sector is close in terms of both geography and skillset, it is worth monitoring employment trends and how the offshore wind sector might either benefit from continued job losses by attracting this cohort or react if employment levels begin to increase.¹



There are 14,000 ex-military personnel who leave the armed forces each year, many of whom will have skills transferable to the offshore wind sector.¹

Get involved and stay up to date

- The Offshore Wind Sector Deal outlines the national vision for the industry and the plans to support future skills needs.
- Contact your Local Economic Partnership, who work alongside local authorities to provide support to local businesses.
- See how you can benefit from the apprenticeship levy which offers businesses opportunities to upskill its own staff – for the benefit of both employees and the business.
- Take a look at the offshore skills and people website to find out more about the industry's world of work.
- Engage with the right suppliers – there are industry events throughout the year you can attend to meet suppliers, get more information and benefit from expert knowledge and advice.
- Useful links:
www.vattenfall.co.uk/supplychain
<http://offshorewindcareers.co.uk/>

¹ <https://s3-eu-west-1.amazonaws.com/media.newore.catapult/app/uploads/2018/10/30113252/Aura-EU-Skills-Study-Summary-Report-Oct-2018.pdf>



