

United Kingdom Offshore Wind Turbine Market By Installation Type (Fixed, Floating), By Turbine Capacity (Up to 3 MW, 3 MW to 5 MW, More than 5 MW), By Region, Competition Forecast & Opportunities, 2028F

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Abstracts

United Kingdom (UK) Offshore Wind Turbine market is anticipated to grow during the forecast period. In 2021, 2,500 offshore wind turbines in the UK generated 12% of the country's electricity. 15% of the electricity in the UK came from nuclear. Both are insignificant in comparison to gas, which provided 40% of the power in the UK.

The UK government articulated its commitment to supporting renewable energy sectors through The Ten Point Plan for a Green Industrial Revolution published in the late 2020s. This plan pledged to mobilize over USD 15 billion in support of the green industrial revolution with hopes that the private sector could be persuaded to match this threefold. And by 2030, UK government aim to produce 40GW of offshore wind, including 1GW of innovative floating offshore wind in the windiest parts of seas. In 2030, this would be enough offshore wind energy to power every home in the UK.

Moreover, the offshore wind sector has matured rapidly over the past few years in the waters around the UK and it is now capable of providing a reliable delivery of the low carbon energy mix with proven technology. The UK has retained its top spot in the industry in terms of projects in the pipeline or already in use. Offshore wind currently contributes about 13% to the UK electricity mix. The UK now possess around 12.7 GW of connected offshore wind energy across 44 wind farms, totalling over 2,500 turbines. It installed over 2.3 GW of new installations in 2021 alone which made up 70% of total installations in Europe

that year.

In addition, the UK electricity market is transitioning to a greener energy mix. By 2025, all coal-fired power plants in the UK will be shut down, and offshore wind power will become a bigger part of the country's low-carbon energy mix. In the recent years, the offshore wind industry in the UK's surrounding waters has developed quickly, and it is now ready to offer a dependable supply with tested technology. In fact, the UK has maintained its top position in the sector in terms of projects that are either in the works or are currently operational, having a combined capacity of 38.9GW. Nowadays, around 10% of the UK's electricity comes from offshore wind.

The United Kingdom is anticipated to soon offer excellent potential for the offshore wind energy sector, according to the International Renewable Energy Agency. The nation needs more than 125 GW of offshore wind energy to meet the rising demand for power and to reach the net-zero goal by 2050. This opens up a lot of market opportunities for offshore wind energy.

Wind turbine's blades can rotate at a constant or variable speed between 13 and 20 times per minute, depending on the technology utilised. The rotor's velocity varies according to the wind speed to maximise efficiency.

United Kingdom Offshore Wind Turbine Market: Drivers & Trends

Green Hydrogen Production:

Increasing inclination toward clean energy has been compelling the United Kingdom government and the energy companies (including oil & gas firms) to provide due consideration to alternative sources of energy that are cleaner and energy efficient. Green Hydrogen, a zero-emission fuel that can be produced using offshore wind energy as a power source, is considered a viable option as an alternative fuel source. Apart from the government and the energy firms, other end users looking to utilize green hydrogen include steel producers and chemical companies. Other applications where green hydrogen can be used are transportation, heating, and grid storage. Various projects have been proposed where offshore wind turbines can be used for production of green hydrogen. For instance, in February 2023, UK green hydrogen pioneer GeoPura has received USD 39.28 million investment from global industry leaders, with the round led by GM Ventures, the investment arm of General Motors, and co-led by

Barclays Sustainable Impact Capital with participation from SWEN CP and Siemens Energy Ventures.

Their aim is to scale its green hydrogen business, which is replacing diesel-fuelled generators and enabling zero-emissions energy across the board to create a more sustainable world. The rising inclination towards green hydrogen is anticipated to propel the United Kingdom offshore wind turbine market.

Increasing Investment in the Clean Energy Sources is Projected to Drive the Market Growth:

To reduce carbon emissions, the United Kingdom government is taking necessary measures towards encouraging to invest in renewable energy sources such as solar and wind energy. As a result, the amount of electricity generated from wind energy has grown significantly in recent years. Rising electricity demand and increasing concern for non-renewable energy sources are propelling the growth of offshore wind energy. Additionally, the declining price of wind turbines and advancements in wind technology have reduced the cost of generating electricity from wind energy. Moreover, growing competition among market players has led to a decrease in installation cost, contributing to a decrease in the cost of electricity generated from wind turbines. As a result, the United Kingdom has steadily increased its offshore wind capacity, thereby driving the market growth.

Government Policies and Initiatives:

Offshore wind energy is widely regarded as one of the most credible sources for increasing renewable energy production towards a resilient and decarbonised energy supply. Therefore, government of United Kingdom has been driving a green economy through various actions and initiatives in offshore wind energy. For instance, the UK government will target clean, green offshore wind to power more than 30% of British electricity by 2030. Offshore wind energy is an abundant and renewable source of energy. Government of United Kingdom has been working on framing various initiatives to capture and utilize offshore wind energy. For instance, in 2022, the UK Minister for Energy and Climate has signed a landmark agreement on renewable energy cooperation with EU and North Seas countries. The initiative is expected to support UK's ambitious targets of increasing offshore wind fivefold to 50GW, by 2030. Such initiatives are likely to push the United Kingdom offshore wind turbine market forward.

United Kingdom Offshore Wind Turbine Market: Challenges

Capital-Intensive Projects:

Though possessing long-term benefits, offshore wind energy throws immense challenges regarding the capital investments required to set up offshore wind turbine infrastructure. The offshore wind farm developers must consider the huge costs associated with the fabrication of wind turbines and the transportation of the same to the offshore sites. The construction of the submerged foundation for the wind turbines poses additional challenges, given the hostile marine conditions and the superior quality of a material and skilled set of manpower required to execute the same. Various wind farm developers have experienced cost overruns during the construction phase despite carefully analysing the project's financial feasibility before the initiation. Such capital-intensive nature of the project is likely to hamper the growth of the United Kingdom offshore wind turbine market.

Disruptions in Turbine Blade Supply:

Instead of improving the wind turbines' efficiency and reducing the overall cost of offshore wind energy farm infrastructure, the manufacturers have started fabricating larger turbine blades (with a rating of 10+W). However, transporting such large-sized blades to the offshore sites can be immensely challenging. Trailers which can carry such blades are not only difficult to arrange but also very costly. Once the blades reach the shores, supplying them to the wind farms within the sea from the shores is another challenge, necessitating both skilled manpower and appropriate equipment to transfer the blades to the proposed wind farm location. Such supply chain challenges are likely to hamper the growth of the United Kingdom offshore wind turbine market.

United Kingdom Offshore Wind Turbine Market: Opportunities

Rising Annual Auctions:

The government stated in February 2022 that financing auctions under the Contracts for Difference (CfD) scheme will now take place annually, rather than every two years. The CfD is the UK government's premier programme for obtaining large amounts of sustainable energy at the most affordable price for consumers. CfDs shield developers from fluctuating wholesale power prices, encouraging investment in renewable energy and lowering the cost of financing. Increasing the frequency of auctions is expected to give more projects with opportunities to enter the pipeline, thereby accelerating the decarbonisation of UK energy, and boosting the benefits to the UK supply chain. Hence,

with the rising number of annual auctions, the demand for offshore wind turbine market is expected to boom across the country.

Offshore Electricity Transmission (OFTO):

The Office of Gas and Electricity Markets' (Ofgem) OFTO regime supports the government's renewable energy targets by connecting renewable wind generation and putting consumers first. Ofgem is the UK regulator for the electricity and downstream natural gas markets in Great Britain. The sale of offshore transmission assets and the issuance of licences necessary for the transfer of electricity produced by an offshore wind farm to the onshore grid are managed by Ofgem through a competitive tendering process. The Offshore Transmission Network Review (OTNR), an ongoing initiative from the Department for Business, Energy, and Industrial Strategy (BEIS), aims to strengthen the connection between offshore generation and the onshore transmission network and to encourage the use of multipurpose interconnectors.

Market Segments

United Kingdom Offshore Wind Turbine market is segmented into installation type, turbine capacity and region. Based on installation type, the market is segmented into fixed and floating. Based on turbine capacity, the market is segmented into Up to 3 MW, 3 MW to 5 MW, and more than 5 MW. Based on region, the market is segmented into England, Scotland, Wales, and Northern Ireland.

Market Players

Major market players in the United Kingdom offshore wind turbine Market are Innogy Renewables UK, Nordex SE, Iberdrola, S.A., Siemens Gamesa Renewable Energy, Scottish and Southern Energy plc, GE Renewable Energy, Enercon GmbH, EDF Renewables UK, Orsted Power (UK) Limited, Vattenfall AB.

Report Scope:

In this report, United Kingdom Offshore Wind Turbine Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

United Kingdom Offshore Wind Turbine Market, By Installation Type:

Fixed

Floating

United Kingdom Offshore Wind Turbine Market, By Turbine Capacity:

Up to 3 MW

3 MW to 5 MW

More than 5 MW

United Kingdom Offshore Wind Turbine Market, By Region:

England

Scotland

Wales

Northern Ireland

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in United Kingdom Offshore Wind Turbine Market.

Available Customizations:

United Kingdom Offshore Wind Turbine Market with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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