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Offshore Wind Power Market Forecasts to 2032 – Global Analysis By Component (Wind Turbines, Electrical Infrastructure, and Other Components), Installation Type (Fixed Structure, and Floating Structure), Turbine Capacity, Location/Water Depth, Application, and By Geography

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Abstracts

According to Stratistics MRC, the Global Offshore Wind Power Market is accounted for $55.1 billion in 2025 and is expected to reach $135.4 billion by 2032, growing at a CAGR of 13.7% during the forecast period. Offshore wind power develops wind farms located at sea using fixed-bottom and floating turbine technologies to capture stronger, steadier winds. Larger turbine sizes and improved foundations drive higher capacity factors, making offshore attractive for utility-scale renewable generation. Project development requires marine permitting, grid connection, and substantial capital investment, often supported by power purchase agreements and government auctions.

Market Dynamics:

Driver:

Strong government policies and renewable energy targets

Strong government policies and renewable energy targets have accelerated offshore wind deployment by providing clear market signals and financial backing. National and regional auctions, subsidies, and long-term power purchase agreements reduce revenue uncertainty for developers and attract institutional investment. Moreover, maritime spatial planning and coordinated grid upgrades enable large-scale project

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siting, while multi-country cooperation in the North Sea and Asia unlocks cross-border infrastructure. These measures lower project risk, incentivize supply chain expansion, and stimulate cost reductions.

Restraint:

High capital expenditure and project development costs

High capital expenditure and project development costs constrain offshore wind growth by raising barriers to entry and prolonging payback periods. Costs for turbines, foundations, specialized installation vessels, port upgrades, and grid connection inflate upfront budgets, and recent supply chain pressures have driven material and logistic expenses higher. Furthermore, elevated financing costs and complex permitting processes amplify project risk, deterring some investors. Such cost pressures slow project pipelines and can prompt strategic pauses or scope reductions.

Opportunity:

Development of floating offshore wind technology for deep-water sites

Development of floating offshore wind technology presents significant opportunity by enabling projects in deep-water locations previously inaccessible to fixed-bottom turbines. Floating platforms allow access to stronger and more consistent wind resources farther offshore, improving capacity factors and energy yields. Pilot projects in Europe and Asia have validated technical feasibility and are driving cost reductions through scale and design improvements. Also, combining offshore hydrogen production with other renewable energy sources can open up new ways for developers to make money and speed up the process of bringing these technologies to market around the world.

Threat:

Competition from other renewable energy sources

Competition from other renewables, notably onshore wind and solar PV, challenges offshore wind by offering lower capital costs and faster deployment timelines, which appeal to policymakers and investors prioritizing near-term capacity. Declining levelized costs for solar and onshore wind, combined with rapid deployment of energy storage, can reduce the urgency for more capital-intensive offshore projects. Additionally, hybrid

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systems and flexible generation affect the economics of the power grid, making it necessary for offshore developers to obtain competitive contracts and show the value of their systems.

Covid-19 Impact:

COVID-19 disrupted offshore wind through supply-chain delays, workforce restrictions, and temporary port closures that postponed construction and increased costs. Lockdowns and travel limits hampered offshore vessel operations, while health protocols raised logistical complexity and insurance considerations. Nonetheless, targeted government stimulus, resilient project management, and prioritization of critical supply chains limited long-term damage. By accelerating digital collaboration and contingency planning, the industry recovered, preserving investor confidence and maintaining strategic deployment pipelines.

The wind turbines segment is expected to be the largest during the forecast period

The wind turbines segment is expected to account for the largest market share during the forecast period by supplying the core generation assets that determine project capacity, cost, and performance. Turbine orders drive major portions of capital expenditure, while technological advances in larger rotor diameters and higher-capacity nacelles improve energy yield and lower levelized costs. OEMs, turbine financing models, and long lead times make turbines central to project economics. Consequently, demand for next-generation turbines and a service contract grow and underpin long-term decarbonization objectives worldwide securely.

The floating structure segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the floating structure segment is predicted to witness the highest growth rate owing to expanding project pipelines in areas with deep waters, such as parts of Asia Pacific, Japan, and the western coasts of Europe. The technology allows larger project footprints, stronger wind regimes, and siting flexibility that attract developers. As industrialization reduces unit costs and supply chains mature, financiers become more comfortable, prompting faster deployment and broadening global market access.

Region with largest share:

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During the forecast period, the Europe region is expected to hold the largest market share due to its mature supply chain, extensive shallow continental shelves, and strong policy commitments across the EU and UK. Longstanding investments in ports, installation vessels, and local manufacturing support rapid project execution and cost reductions. Regional cooperation around North Sea infrastructure and auction programs provides steady pipeline visibility. In addition, ambitious renewables targets and established market rules support sustained deployment and export expertise.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR as coastal nations accelerate renewable capacity additions to meet climate goals and energy security objectives. Rapidly expanding electricity demand, favorable wind resources off China, Taiwan, South Korea, and Japan, and rising domestic manufacturing capacity drive growth. Moreover, policy incentives, auctions, and local content requirements stimulate supply chain development. Combined with increased investment from domestic and international players, the region is fostering international partnerships.

Key players in the market

Some of the key players in Offshore Wind Power Market include ?rsted A/S, Vestas Wind Systems A/S, Siemens Gamesa Renewable Energy S.A., GE Renewable Energy, Equinor ASA, RWE AG, Iberdrola S.A., SSE plc, Vattenfall AB, EnBW Energie Baden-W?rttemberg AG, China Three Gorges Corporation, Mingyang Smart Energy Group Co., Ltd., Goldwind Science & Technology Co., Ltd., BP plc, Shell plc, Northland Power Inc., Jan De Nul Group, and Royal Van Oord N.V.

Key Developments:

In November 2025, Vestas is proud to have received orders for 347 MW in the USA and Canada for undisclosed projects.

In November 2025, ?rsted announced it will commercialise its low-noise “Osonic” monopile installation method, following deployment at its Gode Wind 3 offshore wind farm.

In July 2025, Siemens Gamesa was selected by Ocean Winds as turbine supplier for its BC-Wind offshore-wind project in Poland (26 turbines) under agreement.

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In June 2025, EnBW announced it will build the He Dreiht offshore-wind farm (900 MW) using Vestas 15 MW turbines, Germany’s first subsidy-free offshore wind farm.

Components Covered:

- Wind Turbines
- Electrical Infrastructure
- Other Components

Installation Types Covered:

- Fixed Structure
- Floating Structure

Turbine Capacities Covered:

- Up to 5 MW
- 5 MW to 10 MW
- Above 10 MW

Locations Covered:

- Shallow Water (oO 30m Depth)
- Transitional Water (30m – 60m Depth)
- Deep Water (> 60m Depth %- %Primarily Floating Wind)

Applications Covered:

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- Utility-Scale Power Generation
- Commercial & Industrial (C&I) Projects
- Green Hydrogen Production

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India

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- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar
- South Africa
- Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations

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- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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