

Floating Offshore Wind Power - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

Floating Offshore Wind Power Market Analysis

The Floating Offshore Wind Power Market size in terms of installed base is expected to grow from 0.39 gigawatt in 2025 to 7.69 gigawatt by 2030, at a CAGR of 81.48% during the forecast period (2025-2030).

This expansion reflects the sector's ability to tap deeper-water sites that hold 80% of global offshore wind resources, while rapid cost compression is pushing the Levelized Cost of Energy toward EUR50-100/MWh by 2030. As the floating offshore wind market enters a commercial phase, supply chains built around conventional fixed-bottom projects are being re-tooled to handle Semi-Submersible and Spar-Buoy platforms that can be assembled quayside and towed to depths exceeding 1,000 m. Developers are also pivoting to turbines above 15 MW to spread foundation and installation costs over larger generation envelopes. Regional policy adds momentum: Europe's revenue-stabilizing Contracts for Difference (CfD) reforms, the United States' "Floating Offshore Wind Shot," and Japan-Korea lease auctions are unlocking capital, while oil-and-gas platform conversions in the Gulf of Mexico highlight cross-sector synergies. These forces, combined with emerging hydrogen co-location schemes that soak up surplus power, position the floating offshore wind market for steep scale-up this decade.

Global Floating Offshore Wind Power Market Trends and Insights

Growing Lease Awards in U.S. & APAC Deep-Water Zones

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A surge of deep-water lease auctions is reshaping the floating offshore wind market, with the U.S. Bureau of Ocean Energy Management preparing multiple sales through 2025 and targeting 15 GW of floating capacity by 2035. The federal "Floating Offshore Wind Shot" couples these leases with R&D aimed at 70% cost cuts. In Asia-Pacific, South Korea's 1.8 GW tender and Japan's entry into the U.S. cost-reduction initiative underscore how bilateral partnerships are building a 244 GW global pipeline. Developers see these awards as stepping-stones from demonstration to multi-GW arrays, prompting early investments in port upgrades, cable factories, and installation vessels. Therefore, policy continuity across the Pacific Rim is locking in bankable revenue streams while pushing the floating offshore wind market closer to gigawatt-scale annual additions.

Rapid Turbine Upsizing to 15-20 MW Class Reducing LCOE

Moving from a 6-10 MW baseline to 15-20 MW turbines cuts per-megawatt foundation counts by up to 40%, directly lowering steel and mooring use. Research on Spanish Atlantic sites finds that 15 MW machines can drive LCOE to 100 EUR/MWh in favorable conditions. Manufacturers such as Siemens Gamesa and Vestas have accelerated prototyping schedules to secure early-mover advantage, while port owners lengthen quays and reinforce cradle structures to handle 120-m blades. The upsizing wave also reshuffles vessel demand: only a handful of next-generation WTIVs can install nacelles weighing over 1,200 t, creating new charter-rate spikes that force developers to lock in capacity years ahead. Overall, turbine scale-up is pivotal to meeting national cost-reduction targets and sustaining the blistering growth of the floating offshore wind market.

WTIV & FIV Vessel Shortage Driving Day Rates Above USD 450k

Only 10 vessels worldwide can handle turbines above 14 MW, and fewer still can lift 3-column Semi-Submersible hull sections. Day rates have already breached USD 450,000, about double 2022 levels, and order books show a construction gap extending into 2028. Asia-Pacific faces extra hurdles from cabotage rules restricting foreign hulls, meaning Japanese and Korean projects must either build domestic WTIVs or absorb costly mobilization voyages. Developers now embed vessel-availability clauses into Power Purchase Agreements, delaying Final Investment Decisions until tonnage slots are secured. This bottleneck risks trimming close-in floating offshore wind market installations unless capital flows into specialized shipyards accelerate.

Other drivers and restraints analyzed in the detailed report include:

Oil & Gas Platform Conversions Unlocking Gulf of Mexico Supply Chain / EU & UK CfD Reform Boosting Bankability / High-Voltage Dynamic Cable Failures in 50-100 m Depth Pilots /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Transitional zones between 30 m and 60 m accounted for 55% of 2024 installations, equating to a floating offshore wind market size of roughly 131 MW. These locations reuse portions of fixed-bottom supply chains, allowing developers to validate moorings, SCADA, and O&M strategies at modest cost. The segment's popularity is evident in Scotland's Kincardine and France's Mediterranean demonstrators, which collectively logged availability above 92% in 2024. Yet the deep-water segment (above 60 m) is scaling fast, lifted by stronger wind profiles that raise annual energy output by up to 25 % versus transitional sites. As turbine ratings pass 15 MW, deeper waters also reduce visual-impact opposition, a factor especially potent in tourism-heavy coastlines.

Deep-water projects are forecast to post an 88% CAGR, lifting their floating offshore wind market share to just over 40% by 2030. Norway's Utsira-Nord and California's Morro Bay zones illustrate how contiguous 1-GW blocks streamline array layouts and enable shared export corridors. Oil-and-gas majors bring subsea expertise that mitigates met-ocean risks, while classification societies

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have codified design fatigue factors exceeding 25 years. The shallow (<30 m) category remains confined to R&D prototypes where seabed conditions or ecological constraints make fixed monopiles unviable. Over time, increasing confidence in dynamic cable performance and floater structural redundancy is expected to tilt investment decisively toward water depths beyond 100 m, reinforcing the deep-water pathway for the floating offshore wind industry.

Semi-Submersible hulls dominated with 57% share of the floating offshore wind market in 2024, buoyed by designs such as WindFloat and VolturnUS that can be fabricated in modular sections and launched via existing docks. Their shallow draft facilitates tow-out operations without extensive dredging, a key advantage for shipyard-constrained nations. Mooring spreads use standard chain and polyester rope, minimizing bespoke hardware. The approach reliably delivers stability with pitch motions below 5°, ensuring drivetrain loads stay within warranty envelopes for 6-10 MW turbines. Developers value the platform's adaptability, enabling deployment from Norwegian fjords to the Canary Islands.

Spar-Buoy concepts, although accounting for 31% of 2024 capacity, are on an 84% CAGR trajectory as material usage per MW drops by up to 15% compared with Semi-Subs. Hywind Tampen's 107-m-long columns verified operational uptimes of 97% under North Sea squalls. Future variants plan slip-forming techniques that lower fabrication man-hours, while hybrid concrete-steel spars promise further capex savings. Tension-Leg Platforms offer heave suppression traits attractive for turbine nacelle heights approaching 180 m, but anchor-pile precision raises costs. Barge and hybrid formats remain niche, yet Japan's 3 MW Hibiki-nada plant shows how calm-sea locales can host low-freeboard hulls. Competition among hull types will continue until mass production clarifies the most bankable option, though Semi-Subs currently act as the reference design for lenders appraising floating offshore wind market risk.

The Floating Offshore Wind Market Report is Segmented by Water Depth (Shallow, Transitional and Deep), Floating Platform Type (Semi-Submersible, Spar-Buoy, and Others), Turbine Capacity Rating (Below 5 MW, 5 To 10 MW, and Others), Application Stage (Pre-Commercial Pilot, Commercial Utility-Scale, and Hybrid Wind-To-X), and by Geography (North America, Europe, Asia-Pacific, South America, and Middle East and Africa).

Geography Analysis

Europe maintained a commanding 92% share of global deployments in 2024, with a floating offshore wind market size close to 220 MW. Mature engineering clusters in Norway, Scotland, and Portugal underpin this lead, while the UK's 50 GW total offshore wind ambition?5 GW of which must be floating by 2030?anchors forward pipelines. State-backed grants like the GBP 160 million Floating Offshore Wind Manufacturing Investment Scheme funnel capex toward blade, tower, and mooring plants, shortening delivery times. Norway's Hywind Tampen has already demonstrated concrete CO₂ savings by electrifying petroleum platforms, solidifying government and public buy-in. France is following with Mediterranean tenders that favor local fabrication yards in Fos-sur-Mer and Port-la-Nouvelle, expanding regional industrial footprints.

Asia-Pacific is the fastest-growing theatre, registering a 156% CAGR as island nations seek deeper-water options where continental shelf widths are minimal. Japan's target of 5.7 GW by fiscal 2030 and 45 GW by 2040 relies heavily on floating foundations; its seabed surveys identify 424 GW of theoretical resource above 10 m/s wind speeds. South Korea's 1.8 GW procurement round near Ulsan promises to ignite a specialized supply base encompassing chains, suction anchors, and heavy-lift barges. Taiwan positions itself as a non-China alternative for blades and nacelles, leveraging tax incentives inside its Port of Taichung free-trade zone. China itself dominates fixed-bottom additions, but provincial authorities from Guangdong to Zhejiang are cataloguing floating wind corridors exceeding 80 m depths to diversify coastal load centers.

North America ramps up under the Biden-Harris Administration's 30 GW offshore wind and 15 GW floating targets. California's twin lease zones at Morro Bay and Humboldt could host enough capacity to power 5.5 million households, but Endangered Species Act safeguards for the North Atlantic right whale prolong permitting cycles along the broader Pacific Coast. The Gulf of Mexico's milder

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sea states and dense brownfield infrastructure make it an attractive early-mover candidate, with oil majors repurposing jack-up rigs as temporary welding stations. Canada monitors the sector's advance yet waits for turbine icing studies before setting national quotas, while Mexico explores policy incentives to couple floating wind with existing gas-fired peakers on the Baja Peninsula. Collectively, North American projects account for more than 40 GW of auctioned potential, a base that will materially widen the floating offshore wind market after 2027.

List of Companies Covered in this Report:

Siemens Gamesa Renewable Energy SA / Vestas Wind Systems A/S / GE Vernova (GE Renewable Energy) / BW Ideol AS / Equinor ASA / Orsted A/S / Principle Power Inc. / Aker Solutions ASA / Hexicon AB / TotalEnergies SE / Shell plc / Ocean Winds (EDPR/ENGIE) / Copenhagen Infrastructure Partners / RWE AG / Marubeni Corporation / MingYang Smart Energy / Goldwind Science & Technology / Gazelle Wind Power Ltd. /

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Table of Contents:

- 1 Introduction
 - 1.1 Study Assumptions & Market Definition
 - 1.2 Scope of the Study
- 2 Research Methodology
- 3 Executive Summary
- 4 Market Landscape
 - 4.1 Market Overview
 - 4.2 Market Drivers
 - 4.2.1 Growing Lease Awards in U.S. & APAC Deep-Water Zones
 - 4.2.2 Rapid Turbine Upsizing to 15-20 MW Class Reducing LCOE
 - 4.2.3 Oil & Gas Platform Conversions Unlocking Gulf of Mexico Supply Chain
 - 4.2.4 EU & UK CfD Reform Boosting Bankability
 - 4.2.5 National Hydrogen Roadmaps Creating Co-location Demand
 - 4.2.6 Asian Cable-Vessel Build-out Shortening Installation Schedules
 - 4.3 Market Restraints
 - 4.3.1 WTIV & FIV Vessel Shortage Driving Day-rates > US\$450k
 - 4.3.2 High-Voltage Dynamic Cable Failures in 50-100 m Depth Pilots
 - 4.3.3 California ESA Right-Whale Constraints Slowing BOEM Permits
 - 4.3.4 Spot Steel Price Volatility (> US\$950/t) Disrupting Floater Yards
 - 4.4 Supply-Chain Analysis
 - 4.5 Regulatory & Technological Outlook
 - 4.6 Key Projects Information
 - 4.6.1 Major Existing Projects
 - 4.6.2 Upcoming Projects
 - 4.7 Recent Trends & Developments

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4.8 Porter's Five Forces

4.8.1 Bargaining Power of Suppliers

4.8.2 Bargaining Power of Buyers

4.8.3 Threat of New Entrants

4.8.4 Threat of Substitutes

4.8.5 Competitive Rivalry

4.9 Investment Analysis

5 Market Size & Growth Forecasts

5.1 By Water Depth

5.1.1 Shallow (Below 30 m)

5.1.2 Transitional (30 to 60 m)

5.1.3 Deep (Above 60 m)

5.2 By Floating Platform Type

5.2.1 Semi-Submersible

5.2.2 Spar-Buoy

5.2.3 Tension-Leg Platform (TLP)

5.2.4 Barge and Hybrid Concepts

5.3 By Turbine Capacity Rating

5.3.1 Below 5 MW

5.3.2 5 to 10 MW

5.3.3 11 to 15 MW

5.3.4 Above 15 MW

5.4 By Application Stage

5.4.1 Pre-Commercial Pilot

5.4.2 Commercial Utility-Scale

5.4.3 Hybrid Wind-to-X (Hydrogen, Desalination)

5.5 By Geography

5.5.1 North America

5.5.1.1 United States

5.5.1.2 Rest of North America

5.5.2 Europe

5.5.2.1 France

5.5.2.2 United Kingdom

5.5.2.3 Spain

5.5.2.4 Nordic Countries

5.5.2.5 Italy

5.5.2.6 Rest of Europe

5.5.3 Asia-Pacific

5.5.3.1 China

5.5.3.2 Japan

5.5.3.3 South Korea

5.5.3.4 Rest of Asia-Pacific

5.5.4 South America

5.5.4.1 Brazil

5.5.4.2 Argentina

5.5.4.3 Rest of South America

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5.5.5 Middle East and Africa

5.5.5.1 United Arab Emirates

5.5.5.2 Saudi Arabia

5.5.5.3 South Africa

5.5.5.4 Rest of Middle East and Africa

6 Competitive Landscape

6.1 Market Concentration

6.2 Strategic Moves (M&A, Partnerships, PPAs)

6.3 Market Share Analysis (Market Rank/Share for key companies)

6.4 Company Profiles (includes Global level Overview, Market level overview, Core Segments, Financials as available, Strategic Information, Products & Services, and Recent Developments)

6.4.1 Siemens Gamesa Renewable Energy SA

6.4.2 Vestas Wind Systems A/S

6.4.3 GE Vernova (GE Renewable Energy)

6.4.4 BW Ideol AS

6.4.5 Equinor ASA

6.4.6 Orsted A/S

6.4.7 Principle Power Inc.

6.4.8 Aker Solutions ASA

6.4.9 Hexicon AB

6.4.10 TotalEnergies SE

6.4.11 Shell plc

6.4.12 Ocean Winds (EDPR/ENGIE)

6.4.13 Copenhagen Infrastructure Partners

6.4.14 RWE AG

6.4.15 Marubeni Corporation

6.4.16 MingYang Smart Energy

6.4.17 Goldwind Science & Technology

6.4.18 Gazelle Wind Power Ltd.

7 Market Opportunities & Future Outlook

7.1 White-space & Unmet-Need Assessment

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