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North America Wind Turbine Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025-2034

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Abstracts

North America Wind Turbine Market was valued at USD 25.1 billion in 2024 and is projected to grow at a CAGR of 5% from 2025 to 2034. Continuous technological advancements have played a key role in improving efficiency, reliability, and performance. Innovations in materials, manufacturing techniques, aerodynamics, and digitalization have enabled the development of larger and more efficient turbines, ultimately driving down energy costs.

The increasing transition toward electrification and the rising need to reduce dependence on conventional energy sources are expected to propel clean electricity generation, creating significant market expansion opportunities. The growing cost of traditional power generation, along with the increasing demand for enhanced energy security, has fueled investments in wind power infrastructure. Favorable government policies promoting cost-effective and advanced wind power solutions further strengthen the industry landscape. Wind energy has become one of the fastest-growing renewable electricity sources, supporting sustainability goals and climate change mitigation.

The expansion of grid-connected wind turbine installations and their growing cost competitiveness compared to conventional power sources such as coal and natural gas will support market penetration. The rising wind power capacity across North America and ambitious renewable energy targets are key factors driving market growth. The horizontal-axis wind turbine segment is expected to witness over 4% CAGR through 2034, primarily due to its increasing adoption in large-scale onshore and offshore wind projects. Continuous technological advancements have enhanced efficiency, reliability, and performance, making horizontal-axis wind turbines the preferred choice for utility-scale applications. These turbines incorporate variable speed generators, intelligent

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control systems, and longer blades, allowing them to capture more wind energy while operating efficiently under varying conditions. Their capability to optimize power generation by adjusting blade pitch makes them suitable for high-wind locations, further increasing their deployment across commercial and utility projects.

Vertical-axis wind turbines are also gaining traction due to continuous advancements in design and an increasing shift toward replacing conventional technologies with more efficient solutions. Their advantages, such as low starting wind speeds, simplified maintenance, operational flexibility, and lower costs compared to horizontal-axis wind turbines, contribute to their growing adoption. The onshore wind turbine segment accounted for over 94.6% of the North America market share in 2024. The availability of vast wind resources across regions such as the Great Plains, the Midwest, and coastal areas makes onshore wind power one of the most cost-effective electricity generation methods. The declining Levelized Cost of Electricity (LCOE) has further boosted the economic feasibility of onshore wind projects, driving adoption across the region.

The offshore wind turbine market is set to grow at over 9% CAGR through 2034, driven by improved efficiency, reduced environmental impact, and increased space availability. Companies are focusing on developing advanced solutions tailored to extreme environmental conditions, supported by ongoing research and development initiatives.

The U.S. wind turbine market recorded USD 22.4 billion in 2024, reflecting strong government support through policies, tax incentives, and investment opportunities. Technological advancements continue to enhance cost efficiency and energy output, further encouraging the adoption of wind power solutions across the country.

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