

# Air-Borne Wind Turbine Market By Type (Onshore, Offshore) , By Application (Renewable Energy Generation, Water Pumping, Others) : Global Opportunity Analysis and Industry Forecast, 2024-2030

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## Abstracts

The airborne wind turbine market was valued at \$139.2 million in 2023, and is projected to reach \$268.3 million by 2030, growing at a CAGR of 9.8% from 2024 to 2030.

Airborne wind turbines represent an innovative approach to harness wind energy by accessing stronger and more reliable wind currents found at higher altitudes. Traditional wind turbines are limited by the height of their towers, while airborne wind turbines can float several hundred to thousands of meters above ground, where winds are steadier and more powerful. By operating at these altitudes, airborne wind turbines have the potential to generate more electricity with a smaller environmental footprint, as they require fewer materials and less land area than conventional wind farms.

The growth of the global airborne wind turbine market is driven by low infrastructure cost of airborne wind turbines. Airborne wind turbines eliminate the need for expensive towers and large foundations, reducing overall material costs and simplifying deployment, especially in offshore or remote locations. In addition, surge in global demand for renewable and clean energy sources drives investment and innovation in wind technologies, including airborne wind turbines. Moreover, rise in need to reduce reliance on fossil fuels and enhance energy security significantly contributes toward the market growth. To meet the goal of net zero emissions by 2050, many countries, including China, India, the U.S., and the European Union—the largest emitters—have focused on increasing the installation of wind turbines, which is anticipated to foster the market growth. Based on the 2023 study of the American Clean Power Association,

wind energy helped to curb 348 million metric tons of carbon dioxide emissions in 2023. Approximately 72,000 wind turbines are installed in the U.S., generating wind power of 151 GW. Thus, increase in installation of wind turbines acts as the key driving force of the global market. However, dependency of wind turbine on weather conditions is expected to hamper the market growth. Moreover, high initial capital required for installation of wind turbines acts as the key deterrent factor of the market. On the contrary, surge in demand for more efficient and cost-effective wind turbines is expected to intensify improvements in turbine efficiency, reliability, and overall energy output. For instance, China made a groundbreaking development with the installation of an 18-megawatt wind turbine in June 2024 off the shore of Guangdong province. The International Energy Agency (IEA) has developed Net Zero Emissions by 2050 (NZE) Scenario, which focuses on achieving approximately 7400 TWh of wind electricity generation by 2030. To achieve this level of capacity growth, substantial installation of onshore wind turbines is required along with cost reductions for offshore wind turbines. All these factors are expected to collectively offer lucrative opportunities for the expansion of the global wind turbine market during the forecast period.

The global airborne wind turbine market is segmented into type, application, and region. By type, the market is bifurcated into onshore and offshore. On the basis of application, it is classified into renewable energy generation, water pumping, and others. Region wise, the market is studied across areas such as North America, Europe, Asia-Pacific, and LAMEA.

### Key Findings

By type, the offshore segment is expected to maintain its lead position from 2024 to 2030.

On the basis of application, the power generation segment is anticipated to dominate the market during the forecast period.

Region wise, North America is projected to emerge as the most lucrative market for airborne wind turbine by 2030.

### Competition Analysis

Competitive analysis and profiles of the major players in the global airborne wind turbine market include Siemens AG, Nordex Group, ACCIONA S.A, United Power, Envision Energy, Vestas Wind Systems A/S, GE, Goldwind, Enercon GmbH, and Ampyx Power.

These major players have adopted various key development strategies such as business expansion, new product launches, and partnerships to sustain the intense competition and gain a strong foothold in the global market.

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Upcoming/New Entrant by Regions

Technology Trend Analysis

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Additional company profiles with specific to client's interest

Additional country or region analysis- market size and forecast

Criss-cross segment analysis- market size and forecast

Expanded list for Company Profiles

Historic market data

Import Export Analysis/Data

SWOT Analysis

Volume Market Size and Forecast

## Key Market Segments

### By Type

Onshore

Offshore

### By Application

Renewable Energy Generation

Water Pumping

Others

## By Region

North America

U.S.

Canada

Mexico

Europe

Germany

UK

France

Spain

Italy

Rest of Europe

Asia-Pacific

China

India

Japan

South Korea

Australia

Rest of Asia-Pacific

LAMEA

Brazil

Saudi Arabia

South Africa

Rest of LAMEA

Key Market Players

Siemens AG

Nordex Group

ACCIONA S.A

United Power

Envision Energy

Vestas Wind Systems A/S

GE

Goldwind

Enercon GmbH

Ampyx Power

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