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Wind Power Bearing Market – Global Industry Size, Share, Trends, Opportunity, and Forecast Segmented by Type (Slewing Ring Bearings and Spherical Roller Bearings), By Application (Onshore, Offshore), By Product (GBMB and BBYBGB), By Region, Competition 2018-2028

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Abstracts

Global Wind Power Bearing Market has valued at USD 6.8 Billion in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 11.85% through 2028. A wind power bearing is a type of bearing that is specifically designed for use in wind turbines. Wind turbines are large machines that convert wind energy into electrical energy. Wind power bearings are used in a variety of different locations within a wind turbine, including the main rotor shaft, the gearbox, and the generator.

Wind power bearings are typically made of high-strength steel or other materials that can withstand the harsh conditions that they operate in. Wind turbines are often located in remote areas where they are exposed to extreme weather conditions, such as high winds, cold temperatures, and dust. Wind power bearings must be able to operate reliably in these conditions for many years.

Key Market Drivers

Technological advancements in wind turbine design and manufacturing are leading to the development of larger and more efficient wind turbines. These larger and more efficient wind turbines require higher quality and more durable bearings, which is driving the growth of the wind power bearing market. Onshore and offshore wind turbines are being installed at a rapid pace around the world. This is driving the demand for wind

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power bearings, as they are essential components of wind turbines. The wind power industry is moving towards the development of larger and more efficient wind turbines. These turbines require more durable and high-performance bearings, which is driving the demand for wind power bearings. Governments around the world are providing subsidies and tax breaks to promote the installation of wind turbines. This is driving the growth of the wind power industry, which is in turn driving the demand for wind power bearings. The wind power bearing market is expected to witness significant growth in the coming years, driven by the increasing demand for renewable energy, growing investment in wind power, and technological advancements.

Key Wind Turbine Bearing Market Driver

The decreasing levelized cost of electricity from wind energy is notably driving the market growth. Wind energy has emerged as one of the cost-effective sources of new electricity generation. Technological advances such as increased hub height, which can result in higher swept areas, and a decline in the total installation costs have driven the growth of the global market. The global weighted average cost of offshore wind installations decreased by one-fifth during 2010-2018, and that of onshore wind installations decreased by more than one-third during the same period. Currently, the cost of generating onshore wind power is similar to the cost of generating power from fossil fuels in many parts of the world. The declining cost of wind turbines, decreasing operating and maintenance costs, the increasing heights of wind infrastructure, the low costs of financing, and the rising supply of turbines are contributing to a decline in the LCOE of wind power generation.

Globally, the decline in the LCOE of wind energy has made wind power a feasible option for electricity generation for utilities that are seeking to generate power from clean sources of energy. Hence, an increase in the number of wind turbine installations across the world is driving the growth of the global market. Additionally, subsidies provided by several governments are encouraging residential and commercial consumers to use small-scale wind turbines. The generation of energy from the wind is also complemented by solar and battery technologies. Therefore, such factors will drive the growth of the global market during the forecast period.

Key Market Challenges

Declining Cost of Solar PV Modules

The declining cost of solar PV modules is a major challenge impeding the market

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growth. Since the past decade, there has been a rise in the generation of power using solar PV. Solar PV has become one of the inexpensive sources of electricity generation owing to factors such as an increase in the scale of production of components and intense competition among vendors in the value chain of the global solar power market. Ongoing developments in energy storage systems are also driving the use of solar power.

The Solar Energy Technologies Office (SETO) of the US DOE launched the SunShot Initiative in 2011 to reduce the cost and increase the adoption of solar-powered electricity. For 2030 the cost of the solar PV system was reduced by 50% from that in 2020. Furthermore, subsidies and incentives such as FiTs and renewable portfolio standards provided by several governments are encouraging residential and commercial consumers to install solar PV. These factors are expected to increase the adoption of solar PV power, which is a major alternative to wind power, during the forecast period. Hence, a decline in the LCOE of solar PV across the world may hamper the growth of the global market during the forecast period.

Rise of Predictive Maintenance

Predictive maintenance is a growing trend in the wind power industry. Predictive maintenance uses data analytics to predict when wind turbine components are likely to fail, so that they can be replaced before they actually fail. This can help to reduce downtime and maintenance costs. Wind power bearing manufacturers are developing new bearings that are equipped with sensors that can collect data on bearing performance. This data can then be used to predict when the bearing is likely to fail, so that it can be replaced before it actually fails.

Increasing Focus on Sustainability

The wind power industry is increasingly focused on sustainability. This means that wind power bearing manufacturers are looking for ways to reduce the environmental impact of their products. For example, some manufacturers are developing bearings that are made from recycled materials or that are recyclable at the end of their lifespan. The global wind power bearing market is expected to grow significantly in the coming years, driven by the increasing demand for renewable energy, growing investment in wind power projects, technological advancements, and the development of new materials and bearing designs.

Key Market Trends

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Rise In Demand for Wind Turbine Bearing

The rise in demand for wind turbine bearing with increasing onshore wind power installations is an emerging trend in the market. The wind energy sector is expected to grow significantly with improved environmental policies and the expected deployment of projects, which are currently in the development phase. According to the GWEC, wind power met 10%-15% of the global electricity demand in 2021, which is further expected to increase by more than 20% by the end of 2030. Also, various nations, such as India, Brazil, Sweden, and Canada, have been adding onshore wind turbine capacity. Thus, the increasing onshore wind power installations will drive the growth of the market in focus during the forecast period.

According to the IEA, onshore wind capacity is expected to grow by 57% to 850 GW by the end of 2024, which accounts for 50%-60% of current installations. In 2020, onshore wind capacity additions reached 60 GW, owing to the development of wind farms in the US and a change in policy in China from feed-in tariffs to competitive auctions. Therefore, with the rise in onshore wind capacity installations, turbine installations will also increase proportionally. This, in turn, will propel the demand for wind turbine bearing globally and, in turn, will drive the market in focus during the forecast period. One of the trends in the wind power bearing market is the development of larger and more efficient wind turbines. These larger and more efficient wind turbines require higher quality and more durable bearings. Another trend in the wind power bearing market is the development of new materials and bearing designs. These new materials and bearing designs are aimed at improving the performance and durability of wind power bearings.

Below mentioned factors are the major trend in the Global Wind Power Bearing Market :-

Increasing demand for renewable energy: Governments around the world are setting ambitious targets for renewable energy deployment. This is driving the growth of the wind power industry, which is in turn driving the demand for wind power bearings.

Growing investment in wind power projects: The wind power industry is attracting significant investments from both public and private investors. This investment is driving the growth of the wind power market, which is in turn driving the demand for wind power bearings.

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Technological advancements: Technological advancements in wind turbine design and manufacturing are leading to the development of larger and more efficient wind turbines. These larger and more efficient wind turbines require higher quality and more durable bearings, which is driving the demand for wind power bearings.

Development of new materials and bearing designs: New materials and bearing designs are being developed to improve the performance and durability of wind power bearings. For example, some manufacturers are developing bearings made from new materials, such as ceramic and silicon nitride, which are more wear-resistant and can operate in more extreme conditions. Other manufacturers are developing new bearing designs, such as tapered roller bearings and hybrid bearings, which can support higher loads and have a longer lifespan.

Shift towards offshore wind: The offshore wind industry is growing rapidly, and this is driving the demand for wind power bearings that are specifically designed for offshore applications. Offshore wind turbines operate in more harsh conditions than onshore wind turbines, so they require bearings that are more resistant to corrosion and fatigue.

Segmental Insights

Application Insights

The onshore segment was valued at USD 5,985.57 million in 2017 and continued to grow until 2021. Technological innovations have increased the commercialization of onshore wind generation. According to the Global Wind Energy Council (GWEC), globally, 46.8 GW of onshore wind capacity was added in 2018. In addition, 75% of the new installations were in the top five countries, China, the US, Germany, India, and Brazil (in the same order). The new installations were facilitated by support mechanisms such as feed-in tariff (FiT) and production tax credit (PTC), as well as other market-based mechanisms, including tenders, auctions, and green certificates. Furthermore, favorable regulatory policies to promote onshore wind power development will augment the growth of the onshore segment of the global market during the forecast period. Thus, owing to such factors the segment is expected to grow during the forecast period.

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Regional Insights

The Asia Pacific region has established itself as the leader in the Global Wind Power Bearing Market with a significant revenue share in 2022 . APAC is estimated to contribute 61% to the growth of the global market during the forecast period. Technavio’s analysts have elaborately explained the regional trends and drivers that shape the market during the forecast period. The growth of the market in APAC is mainly because of the growing population and improved standard of living. Growing emphasis by countries on adding more renewable energy into their overall energy mix, owing to high greenhouse (GHG) emissions caused by fossil fuels, is leading to a rise in the adoption of clean energy sources such as wind energy.

This has resulted in many new wind installations in the region, which have helped in catering to the growing energy needs. Increasing GHG emissions in China and India have compelled these countries to shift their focus to renewables such as wind and solar photovoltaic (PV) for power generation and reduce their dependence on fossil fuels for power generation. Initiatives taken by many countries in the region and the pace of their execution indicate an increased readiness to replace fossil fuels with renewables. Governments of these countries are also promoting the large-scale installation of renewables to address the issue of environmental degradation and pollution caused by burning fossil fuels. Both countries have an enormous power consumption base, and the power demand is continuously rising owing to the improved standard of living. These benefits will drive the growth of the regional market during the forecast period.

Key Market Players

SKF Group

Schaeffler Group

Timken Company

NSK Ltd

NTN Corporation

JTEKT Corporation

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Regal Beloit Corporation

ZWZ Bearings

Wafangdian Bearing Group Corporation (ZWZ)

RBC Bearings Incorporated

Report Scope:

In this report, the Global Wind Power Bearing Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Global Wind Power Bearing Market, By Type:

Slewing Ring Bearings

Spherical Roller Bearings

Global Wind Power Bearing Market, By Application :

Onshore

Offshore

Global Wind Power Bearing Market, By Product:

GBMB

BBYBGB

Global Wind Power Bearing Market, By Region:

North America

United States

Canada

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- Mexico

Asia-Pacific

- China
- India
- Japan
- South Korea
- Indonesia

Europe

- Germany
- United Kingdom
- France
- Russia
- Spain

South America

- Brazil
- Argentina

Middle East & Africa

- Saudi Arabia
- South Africa

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Egypt

UAE

Israel

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Wind Power Bearing Market.

Available Customizations:

Global Wind Power Bearing Market report 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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