

Turbines Market Assessment, By Type [Steam Turbine, Gas Turbine, Hydro Turbine, Wind Turbine], By Power Range [less Than 1 MW, 1 MW to 50 MW, 51 MW to 200 MW, 201 MW to 500 MW, Above 500 MW], By End-user Industry [Power Generation, Oil and Gas, Chemical and Fertilizers, Others], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Global turbines market size was valued at USD 99.7 billion in 2023, which is expected to reach USD 138.99 billion in 2031, with a CAGR of 4.24% for the forecasted period between 2024 and 2031.

Turbines offer efficient energy conversion, crucial in power generation, aerospace, and renewables like wind and hydropower. Turbines are pivotal in addressing energy needs and reducing the overall environmental impact, connecting them to diverse sectors and the evolving energy landscape. The widespread use of turbines is propelled by the increasing energy demand, advancements in turbine technology, and a global shift towards sustainable energy sources. The factors driving the market growth include the rise in investments in power infrastructure, a prominent focus on cleaner energy solutions, and the continuously expanding aerospace industry.

Investments in turbines are on the rise due to several factors. Growing energy demand and a shift towards sustainable practices prompt increased funding in turbine technologies. Governments worldwide are incentivizing clean energy and fostering investment in wind and hydropower turbines. Moreover, advancements in turbine efficiency and reliability contribute to an improvement in the confidence of the investor. Additionally, the expanding aerospace and marine industries are fueling the demand for



gas turbines. These combined factors drive a surge in investments, positioning turbines as key components in diverse sectors.

Emergence of Wind Turbines is Proliferating the Market Growth

The emergence of wind turbines is revolutionizing the power generation industry, thereby driving market growth significantly. The transformation stems from several factors, including the declining cost of wind power, intensifying competition among wind turbine manufacturers, growing environmental concerns prompting a shift towards renewable energy sources, and technological advancements that enhance turbine efficiency and output. As a result of these driving forces, wind turbines are becoming increasingly cost-efficient with traditional fossil fuel-based power generation methods, making them a more attractive option for both energy producers and consumers.

In May 2023, GE Vernova announced its plan to invest USD 50 million in its Schenectady, New York facility to capitalize on the flourishing wind energy market in North America. This investment would enable the production of critical components for GE Vernova's 6.1 MW wind turbine, specifically the machine head, hub, and drive train.

Prevalence of Gas Turbines are Amplifying the Market Growth

The widespread adoption of gas turbines is fueling significant growth in the global turbine market. This expansion is driven by a plethora of factors, including the increasing demand for efficient and reliable power generation solutions, stringent environmental regulations favoring natural gas over conventional fossil fuels, and technological advancements that enhance turbine performance and reduce emissions. As a result, gas turbines are becoming increasingly prevalent in various power generation applications, including combined cycle power plants, industrial power generation systems, and oil and gas processing facilities.

In October 2023, Mitsubishi Power Americas collaborated with the Grand River Dam Authority to install the first M501JAC gas turbine in the United States for peak applications. The advanced-class turbine is expected to replace the last remaining coalfired unit at the Grand River Energy Center, enhancing operational flexibility and grid stability.

Turbines in Oil and Gas Industries are Expected to Cater to Extensive Opportunities

Turbines play a pivotal role in the oil and gas industries, driving various processes and

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operations. Growing demand for energy is driving the exploration and production of oil and gas, consequently increasing the need for turbines to power these processes. Also, the implementation of strict environmental regulations has stimulated the development of more efficient and cleaner turbine technologies, making them a top choice for oil and gas companies.

In October 2023, Oil and Natural Gas Corporation (ONGC) hosted a roadshow at Hotel Le Royal Meridien in Abu Dhabi to seek partnerships with global oil and gas companies for offshore oil and gas projects in India. The roadshow would provide valuable insights into business opportunities within India's offshore oil and gas infrastructure sector. ONGC, aligning with the changing energy landscape, has outlined its ambitious Energy Strategy 2040. This plan emphasizes ONGC's commitment to double oil and gas production.

Asia-Pacific Leads the Turbine Market

Asia-Pacific led the global turbines market due to several factors, including industrialization and infrastructure development. These factors led to a surge in electricity demand, which in turn drove the demand for new power plants. Furthermore, government policies in many Asia-Pacific countries, like China and India, promoted the use of renewable energy sources, such as wind and solar power that utilize turbines. As a result of these factors, Asia-Pacific became the world's largest turbine market, accounting for more than 50% of global turbine sales.

In November 2023, Goldwind achieved a remarkable feat by installing its massive 16 MW offshore wind turbine in a record-breaking 24 hours.

Government Initiatives Impact the Market Size

Government initiatives have had a significant impact on the global turbines market. These initiatives have helped promote turbines' use by providing financial incentives, investing in research and development, and streamlining regulatory processes. As a result, the global turbines market has grown rapidly in recent years and is expected to continue its growth over the years to come.

In May 2022, GE Steam Power secured a USD 165 million contract with BHEL to provide three nuclear steam turbines for NPCIL's Phase 1 domestic nuclear program, which is being built in Gorakhpur, Haryana (units 1 to 4 (GHAVP)) and Kaiga, Karnataka (Kaiga-5&6). The program involves the construction of 12 units of 700 MWe using



NPCIL's own Pressurized Heavy Water Reactors (PHWR) nuclear reactor technology. It would provide India with 8.4GW of carbon-free electricity, to power over 14 million homes.

Impact of COVID-19

The global turbines market was relatively stable before the COVID-19 pandemic. Demand for turbines was driven by the need for reliable and efficient power generation, as well as the growing popularity of renewable energy sources. The market was supported by government policies that promoted the use of renewable energy and energy efficiency. However, the advent of the COVID-19 pandemic had a significant impact on the global turbines market. The pandemic's initial shockwave led to a decline in turbine installations in 2020, as supply chains were disrupted, and travel restrictions limited the movement of workers and equipment. However, the market is beginning to recover after the pandemic as governments are implementing stimulus measures and demand for renewable energy is rising at an extensive rate. Despite these challenges, the long-term outlook for the market remains positive, driven by the transition to renewable energy and increasing demand for efficient and reliable power sources.

Impact of Russia-Ukraine War

The ongoing Russia-Ukraine war had a significant impact on the global turbines market, disrupting supply chains, increasing energy prices, and prompting a shift towards renewable energy sources. The war led to sanctions on Russia, which is one of the world's largest exporters of natural gas, causing energy prices to soar and forcing the European countries to seek alternative energy sources.

It in turn, has created ample opportunities for the turbine market, as countries are increasingly turning to renewable energy sources such as wind and solar power to reduce their reliance on fossil fuels. Moreover, the war has disrupted supply chains for turbines and other energy equipment, which has led to delays in project development and increased costs. Despite these challenges, the long-term outlook for the global turbines market remain positive, as the transition to renewable energy is expected to continue in the years to come.

Key Players Landscape and Outlook

The turbine industry is experiencing a surge in innovation as major players pour resources into wind, steam, and gas turbine development. These companies are



actively pursuing acquisitions, partnerships, and collaborations to expand their market presence and drive profitability. Moreover, this dynamic environment is fostering rapid advancements and accelerating the overall growth of the turbine industry.

In September 2023, through a minority stake investment in WindESCo, ABB gained access to the company's cutting-edge asset performance monitoring software and wake optimization solution. This partnership will enable ABB to offer a complete wind energy solution to its customers, encompassing both hardware and software components.

In July 2023, BHEL and GE Vernova extended their long-standing partnership to manufacture heavy-duty gas turbines. The collaboration would enhance BHEL's ability to provide advanced gas turbine technology and meet the power plant demands of its customers.



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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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