

# Gas Turbine Market to Reach \$25.4 Billion by 2030 with Focus on Low-Carbon Solutions

*Rising energy demand, tech advances, and shift to efficient gas-fired power are driving global growth in the gas turbine market.*

WILMINGTON, DE, UNITED STATES, June 19, 2025 /EINPresswire.com/ --

According to a new report published by Allied Market Research, titled, "Gas Turbine Market: Opportunity Analysis and Industry Forecast, 2021–2030," the global gas turbine market was valued at \$18.5 billion in 2020, and is

projected to reach \$25.4 billion by 2030, growing at a CAGR of 3.3% from 2021 to 2030.



The gas turbine market plays a vital role in power generation and mechanical drive applications across various industries. Gas turbines are internal combustion engines that use air

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Rising demand for cleaner energy and distributed power generation is driving the gas turbine market, as industries shift toward efficient, low-emission technologies.”

*Allied Market Research*

compression and fuel combustion to generate mechanical energy, which can then be converted into electrical power. They are widely used in utilities, oil and gas, aviation, and industrial sectors due to their ability to deliver high efficiency, low emissions, and quick start-up capabilities. Increasing demand for reliable and cleaner energy, along with aging power infrastructure, is driving the adoption of gas turbines globally.

Technological advancements in turbine design, combined with supportive government policies for cleaner energy,

are further fueling market growth. Combined cycle gas turbine systems, which integrate both gas and steam turbines, offer superior efficiency and are increasingly being deployed in modern power plants. In addition, rapid industrialization, especially in developing economies, and growing investments in distributed energy systems continue to create strong growth opportunities for the gas turbine market.

The demand for gas turbines has seen a substantial rise, driven by their expanding applications across power generation, oil & gas, marine, aerospace, and industrial processing sectors. Industry players are making significant investments in strategic production enhancements and business expansion efforts to unlock new commercial opportunities within these segments. Key factors propelling the gas turbine market include rapid technological advancements in the energy sector and the growing preference for distributed power generation technologies. In addition, increasing concerns over greenhouse gas emissions, coupled with stringent government regulations favoring gas-fired turbines over conventional power units, are expected to further accelerate market growth.

### Gas Turbine Market Dynamics

#### Growth Drivers:

The growing need for reliable power supply, particularly in emerging economies, is a major factor driving the gas turbine market. Many countries are investing in new power generation infrastructure to meet the rising electricity demand and to replace aging coal-based plants with cleaner alternatives. Gas turbines are increasingly favored for their lower carbon footprint and high operational flexibility, especially in regions transitioning to cleaner energy sources.

#### Technological Advancements:

Innovations in turbine efficiency, design, and materials have significantly improved the performance and durability of gas turbines. The integration of digital technologies such as AI, IoT, and predictive maintenance in turbine operations has further enhanced plant efficiency and reduced operational costs. Advanced turbines capable of running on hydrogen or mixed fuels are also being developed, contributing to the decarbonization efforts of the energy sector.

#### Restraints:

Despite their advantages, gas turbines face competition from renewable energy technologies such as wind and solar, which have gained significant traction due to declining costs and policy support. In addition, volatility in natural gas prices and environmental concerns related to greenhouse gas emissions from fossil fuels may pose challenges to market growth in certain regions.

#### Opportunities:

The growing focus on hydrogen-based power generation and hybrid systems combining renewables and gas turbines presents new avenues for market expansion. Retrofitting existing gas turbines with low-emission technologies and expansion of small and mid-size turbines for decentralized power generation also open up lucrative opportunities, particularly in remote and off-grid areas.

## Segment Overview

The [gas turbine market forecast](#) is segmented based on technology, capacity, application, and region. By technology, it is divided into open cycle and combined cycle gas turbines. In terms of capacity, the market includes turbines below 40 MW, 40–120 MW, and above 120 MW. Based on application, the market is categorized into power generation, oil & gas, industrial, and aviation. Region-wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA. Among these, the power generation segment holds a significant share due to the widespread adoption of gas turbines in thermal power plants.

## Regional Analysis

Asia-Pacific holds the largest share in the gas turbine market and is expected to maintain its dominance throughout the forecast period. The region's high demand is driven by rapid industrialization, urbanization, and government initiatives to replace coal-based power with cleaner alternatives. Countries such as China, India, and South Korea are investing heavily in natural gas infrastructure and power generation facilities. North America and Europe are also significant markets, with ongoing upgrades to aging power infrastructure and increased adoption of combined cycle systems to meet emission targets.

## Competitive Analysis

The global gas turbine market is highly competitive, with key players focusing on strategic partnerships, R&D investments, and mergers to strengthen their market position. Major companies such as General Electric (GE), Siemens Energy, Mitsubishi Power, Ansaldo Energia, and Kawasaki Heavy Industries dominate the market. These players are actively developing advanced turbines capable of operating on hydrogen and low-emission fuels to meet evolving regulatory standards and customer preferences.

In addition to product innovation, companies are also offering digital solutions and long-term service agreements to enhance operational efficiency and reliability. Emerging players in Asia and the Middle East are gradually gaining traction by offering cost-effective and region-specific solutions. The [competitive landscape](#) is expected to remain dynamic with growing emphasis on sustainability and technological innovation.

## Key findings of the study

- North America is projected to grow at the highest CAGR of 3.9% in terms of revenue.
- The combined cycle segment dominated the global gas turbine market with around 65.0% of the share in terms of revenue.
- The heavy-duty segment dominated the global gas turbine market with around 68.0% of the share in terms of revenue.
- The aero-derivative segment is projected to grow at the highest CAGR of 3.9% in terms of revenue.
- The above 300 MW segment dominated the global gas turbine market with 55.0% of the share in terms of revenue.
- The power generation segment led the global gas turbine market with 27.5% of the share in

terms of revenue.

- The aerospace segment is projected to grow at the highest CAGR of 4.1% in terms of revenue.

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