

Steam Turbine Market Growth Boosted by Energy Demand, Industrial Expansion & Technology

Steam Turbine Market to Hit \$22.4 Billion by 2032 Amid Rising Power Generation Needs

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According to a new report by Allied Market Research, the [Steam Turbine Market](#) was valued at \$17.5 billion in 2022 and is projected to reach \$22.4

billion by 2032, growing at a CAGR of 2.6% from 2023 to 2032. This steady growth is driven by increasing energy demand, rising power generation capacity, and advancements in turbine technologies.

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Steam Turbine Market to reach \$22.4B by 2032 at 2.6% CAGR, fueled by rising power demand, industrial expansion & energy-efficient technology.”

Allied Market Research

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What is a Steam Turbine?

A steam turbine is a vital mechanical device that converts heat energy from steam into mechanical energy, which is then used to generate electricity. Heat sources such as coal, natural gas, nuclear power, or solar energy heat

water until it turns into high-pressure steam. This steam expands across turbine blades, producing rotational force that drives an electrical generator.

Steam turbines remain a cornerstone of thermal power generation, making them indispensable in industries where reliable electricity is critical.



STEAM TURBINE MARKET

OPPORTUNITIES AND FORECAST, 2023-2032

Steam turbine market is expected to reach **\$22.4 Billion** in 2032

Growing at a **CAGR of 2.6%** (2023-2032)

Report Code: A05663, www.alliedmarketresearch.com

Regional Outlook

Asia-Pacific dominated the [steam turbine market share](#) in 2022 and is projected to continue leading, growing at a CAGR of 3.1%. The region's growth is fueled by:

Expanding coal, gas, and nuclear-based power plants.

Large reserves of coal and natural gas.

Increasing industrial electricity demand, especially in India and China.

North America and Europe are witnessing slower growth due to renewable energy adoption, while developing countries remain key to market expansion.

Key Growth Drivers of the Steam Turbine Market

The expansion of the steam turbine industry is primarily driven by:

Rising Demand for Thermal Power: Growing electricity needs in developing countries are increasing reliance on coal, gas, and nuclear-based power plants.

Industrial Growth: Oil & gas, petrochemical, and heavy manufacturing sectors depend heavily on steam turbines for continuous power generation.

Regulatory Push for Cleaner Energy: Governments are promoting low-emission fuels such as natural gas and biomass, creating opportunities for modern steam turbines.

Technological Advancements: Innovations in turbine design and manufacturing improve energy efficiency and reduce operational costs.

Cogeneration in Industries: Sectors like sugar and steel are increasingly adopting cogeneration power plants, where steam turbines simultaneously generate power and process heat.

Market Challenges

Despite growth potential, the steam turbine market faces hurdles such as:

Shift Toward Renewables: Global initiatives to reduce coal dependency and expand [solar and wind energy](#) limit steam turbine adoption.

Competitive Costs of Renewables: The declining cost of solar and wind projects challenges investments in traditional power plants.

Strict Government Regulations: Policies encouraging decarbonization restrict expansion of coal-based steam power projects.

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Segmentation Insights

The steam turbine market analysis highlights several key segments:

□ By Design

Impulse Turbines: Dominated the market in 2022 and expected to grow faster during the forecast period.

Reaction Turbines: Widely used in power generation due to their high efficiency and low noise levels.

□ By End-use Industry

Power Generation: Largest segment, projected to maintain dominance, supported by rising electricity demand across Asia-Pacific.

Petrochemical & Oil & Gas: Increasing adoption of steam turbines for industrial-scale energy efficiency.

Others: Includes chemical and process industries with growing energy optimization needs.

□ By Forging Capacity

Large Forging: Leading category in 2022, used in manufacturing rotor shafts, casings, blades, and diaphragms. These components are critical for turbine durability and performance.

Ultra-Large Forging: Expected to grow as power plants scale up capacities.

Key Players in the Steam Turbine Market

The global steam turbine market is competitive, with leading companies focusing on partnerships, mergers, expansions, and technological innovations. Major players include:

General Electric (GE) Co.

Siemens AG

Toshiba Corporation

Mitsubishi Power

Elliott Group

Doosan Škoda Power

Arani Power Systems

Chola Turbo Machinery International Pvt. Ltd.

Triveni Turbines

Turbine Generator Maintenance Inc.

TURBOCAM

Notable developments include Mitsubishi Hitachi Power Systems expanding facilities in the Philippines and Elliott Group merging with Ebara International Corporation to strengthen global service networks.

Key Findings

The impulse segment is projected to grow at the highest CAGR of 2.8% from 2023 to 2032.

The power generation segment is expected to expand at 3.0% CAGR, maintaining dominance throughout the forecast.

Asia-Pacific continues to lead, with steady investment in coal, gas, and nuclear-based plants.

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Conclusion

The Steam Turbine Market is poised for steady growth, reaching \$22.4 billion by 2032, fueled by rising energy demand, industrial applications, and technological advancements. While renewable energy challenges its expansion, steam turbines remain critical in bridging the energy demand-supply gap, especially in developing economies.

As the world balances between energy security and sustainability, steam turbines will continue

playing a vital role in power generation, industrial growth, and cogeneration systems, ensuring reliable electricity supply for decades to come.

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