

# Power Plant Boiler Market to Hit \$31.1 Billion by 2031, Growing at 5.1% CAGR

*Global Power Plant Boiler Market Set for Growth Driven by Rising Energy Demand*

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The [power plant boiler market](#) is witnessing steady growth as global electricity demand surges due to population growth, rapid urbanization, and industrial development. According to a new report by Allied Market Research, the market was valued at \$19.0 billion in 2021 and is expected to reach \$31.1 billion by 2031, growing at a CAGR of 5.1% from 2022 to 2031.



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Power plant boiler market to hit \$31.1B by 2031, fueled by energy demand, infrastructure growth, and transition to efficient supercritical tech.”

*Allied Market Research*

Power plant boilers are essential components in thermal power plants, generating steam at high pressure and temperature to drive [turbines](#) that produce electricity. As nations aim to balance rising energy needs with sustainability goals, the industry is adapting with efficient, environmentally friendly technologies.

□ Key Growth Drivers

Several factors are fueling the expansion of the power plant boiler market size:

**Rising global energy demand:** Developing economies such as India and China are experiencing rapid industrialization, significantly boosting electricity consumption.

**Replacement of aging infrastructure:** Many existing power plants require modernization, creating opportunities for advanced and efficient boiler installations.

Government investments: Increased spending on energy infrastructure to enhance energy security and ensure reliable supply is driving demand.

Sustainability concerns: Modern power plant boilers are being designed to reduce greenhouse gas emissions and improve overall efficiency.

These factors are opening significant market opportunities for manufacturers worldwide.

## □ Market Challenges

Despite its growth potential, the market faces challenges:

Shift to renewable energy sources such as solar and wind, reducing reliance on fossil-fuel-based power generation.

High capital costs of advanced boiler systems.

Stringent emission standards imposed by governments worldwide.

Volatility in fuel prices impacting long-term planning.

Competition from alternative energy technologies.

However, ongoing innovation, including the adoption of digital monitoring systems and advanced materials, is helping the industry overcome these hurdles.

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## □ Market Segmentation Insights

### By Fuel Type

Coal-fired boilers dominated in 2021, accounting for more than half of global revenue.

Gas-fired and oil-fired boilers continue to grow as cleaner alternatives to coal.

### By Type

Pulverized boilers held the largest market share in 2021 and remain widely used in large-scale power generation.

Circulating fluidized boilers are gaining attention due to fuel flexibility and lower emissions.

### By Technology

Supercritical technology led the market with over 60% share in 2021.

Ultra-supercritical technology is expected to grow rapidly due to higher efficiency and reduced environmental impact.

### By Capacity

Less than 400 MW segment accounted for around two-fifths of the market in 2021.

400–800 MW and above 800 MW segments are projected to expand as large-scale plants come online.

### By Region

Asia-Pacific dominated the market in 2021 and is projected to grow at a CAGR of 5.4% during the forecast period.

Strong demand for electricity, rapid urbanization, and large-scale infrastructure development in China, India, and Southeast Asia are driving growth.

### □ Impact of COVID-19

The pandemic temporarily disrupted the [power plant boiler industry](#) through:

Decline in energy demand during lockdowns.

Supply chain disruptions delaying production.

Labor shortages affecting manufacturing and construction.

Project delays and cancellations.

However, post-pandemic recovery has been strong, with growth supported by:

Rising energy demand as economies rebound.

Greater focus on sustainability and emission reduction.

Adoption of digital technologies to improve operational efficiency.

## □ Competitive Landscape

Leading players in the power plant boiler market share include:

General Electric (GE)

Siemens AG

Babcock & Wilcox Enterprises, Inc.

Mitsubishi Hitachi Power Systems, Ltd.

Doosan Heavy Industries & Construction Co., Ltd.

Bharat Heavy Electricals Limited (BHEL)

Alstom SA

Harbin Electric Corporation

Dongfang Electric Corporation Limited

Kawasaki Heavy Industries, Ltd.

These companies are focusing on innovation, partnerships, and modernization projects to strengthen their positions in the global market.

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## □ Conclusion

The power plant boiler market is set for sustained growth, driven by increasing electricity demand, infrastructure development, and modernization of existing plants. While renewable energy poses competition, the continued reliance on thermal power generation, especially in developing nations, ensures robust demand.

With Asia-Pacific leading the charge, and global players advancing efficiency through supercritical and ultra-supercritical technologies, the industry is positioned to play a pivotal role in the world's transition toward a more sustainable and efficient energy future.

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Pawan Kumar, the CEO of Allied Market Research, is leading the organization toward providing high-quality data and insights. We are in professional corporate relations with various companies and this helps us in digging out market data that helps us generate accurate research data tables and confirms utmost accuracy in our market forecasting. Each and every data presented in the reports published by us is extracted through primary interviews with top officials from leading companies of domain concerned. Our secondary data procurement methodology includes deep online and offline research and discussion with knowledgeable professionals and analysts in the industry.

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