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Power Generation Equipment Global Market Insights 2025, Analysis and Forecast to 2030, by Market Participants, Regions, Technology, Application, Product Type

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Abstracts

Power Generation Equipment Market Summary

Introduction

Power generation equipment encompasses a diverse array of technologies designed to produce electricity from sources like fossil fuels, renewables, and nuclear energy, serving industrial, commercial, and residential needs. This industry is defined by its critical role in global energy supply, offering solutions ranging from large-scale standby generators to portable units for emergencies or remote locations. Key characteristics include technological sophistication, reliability, and adaptability to shifting energy demands, driven by trends such as decarbonization, digitalization, and electrification. The market thrives on the need for resilient power infrastructure, advancements in turbine efficiency, and the global push toward sustainable energy systems.

Market Size and Growth Forecast

The global power generation equipment market was valued at USD 66 billion to USD 76 billion in 2024, with an estimated compound annual growth rate (CAGR) of 4.5% to 6.5% from 2025 to 2030. This growth reflects increasing electricity demand, renewable energy integration, and infrastructure upgrades.

Regional Analysis

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North America exhibits a growth rate of 4-6%, with the United States leading due to its advanced industrial base and renewable energy adoption; trends focus on grid reliability and clean energy transitions.

Europe grows at 4.5-6.5%, with Germany and the UK driving demand through decarbonization efforts; trends emphasize energy efficiency and regulatory compliance.

Asia Pacific sees a growth rate of 5-7%, led by China and India's rapid industrialization and urbanization; trends highlight scalable, cost-effective solutions.

The Rest of the World experiences a growth rate of 4-6%, with Brazil and South Africa advancing through infrastructure investments; trends focus on expanding energy access.

Application Analysis

Industrial applications grow at 5-7%, driven by manufacturing and heavy industry requirements; trends favor high-capacity, reliable systems to support continuous operations.

Commercial applications grow at 4.5-6.5%, powering offices, retail, and service sectors; trends emphasize energy-efficient solutions for cost savings.

Residential applications grow at 4-6%, meeting household power needs; trends focus on portable and backup solutions for reliability.

Type Analysis

Standby Equipment grows at 4.5-6.5%, essential for uninterrupted power in critical settings like hospitals and data centers; trends highlight automation and durability for long-term use.

Portable Equipment grows at 5-7%, valued for flexibility in emergencies and remote areas; trends focus on lightweight, efficient designs for easy deployment.

Key Market Players

Mitsubishi Generator, headquartered in Tokyo, Japan, is a prominent player in the power generation sector, specializing in high-efficiency generators and turbines tailored

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for industrial and utility applications; its robust engineering solutions cater to global markets, emphasizing reliability and advanced technology integration.

Siemens Energy, based in Munich, Germany, is a global leader offering a comprehensive portfolio of power generation systems, including gas turbines, steam turbines, and renewable energy solutions; it excels in sustainable technologies, driving the energy transition with innovative equipment designs.

Caterpillar, from Deerfield, Illinois, USA, is renowned for its durable generators and diesel engines, widely utilized in construction, mining, and industrial sectors; its equipment is designed for rugged environments, ensuring consistent power delivery worldwide.

Generac, located in Waukesha, Wisconsin, USA, focuses on backup power solutions for residential and commercial markets; it is known for pioneering portable and standby generators, integrating smart technology to enhance user experience and reliability.

Cummins, based in Columbus, Indiana, USA, delivers reliable power systems, including diesel and gas generators, for industrial, commercial, and residential use; its extensive global service network ensures robust support and maintenance for diverse applications.

GE Vernova, headquartered in Cambridge, Massachusetts, USA, offers advanced turbines and generators, leading the shift toward cleaner energy; its cutting-edge technologies support large-scale power projects and renewable integration worldwide.

Doosan Enerbility, from Seoul, South Korea, specializes in heavy-duty power equipment like gas turbines and steam generators; it serves industrial and utility sectors, focusing on efficiency and durability for high-demand environments.

Rolls-Royce, based in London, UK, provides high-performance power systems, including microturbines and diesel generators; its precision engineering supports critical applications in industrial and marine sectors globally.

Shanghai Electric, from Shanghai, China, produces large-scale generators and turbines, catering to Asia’s growing energy markets; it emphasizes cost-effective, scalable solutions for utilities and industrial clients.

Dongfang Electric, headquartered in Chengdu, China, focuses on power equipment for

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industrial and renewable applications; its turbines and generators support China's energy infrastructure and export markets.

Harbin Electric, based in Harbin, China, excels in manufacturing turbines and generators for utility-scale projects; it plays a key role in powering China's industrial growth with reliable equipment.

Baker Hughes, from Houston, Texas, USA, offers power generation solutions tied to energy infrastructure, including gas turbines; it serves oil, gas, and industrial clients with a focus on efficiency and innovation.

ABB, headquartered in Zurich, Switzerland, provides electrification and automation technologies for power systems; its solutions enhance generator performance and grid integration across multiple sectors.

Rehlko, formerly Kohler Energy, based in Kohler, Wisconsin, USA, delivers standby and portable generators for residential, commercial, and industrial use; its independence boosts specialization in reliable power solutions.

Fuji Electric, from Tokyo, Japan, specializes in compact, efficient power generation equipment; it serves industrial and commercial markets with a focus on energy-saving technologies.

Porter's Five Forces Analysis

The threat of new entrants is moderate, with high capital and technical barriers balanced by opportunities in niche markets like portable units.

The threat of substitutes is moderate, as renewable energy systems compete with traditional equipment but often require integration with existing infrastructure.

Buyer power is moderate, with large industrial clients able to negotiate prices, though quality and reliability remain critical factors.

Supplier power is low, with widely available components like steel and electronics reducing dependency on specific suppliers.

Competitive rivalry is high, with firms investing heavily in innovation,

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sustainability, and cost competitiveness to capture market share.

Market Opportunities and Challenges

Opportunities

The global shift to renewable energy increases demand for hybrid and efficient equipment compatible with wind and solar.

Digitalization and smart grid technologies enhance system performance and predictive maintenance capabilities.

Growing electrification in emerging markets expands the customer base for both standby and portable solutions.

Challenges

High initial costs deter adoption in cost-sensitive regions, particularly for advanced systems.

Regulatory complexities vary across regions, complicating compliance and market entry.

The transition to cleaner energy requires significant R&D investment, posing financial risks.

Merger and Acquisition News

GE Vernova completes spin-off and begins trading on the New York Stock Exchange (Date: April 2, 2024): This separation from General Electric sharpens its focus on power generation equipment, accelerating innovation in turbines and generators, likely strengthening its competitive edge.

Kohler Co. and Platinum Equity Close Transaction to Establish Kohler Energy as Independent Business (Date: May 1, 2024): Rebranded as Rehlko, this move allows greater specialization in standby and portable equipment, enhancing its agility and

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market presence in residential and commercial segments.

Growth Trend Analysis

Mitsubishi Generator’s operational commencement in 2024 bolsters industrial power capacity, supporting market expansion. BP Energy’s projections indicate a 25,000 TWh increase in total power generation by 2050, with wind and solar contributing 23,000 TWh, driving demand for versatile equipment. In a Net Zero scenario, a 40,000 TWh rise, with 11,500 TWh for green hydrogen, underscores the need for advanced systems, aligning with a 4.5-6.5% CAGR through 2030.

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