

Data Center Power Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025-2034

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Abstracts

The Global Data Center Power Market, valued at USD 14.1 billion in 2024, is projected to grow at a CAGR of 7.5% from 2025 to 2034. The increasing adoption of modular data centers is a major factor driving this growth, as these facilities offer enhanced efficiency, scalability, and flexibility. They are becoming a preferred solution to meet the rising demand for data processing and storage. Modular power systems integrate generators, power distribution units, and uninterruptible power supplies in prefabricated designs that reduce costs and energy consumption, leading to lower operational expenses and a smaller carbon footprint. As digital infrastructure expands, the need for robust and energy-efficient power solutions continues to grow.

Leading technology firms and internet companies have already embraced modular data center technologies to optimize costs, reduce energy consumption, and accelerate deployment. Compared to traditional data centers, modular facilities lower civil engineering costs and cut design, management, and turnkey contracting expenses by approximately 30%. The push toward low-latency data processing, driven by advancements in edge AI, 5G networks, and cloud computing, is further fueling demand for high-performance power solutions in data centers.

The market is segmented by application into BFSI, colocation, energy, government, healthcare, manufacturing, IT & telecom, and others. In 2024, IT & telecom accounted for 24% of the market, with the colocation segment expected to surpass USD 11 billion in revenue by 2034. Both IT and telecommunications providers are prioritizing power-efficient data centers, focusing on cooling technologies that enhance performance, reduce costs, and minimize environmental impact. As high-performance computing requirements grow, energy-efficient cooling and power systems are becoming critical for



managing power-intensive workloads.

The power market for data centers is also classified by component into solutions and services. In 2024, the solutions segment held a 63% market share, while the services sector is anticipated to expand at a CAGR of approximately 8% through 2034. The transition toward renewable energy sources, including wind and solar, is gaining momentum due to cost efficiency and environmental concerns. This shift is transforming power distribution units (PDUs) and uninterruptible power supplies (UPS), which are now incorporating advanced monitoring and management features to optimize power reliability and efficiency in data centers.

By data center type, the market is categorized into hyperscale, colocation, edge, and enterprise facilities. The colocation sector led the market with USD 5.7 billion in 2024, driven by increasing energy costs and the need for energy-efficient operations. Colocation providers are actively investing in renewable energy solutions and adopting advanced cooling methods such as liquid and AI-driven cooling to enhance efficiency and reduce operating expenses. These innovations help lower reliance on conventional air conditioning while improving the cooling management of high-density IT infrastructure.

In North America, the United States dominated the data center power sector in 2024, generating USD 3.6 billion in revenue. Growth in this region is propelled by technology giants investing in efficient power infrastructure to support expanding data center operations. The rising adoption of cloud computing services by enterprises of all sizes further fuels the demand for advanced power solutions. With continuous advancements in digital infrastructure, efficient and sustainable power systems will remain a priority for data center operators worldwide.



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