

Data Center Generator Market Report by Product (Diesel, Natural Gas, and Others), Capacity (Less than 1MW, 1MW-2MW, Greater than 2MW), Tier (Tier I and II, Tier III, Tier IV), and Region 2024-2032

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Report description:

The global data center generator market size reached US\$ 7.4 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 11.8 Billion by 2032, exhibiting a growth rate (CAGR) of 5% during 2024-2032. The market is propelled by the exponential growth of cloud computing, big data, and the Internet of Things (IoT), the growing consumption of digital content, video streaming, online gaming, and remote work, and significant investments by major technology companies and service providers.

Data Center Generator Market Analysis:

- Major Market Drivers: The increasing prevalence of data-intensive applications, as well as the necessity for constant power supply in data centers, are key factors. Furthermore, leading IT companies' increased investment in data center infrastructure is driving data center generator market growth.

- [Key Market Trends: The use of hybrid power systems that combine traditional generators with renewable energy sources is a noticeable trend. Another trend is a growing desire for modular and scalable generator solutions to satisfy the unique requirements of data centers.

- Geographical Trends: North America leads the market due to its high concentration of data centers and technological developments. The Asia Pacific region is expanding rapidly, spurred by the creation of data center infrastructure in nations such as China and India.

- Competitive Landscape: As per data center generator market forecast, some of the major market players in the data center generator industry include ABB Ltd, Atlas Copco (India) Ltd., Caterpillar Inc., Cummins Inc., Deutz AG, Generac Power Systems Inc., HITEC Power Protection, Kirloskar Oil Engines Limited, Kohler Co., Langley Holdings plc, Mitsubishi Motors Corporation, Rolls-Royce plc, Yanmar Holdings Co. Ltd. among many others.

- Challenges and Opportunities: The data center generator industry report states challenges such as high initial investment and operational costs. However, opportunities arise from the growing need for energy-efficient and sustainable power solutions.

Data Center Generator Market Trends:

The rising data consumption

The rising data consumption is another key driver for the data center generator market. The proliferation of digital content, including streaming services, online gaming, social media, and remote working tools, has dramatically increased the load on data centers. To manage this growing demand, data centers are expanding their capacities and enhancing their infrastructure. Additionally, as more businesses and consumers rely on cloud-based services, the demand for large-scale data centers with robust power backup systems continues to grow. This trend is further amplified by the increasing number of smart devices and the expansion of the Internet of Things (IoT), all of which contribute to higher data generation and consumption. As per the Forbes Magazine, by the end of 2024, there are projected to be more than 207 billion devices connected to the worldwide network of tools, toys, devices and appliances that make up the Internet of Things (IoT).

Growing investments by major tech companies

The increasing investment in data center infrastructure by major IT businesses is a crucial driver of growth for the data center generator industry. Leading technological companies like Amazon, Google, Microsoft, and Facebook are constantly expanding their data center capacity to meet their ever-increasing data storage and processing demands. Major technology businesses are working on developing data centers that are not only larger in size but also more technologically advanced and sustainable. They are also implementing cutting-edge generating technologies that improve efficiency, reduce emissions, and integrate with renewable energy sources. According to Mckinsey, data centers have attracted the interest of investors, often due to the steady, utility-like cash flows and risk-adjusted yields.1 In 2021, there were 209 data center deals, with an aggregate value of more than \$48 billion, up some 40 % from 2020, when the deals were worth \$34 billion. In the first half of 2022, there were 87 deals, with an aggregate value of \$24 billion. From 2015 to 2018, private equity buyers accounted for 42 % of the deal value. Their share increased to 65 % from 2019 to 2021 and to more than 90 % in the first half of 2022.

Regulatory compliance

Regulatory compliance and industry standards are critical factors in driving the data center generator market. Governments and regulatory agencies around the world have set strict criteria for data center operations, including specific requirements for power backup systems. In 2023, UK government launched a new consultation - protecting and enhancing the security and resilience of UK data infrastructure. The government said a new set of laws would make minimum requirements mandatory to ensure data center operators are "taking appropriate steps" to boost their security and resilience. Compliance with these standards is critical for data centers to operate legally and avoid fines. For example, standards such as the Uptime Institute's Tier Classification System require data centers to have dependable power backup solutions in order to attain specific certification levels. These requirements ensure that data centers are ready to endure power disruptions and continue operations. Furthermore, environmental rules aiming at lowering carbon emissions promote the use of more efficient and environmentally friendly generator systems.

Data Center Generator Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on product capacity and tier. Breakup by Product:

Diesel
Natural Gas
Others

Diesel accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the product. This includes diesel, natural gas, and others. According to the report, diesel represented the largest segment.

Diesel generators are known for their dependability and robust performance, making them the ideal choice for critical applications such as data centers. They can provide a continuous and dependable power supply during outages, allowing data centers to operate uninterrupted. Furthermore, diesel generators have a short startup time, which is critical in emergency situations where electricity must be restored fast. This rapid response capability is critical for ensuring data center uptime. Moreover, diesel generators are designed to comply with various industry standards and regulations, which is also creating a favorable data center generator market outlook.

Breakup by Capacity: -[Less than 1MW -[]1MW-2MW -[]Greater than 2MW

Less than 1MW holds the largest share of the industry

A detailed breakup and analysis of the market based on the capacity have also been provided in the report. This includes less than 1MW, 1MW-2MW, and greater than 2MW. According to the report, less than 1MW accounted for the largest market share. As the trend toward edge computing continues, there is a growing demand for smaller, more localized data centers. As per IT Executives Council, by 2026, the market for edge computing is estimated to be valued at \$317 Billion, with its footprint expected to expand to 21.7% by 2028. These edge data centers frequently require generators with less than 1MW capacity to offer dependable backup power in geographically dispersed locations. These smaller generators' scalability and flexibility make them perfect for edge data centers, which seek to minimize latency and enhance data processing rates by bringing data closer to end users. Generators with capacities less than 1MW are often more cost-effective for small to medium-sized data centers. They require less initial investment than larger generators and have lower operational and maintenance costs, thus creating a positive data center generator industry outlook.

Breakup by Tier:

Tier I and II

-[]Tier III

-[]Tier IV

Tier I and II represents the leading market segment

The report has provided a detailed breakup and analysis of the market based on the tier. This includes tier I and II, tier III, and tier IV. According to the report, tier I and II represented the largest segment.

Tier I and II data centers are widely used in a variety of industries, including small and medium-sized businesses (SMEs), educational institutions, and local government offices. Due to their reduced initial setup and operational expenses, they are much more commonly deployed than higher-tier data centers. Hence the increasing number of small businesses is driving the need for tier I and II data centers. According to World Economic Forum, small businesses make up 90% of businesses globally, create two out of every three jobs worldwide. This extensive usage increases the overall demand for generators to assure operational continuity during power shortages. Furthermore, the continued expansion of digital infrastructure, particularly in emerging economies, has resulted in the rapid construction of Tier I and II data centers. These locations frequently begin with lower-tier data centers due to their price and ease of implementation. As digital services proliferate in these locations, the demand for dependable power backup solutions for Tier I and II data centers grows, driving up generator sales. Breakup by Region:

- North America o United States o Canada - Asia-Pacific o China o Japan

o∏India o
South Korea o[]Australia o∏Indonesia o[]Others -[Europe o

Germany o∏France o
United Kingdom o∏Italy o∏Spain o∏Russia o[]Others - Latin America o∏Brazil o∏Mexico o∏Others - Middle East and Africa

North America leads the market, accounting for the largest data center generator market share The report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, North America was the largest regional market for data center generator.

As per data center generator market insights, North America leads the global market. North America, particularly the United States, is home to several of the world's leading technology companies, including Google, Amazon, Microsoft, and Facebook. As per Forbes Magazine, 72 of the world's largest tech companies are based in the United States. These companies operate extensive data center networks to support their cloud services, digital platforms, and massive data storage needs. Besides, the region is at the forefront of innovation, with continuous investments in research and development to improve generator technologies. This includes integrating renewable energy sources, IoT, and AI for predictive maintenance and enhanced performance. These factors are collectively driving the data center generator market revenue in North America. Competitive Landscape:

- The data center generator market research report has also provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the major market players in the data center generator industry include ABB Ltd, Atlas Copco (India) Ltd., Caterpillar Inc., Cummins Inc., Deutz AG, Generac Power Systems Inc., HITEC Power Protection, Kirloskar Oil Engines Limited, Kohler Co., Langley Holdings plc, Mitsubishi Motors Corporation, Rolls-Royce plc and Yanmar Holdings Co. Ltd.

(Please note that this is only a partial list of the key players, and the complete list is provided in the report.)

-The data center generator market dynamics shows that companies like Caterpillar, Cummins, and Kohler are investing heavily in research and development to innovate and improve generator technologies. This includes developing more efficient, reliable, and environmentally friendly generators. Besides, key players are integrating Internet of Things (IoT) and Artificial Intelligence (AI) technologies to offer smart generator systems. These advancements allow for predictive maintenance, real-time monitoring, and enhanced performance, thereby increasing the reliability and efficiency of power backup solutions. Additionally, leading players are diversifying their product portfolios to include a wide range of generator systems that cater to different needs and scales of data centers. This includes everything from small, modular units to large-scale, industrial-grade generators.

Data Center Generator Market News:

-[In April 2023, Skybox Datacenters and Prologis announced plans to build a massive 600-megawatt campus near Austin Texas which will offer up to 4 million square feet of data center space. The project will build additional momentum for data center development in Austin, which has become a magnet for tech companies.

-[In January 2023, Amazon Web Services filed plans to rezone nearly 2,000 acres of land in Spotsylvania County for future data center projects, which could bring more than 10 Million square feet of data centers. The proposed campuses in Spotsylvania County are part of Amazon Web Services' plans to invest \$35 Billion in new data center campuses in Virginia over the next 15 years, supported by new tax incentives and grants.

Key Questions Answered in This Report:

- How has the global data center generator market performed so far, and how will it perform in the coming years? - What are the drivers, restraints, and opportunities in the global data center generator market?

-[]What is the impact of each driver, restraint, and opportunity on the global data center generator market?

- What are the key regional markets?

-[]Which countries represent the most attractive data center generator market?

-[What is the breakup of the market based on the product?

- Which is the most attractive product in the data center generator market?

-[]What is the breakup of the market based on the capacity?

- Which is the most attractive capacity in the data center generator market?

- What is the breakup of the market based on the tier?

- Which is the most attractive tier in the data center generator market?

- What is the competitive structure of the market?

-[]Who are the key players/companies in the global data center generator market?

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