Green Data Center - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2021 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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Report description:

The Green Data Center Market size is estimated at USD 73.87 billion in 2024, and is expected to reach USD 155.09 billion by 2029, growing at a CAGR of 15.99% during the forecast period (2024-2029).

Key Highlights
-The global green data center market is expected from USD 57.63 billion in the current year and is projected to reach USD 120 billion over the next five years. Over the years, the concern regarding the growing percentage of energy consumption by data centers has alerted governments globally to regulate energy consumption, which is the primary factor for driving the green data center market. Also, the growth of data centers and colocation services are other factors driving green data centers.
-As cloud computing becomes more energy-efficient and increasingly relies on renewable sources, other industry verticals such as manufacturing, transportation, and buildings are expected to turn to green data centers to reduce emissions. For instance, a car manufacturer can outsource all of its in-house computing to zero-emission data centers.
-The rise in demand for data storage and storage space is a key factor driving the need for green data centers. According to Huawei, the global estimate of data center demand is expected to increase by 3 to 10 times over the forecast period. Green data center, which provides practical and eco-friendly solutions in terms of data storage and reduction in energy consumption, is expected to witness great demand, owing to the positive outlook of the data center storage needs and new constructions, which have been brought about due to the regulations and the anticipated rise in need to reduce the operational expenditure.
-Moreover, due to the rise of artificial intelligence (AI), machine learning (ML), big data, and the Internet of Things (IoT), the data centers' global electricity consumption will continue to increase, which is another driving factor for green data centers. According to International Energy Agency (IEA), data centers account for 1 to 1.5 percent of global electricity consumption. Hence, a strong focus on energy efficiency could drive the market.
-Despite the long-term savings and ROI, renewable energy data centers have a high initial investment cost. The initial investment

in building an energy-efficient green data center is higher than the traditional one. To modify the existing infrastructure, companies need higher investments which is a restrain. However, companies are willing to invest in green data centers even though the cost of ownership is better and savings in the long term will pay back initial investments.
-COVID-19 is expected to drive the demand for green data centers owing to factors such as acceleration of cloud data center services, growing reliance on data center automation, driving up of hardware reuse as a primary challenge, greater remarketing of data center hardware. An increase in environmental awareness due to COVID-19 and this trend continues to grow post-pandemic considering the increase in organizations data traffic and big data analytics.

Green Data Center Market Trends

Power Segment to Hold a Significant Market Share

- Green data centers are built to maximize energy efficiency and lower environmental impact. The key demand is for greater energy efficiency because these data centers' power consumption and cooling problems are two of the most significant problems that enterprises confront globally and invest heavily in these. It is vital to control these operating costs to improve business operations and maintain market competitiveness.
- Power plays a significant role in investments in green data centers. Both low-power and effective solutions assist organizations in achieving their goals. Moving to variable-speed fans is one technique to reduce energy consumption in the data center. According to recent research, lowering the central processing unit (CPU) fan speed can reduce power consumption by 20%. As a result, businesses should employ variable-speed fans to cool data center equipment and reduce energy use.
- Datacenter energy costs have exceeded the overall investments in equipment rooms and auxiliary devices. However, results from recent research have shown that this trend is slowing down due to the effective green efficiency measures taken up in mature markets of the United States and Europe.
- By switching to economy mode, where servers run on utility power, server virtualization, where physical servers are used as pools, increases server utilization, consolidates space and equipment and reduces energy consumption because it decreases the number of physical servers needed within the data center. Due to the reduced number of servers being utilized, energy consumption decreases significantly due to a reduced need for electricity and cooling.
- With the increasing electricity usage, billings, and increasing emissions of CO2 from these data centers, the need for green data centers is set to increase, thereby driving the market forward. According to the survey conducted by the Uptime Institute, Data center operators aim to get their average power usage effectiveness (PUE) ratio reduced from 1.98 to 1.55 over the last five years owing to the development of the newest data centers from hyper-scale and colocation providers with a particular focus of energy efficiency.

North America Occupies the Largest Market Share

- The North American region holds the largest share in the green data center market, owing to the presence of many services and software providers driving the market forward. The United States is expected to dominate the market in North America, followed by Canada, with high investments by colocation providers and hyper-scale data center operators. The demand for cost-effective and efficient power solutions has increased, with more facilities being developed as green data centers in North America. According to the Department of Energy, data centers account for about 2% of all electricity use in the US.
- The expansion of mobile broadband, the emergence of 5G, growth in big data analytics, and cloud computing are the primary factors driving the demand for new data center infrastructures in this region. Network providers are working to ensure the implementation of 5G at a rapid pace for better innovation. Green data center providers have highlighted the reduction in the

carbon footprint of corporations by reducing energy usage and increasing efficiency.
- North America, comprising a considerable amount of data centers and a large number of enterprises switching from hardware to software-based services, is expected to impact the market significantly and be a lucrative market for data center transformation. Microsoft, Amazon, and Facebook pledged to convert their existing data centers into green ones.
- The North American region also contributes substantially to the global data center requirements from the IT, banking, financial servcies, and insurance (BFSI), retail, and healthcare industries. In addition, data center service providers in the region are prompted to manage their operating costs, as the region is a lucrative market, considering the number of data centers and their expansions.
- The government across the region is taking active measures to maintain environmental sustainability, further accelerating data centers' deployment. The rising smartphone and internet penetration across this region lead to the development of the green data center market in the region.

Green Data Center Industry Overview

The green data center market is highly competitive, owing to many players in the market running their business domestically and internationally. The market is moderately concentrated. The key strategies adopted by the major players are product innovation and mergers and acquisitions. Some major players in the market are Cisco Technology Inc., IBM Corporation, Dell EMC Inc., and Fujitsu Ltd, among others. Some of the developments are:-

In November 2022, Volkswagen AG aims to make its data center operations net carbon neutral by 2027. To reach this goal, the company has expanded its computing capacities at the Norwegian operator of CO-neutral data centers by partnering with Green Mountain. The partnership with Green Mountain will allow Volkswagen to hit this target, with all servers at Green Mountain running on 100% renewable electricity generated by hydropower. At the same time, they are naturally cooled by the adjacent fjord.

In November 2022, SB Energy Global partnered with Google to supply 942 MW of Green Energy to match Google's texas Data center consumption. Under the partnership, Google's investment in Texas and commitment to clean energy will be supported by 75% of the renewable energy generated by four solar projects of SB Energy that have a combined capacity of 1.2 gigawatts and are currently under construction. These projects aim to be operational by the middle of 2024.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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