

On-Site Photovoltaic Solar Power For Data Centers - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The On-Site Photovoltaic Solar Power For Data Centers Market size is estimated at USD 26.01 billion in 2025, and is expected to reach USD 49.22 billion by 2030, at a CAGR of 13.6% during the forecast period (2025-2030).

Key Highlights

- Over the medium term, the decreasing solar power installation costs and growing focus on implementing sustainable business practices are expected to drive the on-site photovoltaic solar power for data centers market.
- On the other hand, the lack of space for small data centers to install solar panels is expected to hinder on-site photovoltaic solar power for data centers market growth during the forecast period.
- Nevertheless, the large-scale commercialization of building-integrated photovoltaic technology into small data centers is expected to be a significant opportunity for the on-site photovoltaic solar power for data centers market during the forecast period.
- North America is expected to dominate the market and likely witness the highest CAGR during the forecast period. This growth is attributed due to the increasing investments, coupled with supportive government policies for installing solar PV systems to power data centers in the region, including the United States of America (USA) and Canada.

On-Site Photovoltaic Solar Power For Data Centers Market Trends

Decrease in Solar Power Installation Cost is Likely to Drive the Market

- Data centers are defined as a part of a building, a building itself, or a cluster of buildings dedicated to housing computer

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systems, storage systems, telecommunication systems, and all other associated components. An uninterrupted power supply with backup power is the utmost importance in data centers for data capturing.

- A typical data center consumes power between a few kilowatts to several tens of megawatts. High dependency on the power supply is one of the high operating costs of the data center.
- Several data centers are opting for onsite renewable power sources like solar photovoltaic to reduce operating costs and have a less environmental impact. With decrease in Global Weighted Average Solar PV Levelized Cost of Energy (LCOE) from USD 0.129/kW in 2015 to nearly USD 0.049/kW in 2022 several entities have started adopting it.
- Moreover, Microsoft is planning to run 100% of its data center by renewable energy by the end of 2025. Thus, with a decrease in installation cost, onsite solar photovoltaic facilities are expected to grow over the years.
- Hence, decreasing solar power installation costs are expected to aid the growth of the on-site photovoltaic solar power for data centers market during the forecast period.

North America to Dominate the Market

- North America is one of the largest software and information technology markets globally, and according to Cloudscene, as of 2022, the United States was the largest data centre market in the world, housing nearly 5375 data centres. Additionally, Canada (335) also held significant shares in the global datacentre market.
- Emerson data center in Missouri is one of the key data centers in the United States that is using solar photovoltaic technology on its campus to power its data center. The center has a 100-kilowatt solar panel facility, that was installed at the cost of around USD 50 million. Aiso.net in California, i/o Data Centers in Arizona are few other data centers that are facilitated with onsite photovoltaic solar power facilities.
- The amount of renewable power booked by data center operators increased by 50 percent in a year, and the sector now consumes two-thirds of the renewable power available to corporates in the United States.
- In March 2023, Meta revealed that its renewable energy deployments are growing by 30% each year. Meta has already deployed 3.56 GW of solar capacity, and has over 9 GW in its long-term development pipeline. Meta stands as the largest commercial and industrial purchaser of solar power in the United States.
- Hence, due to rising focus on increasing project and business sustainability by using renewable energy to power the energy needs of datacentres, the market is expected to witness a positive growth in North America.

On-Site Photovoltaic Solar Power For Data Centers Industry Overview

The on-site photovoltaic solar power for data centers market is consolidated. Some of the key players in this market (in no particular order) includes Amazon.com Inc, Alphabet Inc, Microsoft Corporation, Alibaba Group Holding Ltd, Facebook Inc, Dell Technologies Inc, and Affordable Internet Services Online Inc among others.

Additional Benefits:

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

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