

# **Carbon-Neutral Data Center Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F Segmented By Data Center Type (Hyperscale Data Centers, Enterprise Data Centers, Colocation Data Centers, and Others), By Carbon Neutral Solutions (Hardware, Software & Platform and Support Services), By End User (BFSI, Retail, Healthcare, Government and Public Sector, IT and Telecom, Manufacturing and Others), By Region, Competition**

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## **Abstracts**

Global Carbon-Neutral Data Center market is expected to register a fast CAGR during the forecast period. A carbon-neutral data center is a data center that has a net-zero carbon footprint. This means that the data center is designed, operated, and maintained in such a way that it does not contribute to the increase in greenhouse gas emissions, which cause climate change. To achieve carbon neutrality, data centers typically use renewable energy sources such as solar, wind, or hydroelectric power and energy-efficient hardware, cooling systems, and other technologies to minimize their energy consumption and carbon emissions to run their operations. Some data centers may also purchase carbon offsets, which are investments in renewable energy or other carbon-reducing projects that offset the emissions they produce. Carbon offsets allow data centers to invest in carbon-reducing initiatives, such as tree planting, that help to mitigate the effects of their carbon footprint. Overall, a carbon-neutral data center is an important step toward reducing the carbon footprint of the technology industry and mitigating the impacts of climate change.

The carbon-neutral data center market is a rapidly growing industry that is focused on reducing the carbon footprint of data centers. As more companies become conscious of their environmental impact, there is a growing demand for data centers that are powered by renewable energy and are designed to be energy efficient. Companies are increasingly focused on their corporate social responsibility and are looking for ways to reduce their environmental impact. Adopting carbon-neutral data center solutions is one way for companies to meet their sustainability goals.

Government regulations on carbon emissions and rising emphasis on renewable energy led to carbon neutral data center.

Government regulations on carbon emissions and the rising emphasis on renewable energy have played a significant role in promoting the transition to carbon-neutral data centers. The data center industry has traditionally been associated with high energy consumption and significant carbon emissions due to the large number of servers and cooling systems required to operate them. However, the increasing awareness of the negative impact of carbon emissions on the environment has prompted governments and companies to take action and reduce their carbon footprint.

One of the ways in which government regulations have facilitated this transition is through the implementation of carbon pricing mechanisms, which incentivize companies to reduce their carbon emissions by imposing a cost on them. In some cases, this has resulted in data center operators exploring new energy-efficient technologies or renewable energy sources, such as solar, wind, or hydroelectric power, to power their facilities.

Moreover, the rising emphasis on renewable energy has also led to an increasing number of data centers using renewable energy sources such as wind or solar power to offset their carbon footprint. Companies are also exploring the use of carbon capture and storage technologies to mitigate their emissions.

The use of energy-efficient technologies and the adoption of renewable energy sources has not only allowed data center operators to reduce their carbon footprint but has also helped them to save on energy costs. By utilizing energy-efficient equipment, data centers can reduce their energy consumption and, in turn, lower their operating costs.

In conclusion, the combination of government regulations on carbon emissions and the rising emphasis on renewable energy has led to a significant shift toward carbon-neutral

data centers. As the demand for digital services continues to grow, it is likely that the adoption of renewable energy sources and energy-efficient technologies will become even more critical in reducing the carbon footprint of the data center industry.

### Rising electricity tariffs is driving the market growth

Increasing electricity tariffs globally can be a driving force behind the adoption of carbon neutral data centers. As energy costs continue to increase, companies are seeking ways to reduce their energy consumption and carbon footprint, while still maintaining the high-performance computing needs of their data centers. One solution to achieve this goal is to use renewable energy sources such as solar, wind, hydroelectric, and geothermal power to generate electricity for data centers. This can significantly reduce the reliance on traditional fossil fuel-based electricity generation and result in a lower carbon footprint. In addition, data centers can implement energy-efficient technologies and practices, such as virtualization, advanced cooling techniques, and efficient power distribution systems, to further reduce energy consumption and operating costs.

By adopting these strategies, data center operators can not only reduce their environmental impact but also potentially save money in the long run. Customers may also be more inclined to choose data centers that are carbon neutral as part of their corporate social responsibility initiatives and sustainability goals. Overall, rising electricity tariffs globally can be a catalyst for the adoption of carbon-neutral data centers, which can benefit both the environment and the bottom line of data center operators.

### High dependence on non-renewable energy for running data center operations

Data centers are facilities that house many servers and other IT equipment that store, process, and distribute data. These facilities are critical for modern-day businesses and organizations that rely heavily on data-driven operations. However, running data centers requires a significant amount of energy, and many of them depend on non-renewable energy sources such as fossil fuels. Non-renewable energy sources are those that cannot be easily replenished and are in limited supply. Examples include coal, oil, and natural gas. These energy sources are commonly used to generate electricity, which is needed to power data center operations. The high dependence on non-renewable energy for running data centers is a cause for concern due to several reasons. Firstly, non-renewable energy sources are finite, meaning that they will eventually run out. This makes them an unsustainable choice for powering data centers in the long term. Secondly, the use of non-renewable energy sources contributes significantly to

greenhouse gas emissions, which are a major contributor to climate change. Data centers are estimated to be responsible for about 1% of global electricity consumption, which translates to a considerable amount of greenhouse gas emissions. Finally, the cost of non-renewable energy sources can be volatile and subject to geopolitical factors, making it difficult for data center operators to predict and manage their energy costs. To address this issue, data center operators can adopt renewable energy sources such as solar, wind, and hydropower to power their operations. Renewable energy sources are sustainable, emit fewer greenhouse gases, and can help reduce energy costs over the long term. Many data center operators have already started to shift toward renewable energy sources. In conclusion, the high dependence on non-renewable energy for running data center operations is a significant challenge that needs to be addressed. Data center operators should explore sustainable and renewable energy sources to power their facilities and help reduce the environmental impact of their operations.

## Market Segmentation

Based on data center type, the market is further segmented into hyperscale data centers, enterprise data centers, colocation data centers, and others. Based on carbon neutral solutions, the market is further split into hardware, software & platform and support services. Based on end user, the market is further divided into BFSI, Retail, Healthcare, Government and Public Sector, IT and Telecom, Manufacturing and Others. On the basis of region, the market is divided into North America, Europe, Asia-Pacific, South America, and Middle East & Africa.

## Company Profiles

The Carbon-Neutral Data Center market is a growing industry and is becoming increasingly competitive. As more companies seek to reduce their carbon footprint and meet sustainability goals, the demand for carbon-neutral data centers is expected to increase. This has led to the emergence of new players in the market and increased competition among existing providers. Many companies are recognizing the importance of carbon neutrality and are investing in renewable energy sources, such as solar and wind power, to power their data centers. This trend has led to the development of new technologies and solutions for carbon-neutral data centers, further increasing competition in the market.

Some of the major players in the Carbon-Neutral Data Center market include ABB Group, Amazon.com, Inc., 3M Company, Alphabet Inc., Cisco Systems, Inc., Hewlett Packard Enterprise (HPE), Eaton Corporation plc, Fujitsu Ltd, IBM Corporation, and

Microsoft Corporation.

Report Scope:

In this report, the global Carbon-Neutral Data Center market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Carbon-Neutral Data Center Market, By Data Center Type:

Hyperscale Data Centers

Colocation Data Centers

Enterprise Data Centers

Others

Carbon-Neutral Data Center Market, By Carbon Neutral Solutions:

Hardware

Software and Platform

Support Services

Carbon-Neutral Data Center Market, By End User:

BFSI

Retail

Healthcare

Government and Public Sector

IT and Telecom

Manufacturing

Others

Carbon-Neutral Data Center Market, By Region:

Asia-Pacific

China

Japan

India

Australia

South Korea

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Spain

Italy

Middle East & Africa

Israel

Turkey

Saudi Arabia

UAE

South America

Brazil

Argentina

Colombia

### Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the global Carbon-Neutral Data Center market.

### Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

### Company Information

Detailed analysis and profiling of additional market players (up to five).

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