Data Center Generator Market - Global Outlook & Forecast 2023-2028

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Report description:

The global data center generator market is expected to grow at a CAGR of 6.24% during 2022-2028.

KEY HIGHLIGHTS

- The growing number of data center construction has prompted investors to install energy-efficient power infrastructure. Operators have been investing in innovative solutions such as generators powered by hydrotreated vegetable oil, natural gas, hydrogen fuel cells, eco-diesel generator sets, and others.
- The growing deployment of 5G services is growing the demand for edge data center deployments across several countries. Hence, it is increasing the adoption of power infrastructure in those edge facilities.
- As data center investors make climate goals, sustainability is gaining importance across all regions. The sustainability initiatives will drive the adoption of HVO fuel and fuel cell generators in the data center generator market, which are sustainable generators with carbon-free emissions.
- Regions like the Americas and Europe witnessed the adoption of innovative generator facilities like HVO fuel. Data centers colocation providers like Equinix and Digital Realty are moving towards adopting HVO fuel in their data center facilities.
- As part of the sustainability initiatives, the Nordic region is witnessing a decline in the use of generators by operators for meeting climatic goals. A strong power grid in the region makes it less dependent on generators.
- The rise in power outages and the conflicts in the regions affect the power infrastructure in different regions, which drives the demand for generators in the data center facilities.

MARKET TRENDS

Rise in Sustainable Generator Innovations

The growth in power demand from the data and sustainability requirements has led to several innovations regarding generator fuel types in the data center generator market. For instance, the market has witnessed innovations in fuel types such as hydrotreated vegetable oil, natural gas, hydrogen fuel cells, eco-diesel generators, etc. Further, LCL Data Centers, Datum Datacentres, Compass Datacenters, Interxion (Digital Realty), Kao Data, and Ark Data Centers are some colocation operators investing in adopting the HVO fuel generators. In contrast, hyperscale operators such as AWS announced adopting an HVO fuel backup generator powering its data centers in Dublin, Ireland. Also, AWS has announced to shift to the usage of HVO across all its data centers in Europe.

Adoption of Fuel Cell Generators

The data center industry is significantly transforming towards sustainability, and thus the adoption of several unique solutions has been witnessed in the industry. Operators have started adopting fuel cell generators to overcome the extreme power requirements of the facilities. For instance, Equinix, in partnership with the National University of Singapore, announced its plan to test hydrogen-powered fuel cells as a power source for its data centers in Singapore. Moreover, infrastructure providers such as Caterpillar, Ballard Power Systems, ABB, AFC Energy, Atos, and HDF Energy are involved in expanding and designing the fuel cell generators' product portfolio.

Automation of Infrastructure

The growing concerns about outages and increasing downtime have led data center operators to invest in adopting automation solutions for infrastructure. These solutions include software-defined data centers, artificial intelligence, DCIM solutions, remote handling the facility operations, and others.

SEGMENTATION ANALYSIS

- In terms of generators, the data center generator market has grown in adopting generator sets with a 1.5-3 MW capacity. In contrast, the hyperscale facilities are expected to invest in generators with a capacity of over 3 MW. The market for generators with a capacity of up to 1.5 MW has witnessed investments from edge facilities or on-premises data center operators.
- Generators with less than 1 MW power capacity are mostly adopted in modular data center deployments. They are also being adopted in developing countries by small-scale operators as they are cost-effective. The use of portable generators is also growing in the market.
- The procurement of diesel generators dominates the market adoption, with some facilities across the globe involved in procuring gas generators. For instance, Colt Data Centre Services' Tokyo Otemachi data center has 4,500-kVA gas turbine generators with N+1 redundancy.
- In addition, most of the data center is shifting to the sustainability goals of being carbon neutral. Most operators are adopting new innovative technologies like fuel cell generators, HVO fuel generators, and eco diesel generators to operate the data center facility with zero carbon emissions.
- The adoption of DRUPS systems is increasing in APAC, European, and Latin American regions. The prominent vendors operating in the industry are Rolls Royce, Caterpillar, Piller Group, Hitzinger, and Hitech Power Protection. These systems provide an efficiency of over 96% and eliminate the use of separate UPS and generator systems in a data center environment, leading to significant space benefits.

SEGMENTATION ANALYSIS

Segmentation by System Capacity

- 0-1.5 MW
- 5 - 3 MW
- >=3 MW

Segmentation by Systems

- Drups
- Diesel & Gas & Bi-Fuel Generator
- HVO Fuel

Segmentation by Tier Standards

- Tier I & II
- Tier III
- Tier IV

Segmentation by Geography

- North America
o The U.S.
o Canada
- Latin America
o Brazil
o Mexico
o Chile
o Colombia
o Rest of Latin America
- Western Europe
o The U.K.
o Germany
o France
o Netherlands
o Ireland
o Switzerland
o Italy
o Spain
o Belgium
o Other Western European Countries
- Nordics
o Sweden
o Denmark
o Norway
o Finland & Iceland
- Central & Eastern Europe
o Russia
o Poland
o Other Central & Eastern Europe
- Middle East
o UAE
o Saudi Arabia

o Israel
o Other Middle Eastern Countries
- Africa
o South Africa
o Kenya
o Nigeria
o Other African countries
- APAC
o China
o Hong Kong
o Australia
o New Zealand
o India
o Japan
o South Korea
o Taiwan
o Rest of APAC
- Southeast Asia
o Singapore
o Indonesia
o Malaysia
o Thailand
o Philippines
o Vietnam
o Other Southeast Asian countries

VENDOR LANDSCAPE

- ABB, Caterpillar, Cummins, Generac Power Systems, HITEC Power Protection, KOHLER, Rolls-Royce, INNIO, and Yanmar (HIMOINSA) are some of the key players in the global data center generator market.

Key Vendors

- ABB
- Caterpillar
- Cummins
- Generac Power Systems
- HITEC Power Protection
- KOHLER
- Rolls-Royce
- Yanmar Holdings (Himoinsa)

Other Prominent Vendors

- Aggreko
- Aksa Power Generation
- Alterra Power Systems (Palmer Johnson)

- Atlas Copco
- Ausonia
- CK Power
- Detroit Diesel
- DEUTZ
- Enrogen
- Guangzhou Weineng Electromechanical
- HITZINGER Electric Power
- Inmesol
- INNIO
- JCB
- Kirloskar Oil Engines (KOEL)
- Mitsubishi Heavy Industries
- ONIS VISA
- Perkins Engines
- Plug Power

KEY QUESTIONS ANSWERED:

1. How big is the global data center generator market?
2. What is the growth rate of the global data center generator market?
3. Who are the key players in the global data center generator market?
4. What factors drive the data center generator industry growth?
5. How much MW of power capacity is expected to reach the global data center generator market by 2028?

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