

Global Data Center Generator Market Landscape 2025-2030

Market Report | 2025-06-03 | 343 pages | Arizton Advisory & Intelligence

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Report description:

The global data center generator market size by investment is expected to grow at a CAGR of 15.15% from 2024 to 2030.

DATA CENTER GENERATOR MARKET KEY TRENDS

Introduction of HVO Fuel for Generators

-□The data centers are facing increasing pressure to reduce their carbon footprint and operate sustainably. Hydrotreated Vegetable Oil (HVO) has emerged as a viable low-carbon alternative to diesel fuel for backup generators in the data center generator market. HVO is a type of renewable diesel produced by hydrotreating waste vegetable oils and animal fats, making it a drop-in replacement for conventional fossil diesel.

-□A number of data center operators around the world have either deployed HVO fuel or are currently testing it. Some of these operators include Compass Datacenters, Vantage Data Centers, Digital Realty, STACK Infrastructure, ST Telemedia Global Data Centres, Scala Data Centers, DataVita, Verne, AWS, and several others.

-□In June 2024, ST Telemedia Global Data Centres announced its plan to deploy HVO to its data centers in Singapore as a replacement for traditional diesel fuels. This marks the company as the first operator in the country to deploy HVO for use in backup generators. A similar trend has been witnessed across several other countries and regions.

Adoption of Intelligent and Automated Power Systems

-□The generator market is now moving toward software-defined support infrastructure in the data center. Under power infrastructure, software-defined monitoring is crucial for the long-term effectiveness of UPS systems and generators, along with assisting in the correct installation, regular maintenance, and physical security of power systems. DCIM software is designed to measure, monitor, and manage both IT equipment and other infrastructure in data centers.

-□Key players in the Data Center Infrastructure Management (DCIM) software market include Cisco Systems, Siemens, ABB, Rittal, STULZ, Schneider Electric, Delta Power Solution, and Vertiv. DCIM power solutions comprise InfraSuite Manager from Delta Power

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Solutions, EcoStruxure DCIM software by Schneider Electric, Nlyte Software's DCIM offerings, and others.

-□The growing power consumption and carbon emissions from data centers have led operators to increasingly adopt AI and machine learning (ML) technologies for more efficient management. In Latin America, Brazil stands out as an advanced market with approximately 63% of Brazilian companies using data and analytics solutions powered by AI.

Green Initiatives for Low-Emission Data Center Operations

-□Many countries across the globe use solar, hydropower, wind, biomass, and geothermal energy sources to generate renewable energy. Most of the countries around the world are aiming to be carbon-neutral by 2050

-□Data centers are among the largest consumers of power, accounting for 1-3% of the world's total energy use. Data center operators like Amazon, Google, and Microsoft have committed to reaching net-zero carbon emissions, using renewable energy purchase agreements (PPAs) to support their sustainability targets.

-□Data centers often partner with renewable energy providers to power their operations on a large scale. For instance, in November 2024, Equinix signed a 10-year PPA with the French renewable developer Neoen to procure 53 MW of solar power in Italy. The renewable energy will be used to power its data center facilities in Italy.

DATA CENTER GENERATOR MARKET SEGMENTATION INSIGHTS

-□The global data center generator market, particularly in terms of generator system capacity, is primarily seeing the use of generator capacities of 1.5 MW to 3 MW. Colocation providers rely heavily on high-capacity generators to ensure a continuous power supply. Additionally, generators with capacities of 3 MW and above are in high demand due to the growth of hyperscale data centers.

-□The increasing availability of advanced gas and bi-fuel generators reflects ongoing research and development by market leaders. When integrated with data centers, these generators offer efficient power solutions by operating alongside grid supplies. Equinix is equipped with a 4,000 kVA diesel generator in 2N configuration in SY9x in Sydney, Australia.

-□In 2024, diesel generators remained more prevalent in the Middle East and APAC data centers compared with those in America and Europe due to less stringent carbon emission regulations and greater availability of diesel backups, surpassing alternatives like natural gas and bio-fuel generators.

-□Khazna Data Centers, a leading data center operator in the Middle East, has announced its plan to completely switch to Hydrotreated Vegetable Oil (HVO) across its entire portfolio of data centers. All new generators are designed to be HVO-capable, and the company aims to source HVO regionally to reduce Scope 1 emissions.

Segmentation by System Capacity

-□0-1.5 MW

-□1.5-3 MW

-□>=3 MW

Segmentation by System

-□DRUPS Systems

-□Diesel, Gas & Bi-fuel Generators

-□HVO Fuel

-□Fuel Cells

Segmentation by Tier Standards

-□Tier I & II

-□Tier III

-□Tier IV

GEOGRAPHICAL ANALYSIS

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- In the Americas region, the U.S., Canada, and Brazil currently dominate the market share, with the U.S. alone contributing to over 50.5% of the market share in the data center generator market in 2024. Some of the emerging locations include Mexico, Chile, Colombia, and other countries in the Americas region during the forecast period.
- In the European data center generator market, Germany dominates the market with a higher market share, followed by the UK, France, and Norway. Several other countries, such as Italy, Spain, Poland, Sweden, and Denmark, are also witnessing growth.
- In the Middle East & Africa data center generator market, the UAE, Saudi Arabia, South Africa, and Israel are among the top destinations driving demand for the data center and generator infrastructure. Several other emerging destinations include Oman, Bahrain, Qatar, Nigeria, Kenya, Egypt, and other countries.
- The APAC region is among the most dynamic and among fastest-growing data center markets globally. Some of the established markets include China, Hong Kong, Australia, India, Japan, and Singapore. Several countries, such as Malaysia, Indonesia, South Korea, and New Zealand, are witnessing high investments and are poised to become top destinations in the years to come.

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□ Denmark
 - o□ Sweden
 - 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

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- 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

DATA CENTER GENERATOR MARKET VENDOR LANDSCAPE

- The data center generator market has the presence of key generator providers such as Caterpillar, Cummins, Generac Power Systems, Roll-Royce, HITEC Power Protection, Rehlko (Kohler Energy), Legrand, and others.

- The vendors in the global data center generator market that conduct proper research and development to launch new products and technologies that are efficient and sustainable will gain higher traction and market share during the forecast period.

- In 2024, AVK, in partnership with the Power Systems division of Rolls-Royce, sold over 500 MTU generators powered by HVO to the data center sector, providing nearly 1.3 GW of standby power capacity. This positions AVK's status as a key player in the data center industry, having delivered a total of over 3.5 GW of power to date.

Key Generator Providers

- ABB

- Caterpillar

- Cummins

- Generac Power Systems

- HITEC Power Protection

- Rehlko (Kohler Energy)

- Rolls-Royce

- Himinsa

Other Prominent Generator Providers

- Aggreko

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- []CB
- []Kirloskar Oil Engines
- []Mainspring Energy
- []Mitsubishi Electric
- []ONIS VISA Generating Sets
- []Perkins Engines Company
- []Plug Power
- []Vital 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.[]How many MW of power capacity is expected to reach the global data center generator market by 2030?
- 4.[]What are the key trends in the global data center generator market?
- 5.[]Who are the key vendors in the global data center generator market?

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