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Global Data Center 800V DC Power Supply System Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Data Center 800V DC Power Supply System market size was valued at US$ 325 million in 2025 and is forecast to a readjusted size of US$ 672 million by 2032 with a CAGR of 10.5% during review period.

A Data Center 800V DC Power Supply System is an emerging power infrastructure architecture designed for high-density AI servers, high-performance computing clusters, and megawatt-scale IT racks. The system centrally or distributively converts incoming medium- or low-voltage AC power into approximately 800V DC and delivers it to computing racks through DC busways, power sidecars, protection devices, and distribution networks. Rack-level DC/DC converters subsequently step the voltage down to 48V, 12V, or lower point-of-load voltages required by processors and accelerators. Compared with conventional AC distribution and 48V DC architectures, an 800V DC system reduces transmission current, conductor losses, copper requirements, and intermediate power-conversion stages while improving power efficiency, rack-space utilization, and scalability for high-density computing loads. A typical system includes AC/DC rectifiers, 800V DC busways, DC switching and protection equipment, rack-level DC/DC converters, monitoring and control systems, and battery or supercapacitor-based energy storage, and may be deployed through centralized facility-level, row- or sidecar-level, or modular rack-level configurations.

The Data Center 800V DC Power Supply System market remains at an early stage of commercialization, and leading suppliers generally provide project-specific quotations based on system capacity, bus architecture, redundancy level, energy-storage configuration, protection scheme, and site installation requirements. As a result,

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standardized catalog pricing has not yet been established. For sidecar-based or modular systems designed for high-density AI racks with capacities ranging from approximately 400 kW to 1.2 MW, equipment-level pricing in 2026 is estimated at around US$300?700 per kW when the scope includes AC/DC rectifier modules, an 800V DC bus, DC protection devices, and control systems, but excludes upstream transformers, civil works, and in-rack DC/DC converters. On this basis, an 800 kW system may cost approximately US$240,000?560,000, while a 1.2 MW system may cost around US$360,000?840,000. When N+1, 2N, or multi-bus redundancy, lithium-ion batteries, supercapacitors, solid-state DC circuit breakers, busways, and on-site commissioning services are included, the total delivered system price may increase to approximately US$600?1,200 per kW. Because the 800VDC supply chain has not yet reached full scale, high-voltage power-conversion and DC protection components remain relatively expensive, and project customization is substantial, early-stage system prices are expected to remain higher than those of mature conventional AC power architectures. However, unit pricing is likely to decline as AI data-center deployment expands, system designs become more standardized, and manufacturing volumes increase.

The global Data Center 800V DC Power Supply System market is currently transitioning from technology development and ecosystem formation toward early commercial deployment, primarily driven by generative AI, large-model training, high-performance computing, and rapidly increasing rack power density. As next-generation GPU platforms and AI clusters move toward several hundred kilowatts or even megawatt-scale power per rack, conventional AC and 48V DC architectures face growing challenges related to high current, copper consumption, space requirements, heat generation, and conversion losses. This is accelerating the development of 800V DC rectifiers, power sidecars, busways, protection equipment, DC/DC converter modules, and energy-storage solutions. NVIDIA is working with Vertiv, Eaton, Schneider Electric, and other power-infrastructure suppliers to establish an 800V DC ecosystem, with certain platforms and product portfolios expected to enter the market from the second half of 2026 through 2027 alongside next-generation AI computing systems. In the near term, sidecar-based and modular 800V DC solutions are expected to support upgrades of existing data centers, while centralized facility-level 800V DC distribution is likely to become an important long-term architecture for newly constructed hyperscale AI data centers. However, DC fault protection, grounding, interoperability, technical standards, workforce readiness, and initial capital costs remain key constraints on widespread adoption.

This report is a detailed and comprehensive analysis for global Data Center 800V DC

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Power Supply System market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Data Center 800V DC Power Supply System market size and forecasts, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Data Center 800V DC Power Supply System market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Data Center 800V DC Power Supply System market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Data Center 800V DC Power Supply System market shares of main players, shipments in revenue ($ Million), sales quantity (Units), and ASP (US$/Unit), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Data Center 800V DC Power Supply System

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Data Center 800V DC Power Supply System market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Vertiv, Eaton,

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Schneider Electric, Siemens, ABB, Hitachi Energy, GE Vernova, Mitsubishi Electric, Delta Electronics, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Data Center 800V DC Power Supply System market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Single-Bus Architecture

Dual-Bus Architecture

Multi-Bus Redundant Architecture

Market segment by In-Rack Voltage Conversion Path

800V-to-48V Architecture

800V-to-12V Architecture

Others

Market segment by Application

AI Data Center

High-Performance Computing (HPC)

Cloud Computing and Enterprise Data Center

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Others

Major players covered

Vertiv

Eaton

Schneider Electric

Siemens

ABB

Hitachi Energy

GE Vernova

Mitsubishi Electric

Delta Electronics

Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

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The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Data Center 800V DC Power Supply System product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Data Center 800V DC Power Supply System, with price, sales quantity, revenue, and global market share of Data Center 800V DC Power Supply System from 2021 to 2026.

Chapter 3, the Data Center 800V DC Power Supply System competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Data Center 800V DC Power Supply System breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and Data Center 800V DC Power Supply System market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Data Center 800V DC Power Supply System.

Chapter 14 and 15, to describe Data Center 800V DC Power Supply System sales channel, distributors, customers, research findings and conclusion.

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