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Data Center Electrical Commissioning Market Forecasts to 2034 – Global Analysis By Commissioning Type (New Data Center Commissioning, Retrofit & Upgrade Commissioning, Expansion & Capacity Addition Commissioning and Other Commissioning Types), Commissioning Level, Electrical System, Data Center Type, Service Provider Type, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Data Center Electrical Commissioning Market is accounted for $3.07 billion in 2026 and is expected to reach $6.5 billion by 2034 growing at a CAGR of 10% during the forecast period. Data Center Electrical Commissioning is a systematic process that ensures all electrical systems within a data center are designed, installed, tested, and operating according to specified standards and performance requirements. It involves verification of power distribution units, backup generators, uninterruptible power supplies (UPS), switchgear, and cabling infrastructure to guarantee reliability, safety, and efficiency. This process includes functional testing, fault detection, load testing, and documentation of all electrical components. By identifying and resolving potential issues before full operation, electrical commissioning minimizes downtime risks, enhances energy efficiency, and ensures compliance with regulatory standards, ultimately supporting uninterrupted data center operations.

Market Dynamics:

Driver:

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Rising demand for reliable power systems

Enterprises require continuous uptime to support mission-critical workloads and avoid costly downtime. Rising adoption of cloud, AI, and IoT applications amplifies the demand for resilient electrical commissioning. Hyperscale operators are investing heavily in advanced commissioning practices to ensure uninterrupted operations. Regulatory mandates and service-level agreements further reinforce the importance of reliable systems. Consequently, the demand for dependable power infrastructure is a primary driver of market growth.

Restraint:

Skilled workforce shortage challenges

Complex commissioning processes require specialized expertise in power systems, automation, and compliance. Limited availability of trained engineers delays project timelines and increases costs. Smaller markets face acute shortages, hindering rapid adoption of advanced commissioning practices. Workforce gaps also raise risks of operational errors during critical testing phases. As a result, the skilled workforce shortage remains a key restraint on market expansion.

Opportunity:

Adoption of green and energy-efficient solutions

Data centers are under pressure to reduce carbon footprints and align with sustainability goals. Energy-efficient commissioning practices optimize power usage and reduce operational costs. Integration of renewable energy sources further enhances sustainability outcomes. Government incentives and corporate ESG commitments accelerate adoption of eco-friendly commissioning solutions. Therefore, green initiatives act as a catalyst for market growth.

Threat:

Stringent regulatory compliance requirements

Operators must adhere to complex standards governing safety, energy efficiency, and environmental impact. Compliance delays increase project timelines and raise costs.

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Inconsistent regulations across regions complicate global deployment plans for hyperscale operators. Non-compliance risks reputational damage and financial penalties. Collectively, regulatory stringency threatens smooth execution of commissioning projects.

Covid-19 Impact:

The Covid-19 pandemic disrupted commissioning activities due to supply chain delays and workforce restrictions. Lockdowns limited site access, slowing down testing and validation processes. Equipment shortages further delayed project timelines. However, rising digital adoption boosted long-term demand for resilient data center infrastructure. Remote monitoring and automation gained traction as operators sought continuity during restrictions. Overall, Covid-19 acted as both a disruptor and a catalyst for innovation in commissioning practices.

The new data center commissioning segment is expected to be the largest during the forecast period

The new data center commissioning segment is expected to account for the largest market share during the forecast period owing to rising hyperscale and colocation investments. New facilities require comprehensive commissioning to validate electrical systems and ensure reliability. Enterprises prioritize commissioning to meet uptime guarantees and compliance standards. Rapid expansion of cloud and AI workloads drives demand for new data center builds. Technological advancements in commissioning tools enhance efficiency and accuracy. Consequently, new data center commissioning dominates the market as the largest segment.

The backup power systems segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the backup power systems segment is predicted to witness the highest growth rate due to rising demand for resilience. Backup systems safeguard operations against outages and grid instability. Increasing reliance on mission-critical workloads intensifies adoption of advanced backup solutions. Integration of renewable energy and hybrid systems further boosts demand. Enterprises prioritize backup commissioning to ensure compliance with uptime standards. Therefore, backup power systems emerge as the fastest-growing segment in the market.

Region with largest share:

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During the forecast period, the North America region is expected to hold the largest market share as it hosts major hyperscale operators. The presence of Amazon Web Services, Microsoft Azure, Google Cloud, and Meta drives concentrated investment in commissioning practices. Strong regulatory frameworks and advanced energy infrastructure reinforce adoption of reliable power systems. Enterprises prioritize commissioning to meet stringent compliance and uptime requirements. The region benefits from mature digital ecosystems and high internet penetration. Investments in renewable integration and energy-efficient commissioning further strengthen market leadership.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR due to explosive digital growth and infrastructure investments. Rising internet penetration and mobile-first economies fuel hyperscale and edge data center expansion. Governments in China, India, and Southeast Asia are investing heavily in digital and energy infrastructure. Rapid adoption of 5G and IoT applications intensifies reliance on resilient commissioning practices. Subsidies and incentives for green energy accelerate adoption of energy-efficient solutions. Emerging startups and SMEs also contribute to rising demand for commissioning services.

Key players in the market

Some of the key players in Data Center Electrical Commissioning Market include Schneider Electric SE, Siemens AG, ABB Ltd., Eaton Corporation plc, General Electric Company, Honeywell International Inc., Johnson Controls International plc, Mitsubishi Electric Corporation, Toshiba Corporation, Vertiv Holdings Co., Huawei Technologies Co., Ltd., Delta Electronics, Inc., Cummins Inc., Caterpillar Inc. and Hitachi, Ltd.

Key Developments:

In April 2024, Siemens announced a strategic partnership with Equinix to co-develop standardized, prefabricated and pre-tested data center power distribution solutions. This collaboration aims to accelerate deployment timelines and enhance reliability for hyperscale clients.

In November 2023, ABB launched the UNISEC UNIHA 2.0, a new generation of sealed, insulated busbar systems designed for critical power distribution in data centers. This

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launch aimed to enhance safety, reliability, and sustainability in data center electrical infrastructure, directly impacting commissioning practices.

Commissioning Types Covered:

- New Data Center Commissioning
- Retrofit & Upgrade Commissioning
- Expansion & Capacity Addition Commissioning
- Other Commissioning Types

Commissioning Levels Covered:

- Level 1 – Factory Acceptance Testing (FAT)
- Level 2 – Site Acceptance Testing (SAT)
- Level 3 – Integrated Systems Testing (IST)
- Level 4 – Operational Readiness Testing (ORT)

Electrical Systems Covered:

- Power Distribution Units (PDUs)
- Uninterruptible Power Supply (UPS) Systems
- Switchgear & Switchboards
- Transformers
- Backup Power Systems
- Other Electrical Systems

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Data Center Types Covered:

- Hyperscale Data Centers
- Enterprise Data Centers
- Colocation Data Centers
- Edge Data Centers
- Other Data Center Types

Service Provider Types Covered:

- Commissioning Service Providers
- Electrical Engineering & EPC Firms
- Data Center Design & Consulting Firms
- Other Service Provider Types

End Users Covered:

- IT & Telecommunications
- BFSI
- Healthcare & Life Sciences
- Government & Defense
- Manufacturing & Industrial
- Energy & Utilities
- Other End Users

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Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea

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Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2028, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

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All the customers of this report will be entitled to receive one of the following free customization options:

- Company Profiling
  - Comprehensive profiling of additional market players (up to 3)
  - SWOT Analysis of key players (up to 3)
- Regional Segmentation
  - Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)
- Competitive Benchmarking
  - Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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