

DC Distribution Network - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 160 pages | Mordor Intelligence

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Report description:

The DC Distribution Network Market is expected to register a CAGR of 7.04% during the forecast period.

In 2020, COVID-19 negatively impacted the market. Presently, the market is likely to reach pre-pandemic levels.

Key Highlights

- Over the long term, increasing adoption of battery energy storage and distributed renewable energy generation is expected to drive the market.
- On the other hand, safety concerns regarding high-voltage DC distribution systems are expected to hinder the market's growth during the study period.
- Nevertheless, the EV fast charging systems segment is expected to grow significantly during the forecast period.
- Europe, being one of the largest renewable energy markets, is expected to dominate the DC distribution network market during the forecast period.

DC Distribution Network Market Trends

EV Fast Charging Systems to Witness Significant Growth

- Electric vehicles (EV) are a rapidly expanding segment in the automobile market, and they are expected to provide a low-carbon solution for replacing internal combustion engines. As falling Li-ion battery prices have made EVs more affordable, a robust

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charging infrastructure using a battery energy storage system (ESS) is vital to sustaining this energy transition.

- Along with the ever-growing number of electric vehicles (EVs) around the world and pressure from governments across nations to reduce vehicle emissions to zero by 2050, there is a strong need for more efficient charging solutions. Various studies indicate that the acceptance of electric mobility depends on the frequency of charging points and the duration of the charging process. For electric vehicles, it is important to cater to these market requirements.

- High-powered DC charging stations are the solution to reducing the charging time. It can be noted that a typical EV can charge about 80% of its battery capacity in less than 10 minutes with a high-powered DC charging system. DC fast charging dodges all the limitations of the onboard charger and requires conversion by providing DC power directly to the battery. This way, the charging speed can be significantly increased.

- Electric vehicles only accept DC power. Thus, governments in the United States, China, and the European Union have been focusing on utilizing DC distribution networks in the EV charging infrastructure. The DC distribution network helps bypass the AC conversion process altogether, allowing the charge to go directly into the battery. The governments in these regions have provided various standards and incentives for fast-DC charging equipment, which is expected to create more opportunities for the DC distribution network market during the forecast period.

- Therefore, based on the aforementioned factors, the market for electric vehicles fast charging systems is likely to witness significant demand for DC distribution networks over the forecast period.

Europe to Dominate the Market

- Europe is one of the largest renewable energy markets globally, and it accounted for approximately 21% of the total installed renewable energy capacity globally in 2021. Solar power accounted for approximately 28.7% of the total renewable energy installed capacity in the region. Due to the high amount of renewable energy deployment and the increasing shift toward distributed power generation and energy storage, Europe is expected to be one of the largest markets for DC distribution networks during the forecast period.

- The United Kingdom, Germany, Spain, and Poland were the most prominent countries in Europe in terms of solar energy installed capacity. As of 2021, the United Kingdom, Germany, Spain, Poland, and the Netherlands were the top solar energy producers that contributed to more than 80% of the total solar energy installed capacity among countries in Europe.

- The adoption of rooftop solar PV plants is increasing in the region, which is very helpful in shaving peak power demand and decreasing electricity expenditure. The use of energy storage in conjunction with solar PV reduces the intermittency associated with solar power. Hence, the growth in the adoption of solar PV systems is expected to drive the market for DC distribution networks during the forecast period.

- Factors such as supportive government policies, competitive market prices, and an increasing shift toward clean energy sources are expected to provide a positive boost to the DC distribution network market.

- The ESS segment is another significant end-user industry in Europe that is well-developed and is expected to account for a significant share of demand for DC distribution networks. In the European Union, ESS addresses several central principles of the "Clean Energy for All Europeans Package" by balancing power grids and saving surplus energy. It represents a concrete means of improving energy efficiency and integrating more renewable energy sources into electricity systems.

- The European residential energy storage market is likely to grow at a rapid pace during the forecast period on account of growing energy consumption and technological advancements pertaining to energy storage technology, which are leading to a decline in battery prices and widespread deployment of renewable power sources.

- In early 2022, the UK government aimed to increase the country's current 14 GW of solar capacity and expand solar deployment by up to five times by 2035, in addition to developing 24 GW of nuclear power by 2050 and 50 GW of offshore wind by 2030. This is expected to see a significant deployment of solar PV installations in the coming years.

- Further, France is undergoing a digital revolution. The internet's rapid adoption and smartphone technology use have changed customer behavior in various businesses. Particularly in financial services, where demand for digital payment services is

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increasing, providers seek data center capacity to scale up to meet demand, in turn increasing the demand for a DC distribution network.

- Germany, with a target of 98 GW of solar installed capacity and 85% of the electricity coming from renewable sources by 2050, is likely to see significant development in distributed power generation.
- Therefore, based on the points above, Europe is expected to dominate the DC distribution network market over the forecast period.

DC Distribution Network Industry Overview

The global DC distribution network market is consolidated. The key companies include ABB Ltd., Siemens AG, Vertiv Group Corp., Eaton Corporation PLC, and Secheron Sa.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION

- 1.1 Scope of the Study
- 1.2 Market Definition
- 1.3 Study Assumptions

2 EXECUTIVE SUMMARY

3 RESEARCH METHODOLOGY

4 MARKET OVERVIEW

- 4.1 Introduction
- 4.2 Market Size and Demand Forecast in USD Billion, till 2028
- 4.3 Recent Trends and Developments
- 4.4 Government Policies and Regulations
- 4.5 Market Dynamics
 - 4.5.1 Drivers
 - 4.5.2 Restraints
- 4.6 Supply Chain Analysis
- 4.7 Porter's Five Forces Analysis
 - 4.7.1 Bargaining Power of Suppliers
 - 4.7.2 Bargaining Power of Consumers
 - 4.7.3 Threat of New Entrants
 - 4.7.4 Threat of Substitute Products and Services
 - 4.7.5 Intensity of Competitive Rivalry

5 MARKET SEGMENTATION

- 5.1 End User (Qualitative Analysis Only)
 - 5.1.1 Remote Cell Towers

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- 5.1.2 Commercial Buildings
- 5.1.3 Data Centers
- 5.1.4 Military Applications
- 5.1.5 EV Fast Charging Systems
- 5.1.6 Other End Users
- 5.2 Geography
 - 5.2.1 North America
 - 5.2.2 Europe
 - 5.2.3 Asia-Pacific
 - 5.2.4 South America
 - 5.2.5 Middle-East and Africa

6 COMPETITIVE LANDSCAPE

- 6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements
- 6.2 Strategies Adopted by Leading Players
- 6.3 Market Share Analysis
- 6.4 Company Profiles
 - 6.4.1 ABB Ltd.
 - 6.4.2 Siemens AG
 - 6.4.3 Vertiv Group Corp.
 - 6.4.4 Eaton Corporation PLC
 - 6.4.5 Robert Bosch GmbH
 - 6.4.6 Schneider Electric SE
 - 6.4.7 Alpha Technologies Inc.
 - 6.4.8 Nextek Power Systems Inc.
 - 6.4.9 Secheron Sa

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

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