

HVDC Transmission Systems - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 125 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License \$4750.00
- Team License (1-7 Users) \$5250.00
- Site License \$6500.00
- Corporate License \$8750.00

Report description:

The HVDC Transmission Systems Market size is estimated at USD 12.94 billion in 2025, and is expected to reach USD 18.06 billion by 2030, at a CAGR of 6.89% during the forecast period (2025-2030).

Key Highlights

- Over the medium term, factors such as increasing integration of renewable energy generation and aging power grids and investments in transmission and distribution infrastructure are expected to drive the HVDC transmission market during the forecast period.
- On the other hand, the increasing share of distributed and off-grid power generation poses a threat to the HVDC transmission market during the forecast period.
- Nevertheless, the increasing interest in offshore wind power in developing and untapped markets? is expected to create significant opportunities for the HVDC transmission systems market in the near future.
- The European region dominates the market and will likely register significant growth during the forecast period, with increasing energy demand and the expansion of transmission networks across Europe.

HVDC Transmission Systems Market Trends

Submarine HVDC Transmission Systems to Witness Significant Growth

- The submarine HVDC transmission system market is likely to grow significantly due to the development of submarine power

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

transmission systems worldwide. Submarine electricity transmission is gaining importance due to the increasing focus on power trading between countries.

- The HVDC submarine power transmission system is crucial for developing future power transmission networks. HVDC transmission is the only solution for transferring high power across long subsea distances. The major purposes served by HVDC submarine transmission are to interconnect countries or islands separated by sea and to connect remote offshore platforms to main transmission grids.
- The HVDC submarine power transmission system is also used in offshore wind platforms to transmit power to the shore. In 2023, according to the Global Wind Energy Council, the global total offshore wind accounted for 72 GW, with an annual growth rate of 13% compared to the previous year. Thus, with the increasing power generation from offshore wind, the use of the HVDC submarine power transmission system is expected to increase.
- Several subsea cable projects are under construction worldwide. For instance, in June 2023, Japan announced that it had joined the United States and Australia in signing a USD 95 million undersea cable project to connect East Micronesia Island nations and expand networks in the Indo-Pacific region. The project is around 2,250 km long.
- In October 2024, all relevant authorities granted planning consent for an HVDC subsea electricity transmission between Scotland and England. The joint venture between Scottish and Southern Electricity Networks Transmission (SSEN) and National Grid Electricity Transmission (NGET) will start the construction of a 525kV, 2GW Eastern Green Link 2 (EGL2), a high voltage direct current (HVDC) subsea transmission cable from Peterhead in Scotland to Drax in England.
- In October 2023, Clean Path New York (Clean Path NY) announced an agreement with Prysmian Group to provide submarine cable systems for one of the largest transmission infrastructure projects in the United States. Clean Path NY is a USD 11 billion renewable energy project comprising 3,800 MW of wind and solar power and a new 175-mile underground and submarine transmission link. Together, these assets will enable the delivery of more than 7.5 million megawatt-hours of emissions-free energy every year.
- Thus, owing to the above points, demand for the submarine HVDC transmission system is expected to increase in the forecast period.

Europe is Expected to Dominate the Market

- The European power generation mix is expected to change considerably in favor of renewables over the next few years, with countries such as Germany, Spain, Belgium, and France, increasingly moving toward a low-carbon economy. The region also has several policies, such as the EU's renewable energy directive and national renewable energy action plans, that support the transition to a low-carbon energy system.
- The energy transition continues to be an integral part of Germany's energy landscape, with ambitious goals to cut CO2 emissions by 80% and increase the share of renewable energy in total energy consumption to 60% and 80% of electricity generated from renewable sources by 2050.
- With the increasing integration of renewable energy sources and the growing need to enhance the security of supply, HVDC grid technology is expected to evolve in the country. Moreover, investments in the offshore wind industry, solar photovoltaic, grid expansion, and energy storage projects require smart energy infrastructure to balance the fluctuating supply of renewable sources.
- Moreover, in July 2023, National Grid Electricity Transmission (NGET) and SSEN Transmission created a five-year joint venture to build the United Kingdom's longest subsea high voltage DC (HVDC) power system. The Eastern Green Link 2 (EGL2) project will create a 525kV, 2GW HVDC link between Peterhead in Scotland and Drax in England.
- Although the North Sea Link (NSL) HVDC interconnector is 720 km long and the Viking interconnector is 765km long, this will be the UK's single longest energy transmission project at 436km. The work will begin in 2024, with a target operational date of 2029, once final clearance from the regulator Ofgem is secured.
- In Germany, offshore wind farms are rapidly deployed in the North and Baltic Seas. Offshore wind is a cornerstone of Germany's

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

renewable energy strategy, aiming to capitalize on its coastal resources to generate clean electricity. There has been an increase in the installation of high voltage direct current (HVDC) transmission systems in offshore wind farms.

- For instance, in May 2023, TenneT signed a EUR 5.5 billion agreement with NKT, Nexans, and a consortium of Jan De Nul Group, LS Cable & System, and Denys to install HVDC cable systems for ten offshore wind projects in Germany and the Netherlands and one onshore project in Germany by 2031. The deal covers approximately 7,000 km of cables, including design, engineering, production, delivery, and installation of 525 kV HVDC cables.
- Germany is interconnected with neighboring countries through HVDC cables, facilitating cross-border electricity exchange and enhancing grid reliability. For instance, in July 2023, Cenergy Holdings announced that Hellenic Cables, its cables division, in collaboration with Jan De Nul Group, was awarded by TenneT the turnkey supply of three HVAC offshore grid connection cables for the offshore wind farms to be developed in zones N-3.7 & N-3.8 in Germany.
- Thus, owing to the above points, Europe is expected to dominate the HVDC transmission systems market in the future.

HVDC Transmission Systems Industry Overview

The High Voltage Direct Current (HVDC) transmission systems market is semi-consolidated. Some of the major players in the market (in no particular order) include NKT AS, Siemens Energy AG, General Electric Company, Prysmian SpA, Nexans SA, among others.

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, till 2029

4.3 Recent Trends and Developments

4.4 Market Dynamics

4.4.1 Drivers

4.4.1.1 Increasing Integration Of Renewable Energy Generation

4.4.1.2 Aging Power Grids And Investments In Transmission And Distribution Infrastructure

4.4.2 Restraints

4.4.2.1 Increasing Share of Distributed and Off-Grid Power Generation

4.5 Supply Chain Analysis

4.6 Porter's Five Forces Analysis

4.6.1 Bargaining Power of Suppliers

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 4.6.2 Bargaining Power of Consumers
- 4.6.3 Threat of New Entrants
- 4.6.4 Threat of Substitutes Products and Services
- 4.6.5 Intensity of Competitive Rivalry
- 4.7 Investment Analysis

5 MARKET SEGMENTATION

- 5.1 Transmission Type
 - 5.1.1 Submarine HVDC Transmission System
 - 5.1.2 HVDC Overhead Transmission System
 - 5.1.3 HVDC Underground Transmission System
- 5.2 Component
 - 5.2.1 Converter Stations
 - 5.2.2 Transmission Medium (Cables)
- 5.3 Geography
 - 5.3.1 North America
 - 5.3.1.1 United States of America
 - 5.3.1.2 Canada
 - 5.3.1.3 Rest of the North America
 - 5.3.2 Europe
 - 5.3.2.1 United Kingdom
 - 5.3.2.2 Germany
 - 5.3.2.3 France
 - 5.3.2.4 Italy
 - 5.3.2.5 Rest of the Europe
 - 5.3.3 Asia-Pacific
 - 5.3.3.1 China
 - 5.3.3.2 India
 - 5.3.3.3 Japan
 - 5.3.3.4 Rest of the Asia-Pacific
 - 5.3.4 Middle-East and Africa
 - 5.3.4.1 United Arab Emirates
 - 5.3.4.2 Saudi Arabia
 - 5.3.4.3 South Africa
 - 5.3.4.4 Rest of the Middle-East and Africa
 - 5.3.5 South America
 - 5.3.5.1 Brazil
 - 5.3.5.2 Argentina
 - 5.3.5.3 Rest of the South America

6 COMPETITIVE LANDSCAPE

- 6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements
- 6.2 Strategies Adopted by Leading Players
- 6.3 Company Profiles
 - 6.3.1 NKT AS
 - 6.3.2 Siemens Energy AG
 - 6.3.3 Sumitomo Electric Industries, Ltd.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 6.3.4 General Electric Company
- 6.3.5 Toshiba Corporation
- 6.3.6 Mitsubishi Electric Corporation
- 6.3.7 Prysmian S.P.A.
- 6.3.8 Nexans S.A.
- 6.4 Market Player Ranking

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

- 7.1 Increasing Interest In Offshore Wind Power in the Developing And Untapped Markets?

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

**HVDC Transmission Systems - Market Share Analysis, Industry Trends & Statistics,
Growth Forecasts (2025 - 2030)**

Market Report | 2025-04-28 | 125 pages | Mordor Intelligence

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

| Select license | License | Price |
|----------------|--------------------------|-----------|
| | Single User License | \$4750.00 |
| | Team License (1-7 Users) | \$5250.00 |
| | Site License | \$6500.00 |
| | Corporate License | \$8750.00 |
| | | VAT |
| | | Total |

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

| | | | |
|---------------|----------------------|-------------------------------|---|
| Email* | <input type="text"/> | Phone* | <input type="text"/> |
| First Name* | <input type="text"/> | Last Name* | <input type="text"/> |
| Job title* | <input type="text"/> | | |
| Company Name* | <input type="text"/> | EU Vat / Tax ID / NIP number* | <input type="text"/> |
| Address* | <input type="text"/> | City* | <input type="text"/> |
| Zip Code* | <input type="text"/> | Country* | <input type="text"/> |
| | | Date | <input type="text" value="2026-03-02"/> |
| | | Signature | |

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

