

# **HVDC Transmission Global Market Insights 2025, Analysis and Forecast to 2030, by Market Participants, Regions, Technology, Application, Product Type**

<https://marketpublishers.com/r/HE2782ABEBA2EN.html>

Date: July 2025

Pages: 98

Price: US\$ 3,200.00 (Single User License)

ID: HE2782ABEBA2EN

## **Abstracts**

HVDC Transmission Market Summary

### **Introduction**

High Voltage Direct Current (HVDC) transmission systems represent advanced electrical power transmission technology that enables efficient long-distance power transmission and interconnection of electrical grids with different characteristics. These systems convert alternating current (AC) to direct current (DC) for transmission and then convert back to AC for distribution, offering significant advantages in power losses, transmission capacity, and grid stability. The market encompasses overhead, subsea, mixed, and underground HVDC transmission systems, utilizing Line Commutated Converter (LCC) and Voltage Source Converter (VSC) technologies. HVDC systems serve critical functions in renewable energy integration, long-distance power transmission, grid interconnection, and submarine cable applications. The increasing demand for renewable energy integration, growing need for long-distance power transmission, grid modernization initiatives, and the expansion of interconnected power systems drive continuous market growth.

### **Market Size and Growth Forecast**

The global HVDC transmission market is projected to reach between USD 10.0 billion and USD 12.0 billion in 2025, with a compound annual growth rate (CAGR) of 3% to 8% through 2030, reflecting the essential role of these systems in modern power transmission infrastructure.

## Regional Analysis

North America: The United States leads with substantial grid modernization and renewable energy integration projects, while Canada focuses on long-distance transmission for hydroelectric power. Europe: Germany, France, and the United Kingdom dominate the market, driven by offshore wind farm connections and cross-border power trading requirements. Asia Pacific: China leads in HVDC installations for long-distance transmission, while India experiences growing demand for grid interconnection and renewable energy integration. Rest of the World: Brazil enhances long-distance transmission capabilities, and the Middle East, notably UAE and Saudi Arabia, invests in grid interconnection projects.

## Type Analysis

Overhead: Expected growth of 3.5-8.5%, valued for long-distance terrestrial transmission and cost-effective solutions. Trends focus on higher voltage levels and increased transmission capacity. Subsea: Projected growth of 4.0-9.0%, key for offshore wind farm connections and island interconnections. Advances highlight deeper water capabilities and enhanced reliability. Mixed: Anticipated growth of 3.0-7.5%, essential for complex transmission routes combining different technologies. Developments prioritize system optimization and reliability. Underground: Expected growth of 4.5-9.5%, important for urban areas and environmentally sensitive regions. Trends emphasize higher capacity and reduced environmental impact.

## Technology Analysis

Line Commutated Converter (LCC): Expected growth of 2.5-7.0%, valued for high-power transmission and proven reliability. Trends focus on efficiency improvements and reduced harmonics. Voltage Source Converter (VSC): Projected growth of 4.0-9.0%, key for renewable energy integration and grid stability. Advances highlight improved control capabilities and reduced footprint.

## Key Market Players

Leading firms include ABB, offering comprehensive HVDC solutions with advanced converter technologies; Siemens, specializing in high-efficiency transmission systems; General Electric, providing innovative HVDC technologies; Hitachi Energy, focusing on grid integration solutions; Nexans, advancing submarine cable technologies; LS Electric, serving Asian markets; American Superconductor Corporation, developing

superconducting transmission solutions; Transgrid Solutions, providing grid interconnection services; C-EPRI Electric Power Engineering, focusing on research and development; Toshiba Corporation, advancing power electronics technologies; Mitsubishi Electric Corporation, enhancing transmission efficiency; NR Electric, serving Chinese market expansion; Double Engineering Company, providing specialized HVDC solutions; ATCO Electric, focusing on utility applications; and HvdC Technologies, developing innovative transmission technologies.

### **Porter's Five Forces Analysis**

**Threat of New Entrants:** Low, due to extremely high capital requirements, technical expertise needs, and established utility relationships. **Threat of Substitutes:** Low, as HVDC transmission offers unique advantages for long-distance and subsea applications with limited alternatives. **Bargaining Power of Buyers:** Moderate, with utilities and governments having significant projects but limited supplier options for complex HVDC systems. **Bargaining Power of Suppliers:** Moderate, due to specialized component requirements and limited suppliers of high-voltage equipment. **Competitive Rivalry:** Moderate, with established players competing on technology, project execution capabilities, and long-term service support.

### **Market Opportunities and Challenges**

**Opportunities:** The massive expansion of renewable energy installations creates substantial demand for HVDC transmission to connect remote generation sites. Grid modernization initiatives worldwide present significant opportunities for HVDC technology deployment. The development of offshore wind farms requires specialized subsea HVDC transmission systems. International power trading and grid interconnection projects drive demand for cross-border HVDC links. The need for grid stability and power quality improvement creates opportunities for VSC HVDC systems.

**Challenges:** Extremely high capital costs for HVDC projects require significant financial commitments and long payback periods. Complex project approval processes and regulatory requirements create lengthy development timelines. Technical complexity demands highly skilled engineering and operational personnel. Environmental and social considerations for transmission corridors create project development challenges. Competition from alternative transmission technologies and energy storage systems affects market positioning.

## Contents

### **CHAPTER 1 EXECUTIVE SUMMARY**

### **CHAPTER 2 ABBREVIATION AND ACRONYMS**

### **CHAPTER 3 PREFACE**

3.1 Research Scope

3.2 Research Sources

3.2.1 Data Sources

3.2.2 Assumptions

3.3 Research Method

Chapter Four Market Landscape

4.1 Market Overview

4.2 Classification/Types

4.3 Application/End Users

### **CHAPTER 5 MARKET TREND ANALYSIS**

5.1 Introduction

5.2 Drivers

5.3 Restraints

5.4 Opportunities

5.5 Threats

### **CHAPTER 6 INDUSTRY CHAIN ANALYSIS**

6.1 Upstream/Suppliers Analysis

6.2 HvdC Transmission Analysis

6.2.1 Technology Analysis

6.2.2 Cost Analysis

6.2.3 Market Channel Analysis

6.3 Downstream Buyers/End Users

### **CHAPTER 7 LATEST MARKET DYNAMICS**

7.1 Latest News

7.2 Merger and Acquisition

- 7.3 Planned/Future Project
- 7.4 Policy Dynamics

## **CHAPTER 8 HISTORICAL AND FORECAST HVDC TRANSMISSION MARKET IN NORTH AMERICA (2020-2030)**

- 8.1 Hvdc Transmission Market Size
- 8.2 Hvdc Transmission Market by End Use
- 8.3 Competition by Players/Suppliers
- 8.4 Hvdc Transmission Market Size by Type
- 8.5 Key Countries Analysis
  - 8.5.1 United States
  - 8.5.2 Canada
  - 8.5.3 Mexico

## **CHAPTER 9 HISTORICAL AND FORECAST HVDC TRANSMISSION MARKET IN SOUTH AMERICA (2020-2030)**

- 9.1 Hvdc Transmission Market Size
- 9.2 Hvdc Transmission Market by End Use
- 9.3 Competition by Players/Suppliers
- 9.4 Hvdc Transmission Market Size by Type
- 9.5 Key Countries Analysis
  - 9.5.1 Brazil
  - 9.5.2 Argentina
  - 9.5.3 Chile
  - 9.5.4 Peru

## **CHAPTER 10 HISTORICAL AND FORECAST HVDC TRANSMISSION MARKET IN ASIA & PACIFIC (2020-2030)**

- 10.1 Hvdc Transmission Market Size
- 10.2 Hvdc Transmission Market by End Use
- 10.3 Competition by Players/Suppliers
- 10.4 Hvdc Transmission Market Size by Type
- 10.5 Key Countries Analysis
  - 10.5.1 China
  - 10.5.2 India
  - 10.5.3 Japan

- 10.5.4 South Korea
- 10.5.5 Southeast Asia
- 10.5.6 Australia

## **CHAPTER 11 HISTORICAL AND FORECAST HVDC TRANSMISSION MARKET IN EUROPE (2020-2030)**

- 11.1 Hvdc Transmission Market Size
- 11.2 Hvdc Transmission Market by End Use
- 11.3 Competition by Players/Suppliers
- 11.4 Hvdc Transmission Market Size by Type
- 11.5 Key Countries Analysis
  - 11.5.1 Germany
  - 11.5.2 France
  - 11.5.3 United Kingdom
  - 11.5.4 Italy
  - 11.5.5 Spain
  - 11.5.6 Belgium
  - 11.5.7 Netherlands
  - 11.5.8 Austria
  - 11.5.9 Poland
  - 11.5.10 Russia

## **CHAPTER 12 HISTORICAL AND FORECAST HVDC TRANSMISSION MARKET IN MEA (2020-2030)**

- 12.1 Hvdc Transmission Market Size
- 12.2 Hvdc Transmission Market by End Use
- 12.3 Competition by Players/Suppliers
- 12.4 Hvdc Transmission Market Size by Type
- 12.5 Key Countries Analysis
  - 12.5.1 Egypt
  - 12.5.2 Israel
  - 12.5.3 South Africa
  - 12.5.4 Gulf Cooperation Council Countries
  - 12.5.5 Turkey

## **CHAPTER 13 SUMMARY FOR GLOBAL HVDC TRANSMISSION MARKET (2020-2025)**

- 13.1 Hvdc Transmission Market Size
- 13.2 Hvdc Transmission Market by End Use
- 13.3 Competition by Players/Suppliers
- 13.4 Hvdc Transmission Market Size by Type

## **CHAPTER 14 GLOBAL HVDC TRANSMISSION MARKET FORECAST (2025-2030)**

- 14.1 Hvdc Transmission Market Size Forecast
- 14.2 Hvdc Transmission Application Forecast
- 14.3 Competition by Players/Suppliers
- 14.4 Hvdc Transmission Type Forecast

## **CHAPTER 15 ANALYSIS OF GLOBAL KEY VENDORS**

### **15.1 ABB**

- 15.1.1 Company Profile
- 15.1.2 Main Business and HVDC Transmission Information
- 15.1.3 SWOT Analysis of ABB
- 15.1.4 ABB HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

### **15.2 Siemens**

- 15.2.1 Company Profile
- 15.2.2 Main Business and HVDC Transmission Information
- 15.2.3 SWOT Analysis of Siemens
- 15.2.4 Siemens HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

### **15.3 General Electric**

- 15.3.1 Company Profile
- 15.3.2 Main Business and HVDC Transmission Information
- 15.3.3 SWOT Analysis of General Electric
- 15.3.4 General Electric HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

### **15.4 Hitachi Energy**

- 15.4.1 Company Profile
- 15.4.2 Main Business and HVDC Transmission Information
- 15.4.3 SWOT Analysis of Hitachi Energy
- 15.4.4 Hitachi Energy HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.5 Nexans

15.5.1 Company Profile

15.5.2 Main Business and HVDC Transmission Information

15.5.3 SWOT Analysis of Nexans

15.5.4 Nexans HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.6 LS Electric

15.6.1 Company Profile

15.6.2 Main Business and HVDC Transmission Information

15.6.3 SWOT Analysis of LS Electric

15.6.4 LS Electric HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.7 American Superconductor Corporation

15.7.1 Company Profile

15.7.2 Main Business and HVDC Transmission Information

15.7.3 SWOT Analysis of American Superconductor Corporation

15.7.4 American Superconductor Corporation HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.8 Transgrid Solutions

15.8.1 Company Profile

15.8.2 Main Business and HVDC Transmission Information

15.8.3 SWOT Analysis of Transgrid Solutions

15.8.4 Transgrid Solutions HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.9 C-EPRI Electric Power Engineering

15.9.1 Company Profile

15.9.2 Main Business and HVDC Transmission Information

15.9.3 SWOT Analysis of C-EPRI Electric Power Engineering

15.9.4 C-EPRI Electric Power Engineering HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

## 15.10 Toshiba Corporation

15.10.1 Company Profile

15.10.2 Main Business and HVDC Transmission Information

15.10.3 SWOT Analysis of Toshiba Corporation

15.10.4 Toshiba Corporation HVDC Transmission Revenue, Gross Margin and Market Share (2020-2025)

Please ask for sample pages for full companies list

## Tables & Figures

### TABLES AND FIGURES

Table Abbreviation and Acronyms  
Table Research Scope of Hvdc Transmission Report  
Table Data Sources of Hvdc Transmission Report  
Table Major Assumptions of Hvdc Transmission Report  
Figure Market Size Estimated Method  
Figure Major Forecasting Factors  
Figure Hvdc Transmission Picture  
Table Hvdc Transmission Classification  
Table Hvdc Transmission Applications  
Table Drivers of Hvdc Transmission Market  
Table Restraints of Hvdc Transmission Market  
Table Opportunities of Hvdc Transmission Market  
Table Threats of Hvdc Transmission Market  
Table Covid-19 Impact For Hvdc Transmission Market  
Table Raw Materials Suppliers  
Table Different Production Methods of Hvdc Transmission  
Table Cost Structure Analysis of Hvdc Transmission  
Table Key End Users  
Table Latest News of Hvdc Transmission Market  
Table Merger and Acquisition  
Table Planned/Future Project of Hvdc Transmission Market  
Table Policy of Hvdc Transmission Market  
Table 2020-2030 North America Hvdc Transmission Market Size  
Figure 2020-2030 North America Hvdc Transmission Market Size and CAGR  
Table 2020-2030 North America Hvdc Transmission Market Size by Application  
Table 2020-2025 North America Hvdc Transmission Key Players Revenue  
Table 2020-2025 North America Hvdc Transmission Key Players Market Share  
Table 2020-2030 North America Hvdc Transmission Market Size by Type  
Table 2020-2030 United States Hvdc Transmission Market Size  
Table 2020-2030 Canada Hvdc Transmission Market Size  
Table 2020-2030 Mexico Hvdc Transmission Market Size  
Table 2020-2030 South America Hvdc Transmission Market Size  
Figure 2020-2030 South America Hvdc Transmission Market Size and CAGR  
Table 2020-2030 South America Hvdc Transmission Market Size by Application  
Table 2020-2025 South America Hvdc Transmission Key Players Revenue

Table 2020-2025 South America Hvdc Transmission Key Players Market Share  
Table 2020-2030 South America Hvdc Transmission Market Size by Type  
Table 2020-2030 Brazil Hvdc Transmission Market Size  
Table 2020-2030 Argentina Hvdc Transmission Market Size  
Table 2020-2030 Chile Hvdc Transmission Market Size  
Table 2020-2030 Peru Hvdc Transmission Market Size  
Table 2020-2030 Asia & Pacific Hvdc Transmission Market Size  
Figure 2020-2030 Asia & Pacific Hvdc Transmission Market Size and CAGR  
Table 2020-2030 Asia & Pacific Hvdc Transmission Market Size by Application  
Table 2020-2025 Asia & Pacific Hvdc Transmission Key Players Revenue  
Table 2020-2025 Asia & Pacific Hvdc Transmission Key Players Market Share  
Table 2020-2030 Asia & Pacific Hvdc Transmission Market Size by Type  
Table 2020-2030 China Hvdc Transmission Market Size  
Table 2020-2030 India Hvdc Transmission Market Size  
Table 2020-2030 Japan Hvdc Transmission Market Size  
Table 2020-2030 South Korea Hvdc Transmission Market Size  
Table 2020-2030 Southeast Asia Hvdc Transmission Market Size  
Table 2020-2030 Australia Hvdc Transmission Market Size  
Table 2020-2030 Europe Hvdc Transmission Market Size  
Figure 2020-2030 Europe Hvdc Transmission Market Size and CAGR  
Table 2020-2030 Europe Hvdc Transmission Market Size by Application  
Table 2020-2025 Europe Hvdc Transmission Key Players Revenue  
Table 2020-2025 Europe Hvdc Transmission Key Players Market Share  
Table 2020-2030 Europe Hvdc Transmission Market Size by Type  
Table 2020-2030 Germany Hvdc Transmission Market Size  
Table 2020-2030 France Hvdc Transmission Market Size  
Table 2020-2030 United Kingdom Hvdc Transmission Market Size  
Table 2020-2030 Italy Hvdc Transmission Market Size  
Table 2020-2030 Spain Hvdc Transmission Market Size  
Table 2020-2030 Belgium Hvdc Transmission Market Size  
Table 2020-2030 Netherlands Hvdc Transmission Market Size  
Table 2020-2030 Austria Hvdc Transmission Market Size  
Table 2020-2030 Poland Hvdc Transmission Market Size  
Table 2020-2030 Russia Hvdc Transmission Market Size  
Table 2020-2030 MEA Hvdc Transmission Market Size  
Figure 2020-2030 MEA Hvdc Transmission Market Size and CAGR  
Table 2020-2030 MEA Hvdc Transmission Market Size by Application  
Table 2020-2025 MEA Hvdc Transmission Key Players Revenue  
Table 2020-2025 MEA Hvdc Transmission Key Players Market Share

Table 2020-2030 MEA HvdC Transmission Market Size by Type  
Table 2020-2030 Egypt HvdC Transmission Market Size  
Table 2020-2030 Israel HvdC Transmission Market Size  
Table 2020-2030 South Africa HvdC Transmission Market Size  
Table 2020-2030 Gulf Cooperation Council Countries HvdC Transmission Market Size  
Table 2020-2030 Turkey HvdC Transmission Market Size  
Table 2020-2025 Global HvdC Transmission Market Size by Region  
Table 2020-2025 Global HvdC Transmission Market Size Share by Region  
Table 2020-2025 Global HvdC Transmission Market Size by Application  
Table 2020-2025 Global HvdC Transmission Market Share by Application  
Table 2020-2025 Global HvdC Transmission Key Vendors Revenue  
Figure 2020-2025 Global HvdC Transmission Market Size and Growth Rate  
Table 2020-2025 Global HvdC Transmission Key Vendors Market Share  
Table 2020-2025 Global HvdC Transmission Market Size by Type  
Table 2020-2025 Global HvdC Transmission Market Share by Type  
Table 2025-2030 Global HvdC Transmission Market Size by Region  
Table 2025-2030 Global HvdC Transmission Market Size Share by Region  
Table 2025-2030 Global HvdC Transmission Market Size by Application  
Table 2025-2030 Global HvdC Transmission Market Share by Application  
Table 2025-2030 Global HvdC Transmission Key Vendors Revenue  
Figure 2025-2030 Global HvdC Transmission Market Size and Growth Rate  
Table 2025-2030 Global HvdC Transmission Key Vendors Market Share  
Table 2025-2030 Global HvdC Transmission Market Size by Type  
Table 2025-2030 HvdC Transmission Global Market Share by Type

## I would like to order

Product name: HVDC Transmission Global Market Insights 2025, Analysis and Forecast to 2030, by Market Participants, Regions, Technology, Application, Product Type

Product link: <https://marketpublishers.com/r/HE2782ABEBA2EN.html>

Price: US\$ 3,200.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/HE2782ABEBA2EN.html>