

# Global HVDC Devices Market Research Report 2024(Status and Outlook)

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## Abstracts

### Report Overview

HVDC (High Voltage Direct Current) devices play a crucial role in the efficient transmission of electricity over long distances. These devices convert alternating current (AC) to direct current (DC) for transmission and then back to AC for distribution. HVDC devices are known for their lower energy losses compared to traditional AC transmission systems, making them essential for interconnecting power grids and integrating renewable energy sources.

The current market size for HVDC devices in 2023 stands at approximately USD 6.7 billion. This market is projected to grow at a Compound Annual Growth Rate (CAGR) of 7.82% from 2024 to 2032. Key growth drivers for the HVDC devices market include the increasing demand for long-distance power transmission, the integration of renewable energy sources, and the need for grid interconnections to enhance grid stability and reliability.

One of the prominent trends in the HVDC devices market is the growing adoption of VSC (Voltage Source Converter) technology. VSC-based HVDC systems offer advantages such as independent control of active and reactive power, black start capabilities, and reduced harmonic distortion. For instance, the use of VSC technology in offshore wind connections enables efficient power transmission over long distances with minimal losses.

Another trend shaping the market is the rise of multi-terminal HVDC systems. These systems allow the connection of more than two terminals, enabling the creation of complex grid configurations and enhancing grid flexibility. Multi-terminal HVDC systems

are increasingly being deployed to support the integration of large-scale renewable energy projects and improve grid resilience.

Furthermore, the market is witnessing a shift towards the development of hybrid HVDC systems that combine HVDC technology with other grid technologies like FACTS (Flexible AC Transmission Systems). These hybrid systems offer enhanced grid control capabilities, increased power transfer capacity, and improved grid stability. For example, the integration of HVDC with FACTS devices can help mitigate voltage fluctuations and enhance system reliability.

In terms of regional market distribution, leading markets for HVDC devices include North America, Europe, and Asia Pacific. North America is driven by the need to modernize aging grid infrastructure, while Europe focuses on integrating offshore wind power. Asia Pacific leads the market due to the rapid expansion of power networks and the increasing demand for electricity in countries like China and India. Regional dominance factors include government initiatives to promote clean energy, grid expansion projects, and the growing investments in renewable energy infrastructure.

Despite the positive outlook, the HVDC devices market faces challenges such as high initial investment costs, regulatory hurdles, and technological complexities. Addressing these challenges will require industry players to focus on innovation, cost reduction strategies, and collaboration with stakeholders to drive market growth and overcome barriers to adoption.

In conclusion, the HVDC devices market is poised for significant growth driven by the increasing demand for efficient long-distance power transmission and the integration of renewable energy sources. Embracing technological advancements, such as VSC technology, multi-terminal systems, and hybrid solutions, will be key for industry players to capitalize on market opportunities and address evolving energy needs globally.

This report provides a deep insight into the global HVDC Devices market covering all its essential aspects. This ranges from a macro overview of the market to micro details of the market size, competitive landscape, development trend, niche market, key market drivers and challenges, SWOT analysis, value chain analysis, etc.

The analysis helps the reader to shape the competition within the industries and strategies for the competitive environment to enhance the potential profit. Furthermore, it provides a simple framework for evaluating and accessing the position of the business organization. The report structure also focuses on the competitive landscape of the

Global HVDC Devices Market, this report introduces in detail the market share, market performance, product situation, operation situation, etc. of the main players, which helps the readers in the industry to identify the main competitors and deeply understand the competition pattern of the market.

In a word, this report is a must-read for industry players, investors, researchers, consultants, business strategists, and all those who have any kind of stake or are planning to foray into the HVDC Devices market in any manner.

### Global HVDC Devices Market: Market Segmentation Analysis

The research report includes specific segments by region (country), manufacturers, Type, and Application. Market segmentation creates subsets of a market based on product type, end-user or application, Geographic, and other factors. By understanding the market segments, the decision-maker can leverage this targeting in the product, sales, and marketing strategies. Market segments can power your product development cycles by informing how you create product offerings for different segments.

### Key Company

Hitachi ABB Power Grids

Siemens

Prysmian Group

XD Group

GE Grid Solution

TBEA

Xuji Group

Nexans

NKT

Toshiba Energy Systems & Solutions

Mitsubishi Electric

Market Segmentation (by Type)

Voltage-Source Converters (VSC)

Converter Transformers

HVDC Converter Stations

Other

Market Segmentation (by Application)

Overhead Transmission

Underground Transmission

Subsea Transmission

Geographic Segmentation

North America (USA, Canada, Mexico)

Europe (Germany, UK, France, Russia, Italy, Rest of Europe)

Asia-Pacific (China, Japan, South Korea, India, Southeast Asia, Rest of Asia-Pacific)

South America (Brazil, Argentina, Columbia, Rest of South America)

The Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria, South Africa, Rest of MEA)

Key Benefits of This Market Research:

Industry drivers, restraints, and opportunities covered in the study

Neutral perspective on the market performance

Recent industry trends and developments

Competitive landscape & strategies of key players

Potential & niche segments and regions exhibiting promising growth covered

Historical, current, and projected market size, in terms of value

In-depth analysis of the HVDC Devices Market

Overview of the regional outlook of the HVDC Devices Market:

#### Key Reasons to Buy this Report:

Access to date statistics compiled by our researchers. These provide you with historical and forecast data, which is analyzed to tell you why your market is set to change

This enables you to anticipate market changes to remain ahead of your competitors

You will be able to copy data from the Excel spreadsheet straight into your marketing plans, business presentations, or other strategic documents

The concise analysis, clear graph, and table format will enable you to pinpoint the information you require quickly

Provision of market value (USD Billion) data for each segment and sub-segment

Indicates the region and segment that is expected to witness the fastest growth as well as to dominate the market

Analysis by geography highlighting the consumption of the product/service in the region as well as indicating the factors that are affecting the market within each region

Competitive landscape which incorporates the market ranking of the major players, along with new service/product launches, partnerships, business expansions, and acquisitions in the past five years of companies profiled

Extensive company profiles comprising of company overview, company insights, product benchmarking, and SWOT analysis for the major market players

The current as well as the future market outlook of the industry concerning recent developments which involve growth opportunities and drivers as well as challenges and restraints of both emerging as well as developed regions

Includes in-depth analysis of the market from various perspectives through Porter's five forces analysis

Provides insight into the market through Value Chain

Market dynamics scenario, along with growth opportunities of the market in the years to come

6-month post-sales analyst support

## Customization of the Report

In case of any queries or customization requirements, please connect with our sales team, who will ensure that your requirements are met.

## Chapter Outline

Chapter 1 mainly introduces the statistical scope of the report, market division standards, and market research methods.

Chapter 2 is an executive summary of different market segments (by region, product type, application, etc), including the market size of each market segment, future development potential, and so on. It offers a high-level view of the current state of the HVDC Devices Market and its likely evolution in the short to mid-term, and long term.

Chapter 3 makes a detailed analysis of the market's competitive landscape of the

market and provides the market share, capacity, output, price, latest development plan, merger, and acquisition information of the main manufacturers in the market.

Chapter 4 is the analysis of the whole market industrial chain, including the upstream and downstream of the industry, as well as Porter's five forces analysis.

Chapter 5 introduces the latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

Chapter 6 provides the analysis of various market segments according to product types, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different market segments.

Chapter 7 provides the analysis of various market segments according to application, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different downstream markets.

Chapter 8 provides a quantitative analysis of the market size and development potential of each region and its main countries and introduces the market development, future development prospects, market space, and capacity of each country in the world.

Chapter 9 introduces the basic situation of the main companies in the market in detail, including product sales revenue, sales volume, price, gross profit margin, market share, product introduction, recent development, etc.

Chapter 10 provides a quantitative analysis of the market size and development potential of each region in the next five years.

Chapter 11 provides a quantitative analysis of the market size and development potential of each market segment (product type and application) in the next five years.

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