

Comprehensive Study on HVDC Transmission Market – Global Industry Insights and Key Developments To 2031

The HVDC Transmission Market is growing steadily due to rising demand for efficient long-distance power delivery solutions.

AUSTIN, TX, UNITED STATES, July 30, 2025 /EINPresswire.com/ -- Market Overview:

The global [HVDC \(High Voltage Direct Current\) Transmission Market](#) is undergoing significant expansion as the need for long-distance, efficient, and reliable electricity transmission, growing at a CAGR of 8% during the forecast period (2024–2031). The transition toward renewable energy and the increasing demand for cross-border interconnectors are accelerating HVDC deployment worldwide.

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Market Drivers and Opportunities:

Key market drivers include rising integration of offshore wind and solar power into national grids, increasing electricity trade between countries, and aging AC transmission infrastructure. HVDC technology offers reduced transmission losses, greater stability, and lower land usage making it ideal for connecting remote renewable energy sources to load centers. Opportunities lie in developing flexible, modular HVDC systems and expanding subsea cable transmission.

Geographical Share:

Asia-Pacific leads the global HVDC transmission market, driven by large-scale grid projects in China and India to connect renewable energy hubs.

Europe is investing heavily in HVDC interconnectors to enhance cross-border electricity flow and





In the U.S., the HVDC transmission market is gaining momentum as utilities invest in grid modernization to support renewable energy integration and meet the growing demand for reliable power delivery.”

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achieve decarbonization targets.

North America, particularly the U.S. and Canada, is exploring new HVDC corridors to support the integration of renewables and grid modernization.

Middle East & Africa are emerging markets, focusing on long-distance power delivery and cross-border transmission infrastructure.

Key Players in the Market:

The global HVDC market is shaped by leading companies such as:

Siemens

ABB

General Electric

Hitachi Energy Ltd.

Mitsubishi Electric Corporation

Schneider Electric

NKT A/S

Nexans

NR Electric Co., Ltd.

Toshiba Energy Systems & Solutions Corporation

These players are investing in new HVDC technologies, turnkey solutions, and strategic partnerships to meet the rising demand for grid connectivity and efficiency.

Market Segments:

By Technology: (Capacitor Commutated Converter (CCC), Voltage Source Converter (VSC), Line Commutated Converter (LCC))

By Configuration: (Point-to-Point, Back-to-Back, Multi-terminal)

By Voltage: (350 kV, 350-640 kV, 640-800 kV, 800 kV)

By Application: (Bulk Power Transmission, Interconnection of Grids, Infeed Urban Areas, Offshore Grid, Others)

By Region: (North America, Latin America, Europe, Asia Pacific, Middle East, and Africa)

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Key Developments – United States:

May 2025: A major U.S. utility announced the development of a 3 GW HVDC line connecting wind farms in the Midwest to population centers on the East Coast, scheduled for commissioning in 2028.

July 2024: The U.S. Department of Energy approved funding for a HVDC modernization program focused on replacing aging infrastructure with high-capacity, smart-controlled systems.

Key Developments – Japan:

March 2025: Japan's national grid operator launched a new HVDC submarine cable project linking Hokkaido and Honshu to facilitate stable transmission of wind-generated power.

October 2024: A Japanese energy-tech company unveiled a compact HVDC converter station prototype aimed at urban integration and offshore renewable applications.

Conclusion:

HVDC transmission is fast becoming the backbone of tomorrow's smart, sustainable grid systems. With global initiatives focused on renewable integration, inter-regional connectivity, and power system reliability, the HVDC market is poised for robust growth. Technological advancements and supportive policy frameworks across regions will continue to drive innovation and investment in this critical infrastructure segment.

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