

North America High Voltage Direct Current (Hvdc) Transmission Systems Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The market for high voltage direct current (HVDC) transmission systems in North America is expected to grow at a CAGR of approximately 17.79% during the forecast period (2022 - 2027)

The market was severely impacted by the Covid-19 pandemic, as global energy demand plummeted. However, the market has since rebounded strongly and is expected to grow steadily during the forecast period.

Key Highlights

Over the long term, growing investments in renewable energy transmission systems, primarily offshore wind, is expected to drive the market during the forecast period.

On the other hand, high installation costs and losses for smaller transmission distances are likely to hinder the market growth.

The growth of offshore wind power technology and the offshore oil and gas sector will likely create immense opportunities for the market studied.

North America HVDC Transmission Systems Market Trends

Submarine HVDC Transmission Systems to be the fastest-growing segment

Submarine electricity transmission is gaining importance because of the increasing focus on power trading between countries. The HVDC submarine power transmission system is crucial for developing future power transmission networks.

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It is the only solution for transferring high power across long subsea distances. For these reasons, HVDC lines are preferred for interconnecting offshore wind plants worldwide. In the HVDC transmission system, the submarine power cables can be less costly, especially on a long link where the cable's capacitance requires too much additional charging current. Due to this, submarine HVDC systems are especially preferred for transmitting power from utility-scale offshore wind projects.

The Offshore wind sector is beginning to take off in North America, and the segment is expected to grow massively during the forecast period. Several large-scale wind farms are under development in the region, which is expected to significantly boost the demand for submarine HVDC services during the forecast period.

According to the United States Department of Energy, By May 2022, the U.S. offshore wind energy project development and operational pipeline grew to a potential generating capacity of 40,083 megawatts (MW). The 40,083 MW in the U.S. offshore wind energy pipeline has witnessed a 13.5% growth since 2021.

The U.S. offshore wind energy market continues to be driven by state-level offshore wind energy procurement activities and policies. Collectively, offshore wind energy policies in eight states call for deploying at least 39,322 MW of offshore wind energy capacity by 2040.

Hence, the increasing offshore activities are expected to drive the submarine HVDC transmission systems market during the forecast period.

The United States to Dominate the Market

The market for HVDC in the United States is likely to grow at a significant rate during the forecast period. The transmission and distribution (T&D) loss in the United States was estimated to be around 5% (averaged over the period 2017-2021, lower than global T&D loss, and is among the lowest in the world.

In 2021, offshore oil and natural gas production in the Federal Gulf of Mexico accounted for about 15% of total U.S. crude oil production and about 2% of total U.S. dry natural gas production.

In order to maintain offshore production, the exploration and development activity is moving toward deeper waters, where oil and gas reserves have not been exploited. As deep-sea oil exploration and production requires the construction of temporary or permanent offshore installations, which need massive electricity supply to operate, which is usually done through HVDC connections for long distance transmission, typical in the case of deep-sea exploration. This trend is expected to drive the demand for HVDC transmission services in the country to power offshore installations.

Additionally, the growth of the offshore wind sector is another factor driving the market during the forecast period. The United States government has been promoting the deployment of the HVDC lines to transfer large amounts of power over long distances. They are now being proposed to move electricity generated from wind in high-quality wind resource regions to other parts of the country.

As of May 31, 2022, 24 power purchase agreements for offshore wind energy procurement were signed in the United States, adding up to 17,597 MW in offshore wind energy contracts.

Therefore, the rising offshore oil and gas development and an increasing number of offshore wind farms in the country is expected to require additional HVDC transmission lines to facilitate large GW-scale electricity transmission lines to transmit power from massive offshore wind farms, which is expected to drive the demand for HVDC transmission systems in the country.

Therefore, with the development of renewable, and especially the offshore wind in the United States, the market is likely to witness growth over the forecast period.

North America HVDC Transmission Systems Market Competitor Analysis

The market for high voltage direct current (HVDC) transmission systems in North America is fragmented, with the presence of numerous players, including ABB Ltd., Siemens AG, Toshiba Corporation, General Electric Company, and Alstom SA, among others

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The market estimate (ME) sheet in Excel format
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