

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

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Report description:

The UK HVDC transmission systems market is expected to record a CAGR of approximately 7.37% during the forecast period (2022-2027).

The COVID-19 pandemic had a severe impact on the market, as several projects were delayed. However, the market has since rebounded and is expected to return to pre-pandemic levels during the forecast period.

Key Highlights

Over the long term, the increasing demand for cost-effective solutions for long-distance renewable power transmission may drive the UK HVDC transmission systems market.

However, the growing demand for distributed and remote power plants that provide electricity in rural areas without the need for significant transmission and distribution infrastructure is expected to hinder the growth of the HVDC transmission systems market in the coming years.

Technological advancements in HVDC transmission systems are expected to help in mitigating operational issues with wind and solar-based electricity transmission systems, as the phase difference does not matter in the HVDC transmission line. However, conventional HVAC does not work on this principle, it requires transformers to match the phase generated from a different source. Hence, this factor is expected to provide a better opportunity for the growth of the HVDC transmission system market in the country.

UK HVDC Transmission Systems Market Trends

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Submarine HVDC Transmission System to Grow at the Fastest Rate

Submarine electricity transmission is gaining importance because of the increasing focus on power trade between countries. The HVDC submarine power transmission system is considered a key technology for developing future power transmission networks. It is also the only solution available for the transfer of high power across long subsea distances. For these reasons, HVDC lines are preferred for interconnecting offshore wind plants worldwide.

In 2021, according to the UK Department for Business, Energy and Industrial Strategy, the United Kingdom's transmission, distribution, and other losses in public electricity systems stood at 26.46 TWh, up by nearly 1.2% from 2020. As increasing amounts of renewable energy are integrated into the system, the requirement for HVDC transmission systems to reduce transmission losses during long-distance electricity transmission from utility-scale renewable farms is expected to drive the market during the forecast period.

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.

In December 2022, the Xlinks Morocco-UK Power Project received a multi-million-pound investment from Conenergy. The project will export renewable energy generated in Morocco's Guelmim Oued Noun region through four 3,800-km HVDC subsea cables, the longest in the world.

Similarly, in July 2022, Hitachi announced that it has won a major order from Orsted to provide two high-voltage direct current (HVDC) systems to transmit green electricity from the Hornsea 3 wind farm.

Factors such as the increasing number of offshore wind farms and interconnections between countries through submarine cables are expected to drive the demand for submarine transmission systems over the forecast period, which may, in turn, propel the market studied.

Increased Penetration of Renewable Energy to Drive the Market

The development of renewable energy is a trend in the current scenario. Most of the renewable installed capacity is located far away from the load centers. HVDC is essential for remote projects, as cable lengths of approximately 80 km or more usually require HVDC transmission technology.

As the HVDC lines are better suited for long-distance power transmission, power transmission companies are increasingly using HVDC over HVAC transmission lines to integrate renewable power capacity.

The cost of renewable power generation is continuously declining. The economics of renewables have improved dramatically, with the costs of wind and solar energy declining by 50% in just two years. The major reasons behind the declining generation costs are innovations in the manufacturing and installation of PV power generation, improvement in wind turbine materials and designs, intense competition, and economies of scale.

Due to lower costs, the renewable energy sector is becoming competitive and, in some cases, cheaper than conventional power plants.

According to IRENA, as of 2021, the United Kingdom is one of the world's largest offshore wind markets. In 2021, the total installed offshore wind capacity stood at 12.7 GW, with nearly 2.3 GW of added capacity. During 2017-2021, installed offshore capacity in the country recorded a CAGR of 16.11%. As the United Kingdom rapidly adds new offshore wind capacity, the demand for new HVDC lines to connect to offshore wind farms is expected to grow rapidly.

Therefore, owing to such factors, the growing renewable energy sector is expected to drive the HVDC transmission systems market during the forecast period.

UK HVDC Transmission Systems Market Competitor Analysis

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The UK HVDC transmission systems market is consolidated. Some of the major players include Siemens AG, Toshiba Corporation, General Electric Company, ABB Ltd, and Prysmian Group.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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