Global High Voltage Cable Market Forecast 2024-2032

Market Report | 2024-07-16 | 298 pages | Inkwood Research

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Report description:

KEY FINDINGS
The global high voltage cable market size was $35049.98 million in 2023 and is expected to reach $58433.99 million by 2032, growing at a CAGR of 5.80% during the forecast period. The base year considered for the study is 2023, and the estimated period is between 2024 and 2032.
High voltage cables play a crucial role in power transmission, especially with the increasing demand for efficient and reliable electricity distribution. High voltage cables (HVC) are essential for transmitting electricity over long distances with minimal losses. These cables are available in various types, including high voltage cables underground, which are gaining popularity due to their reliability and reduced environmental impact compared to overhead lines.
One key aspect of HVCs is understanding the distinction between high voltage and high current. While high voltage cables are designed to handle high voltages, they may not necessarily support high currents. The specifications of high voltage cables are critical and include factors such as insulation type, conductor material, and maximum voltage rating.
Major high voltage cable manufacturers like Prysmian Group, Nexans, and Finolex Cables are continuously innovating to meet the growing needs of power utilities and other industries. These companies produce a wide range of high voltage cables and accessories, including HDVC (high voltage direct current) cables and HDVC links. HDVC technology is pivotal for long-distance and underwater power transmission, offering superior efficiency and lower power losses compared to traditional AC systems. The high voltage cable industry encompasses various types of high voltage cables, including XLPE (cross-linked polyethylene) cables, which are preferred for their excellent thermal and mechanical properties. Underground cabling solutions are also particularly important in urban areas and regions with harsh weather conditions, as they enhance the reliability and safety of power transmission systems.
Power utilities heavily rely on high voltage cables to ensure a stable and continuous power supply. With the increasing adoption of renewable energy sources, the demand for advanced high voltage cables and accessories is expected to rise. Companies in the HVC market are increasingly investing in research and development to improve the performance, durability, and cost-effectiveness of their products. Integral to modern power transmission and with a wide array of products and technologies designed to meet the evolving needs of the energy sector, high voltage cables, particularly those used in underground and HDVC applications, are crucial for efficient, reliable, and sustainable electricity distribution.
MARKET INSIGHTS
Key growth enablers of the global high voltage cable market:

- Advancements in emerging economies
- Expansion of infrastructure projects
- Escalating investments in smart grid technology
o Investments in smart grid technology are enabling the integration of renewable energy sources such as wind, solar, and hydropower into the electricity grid. For example, the United States Department of Energy's Smart Grid Investment Grant (SGIG) program has funded numerous projects aimed at modernizing the grid to handle renewable energy inputs, which require advanced high voltage cables to ensure stable and efficient power transmission.
o Smart grids utilize advanced sensors, communication technologies, and automated control systems to monitor and manage the electricity network in real time. In Europe, the European Investment Bank has supported projects like the 'Grid4EU' initiative, which focuses on large-scale smart grid demonstrations to improve grid reliability and efficiency. This has led to an increased demand for high voltage cables capable of supporting these sophisticated monitoring and management systems.
- Increasing integration of renewable energy sources in power generation
Key growth restraining factors of the global high voltage cable market:
- Substantial upfront investment
- Volatility in raw material prices
o The fluctuating prices of key raw materials such as copper, aluminum, and steel can significantly affect the production costs of high voltage cables. For example, since mid-February 2024, copper prices have soared by more than 20%. This surge is primarily attributed to copper ore shortages, exacerbated by clean energy industrial policies promoting electrification in the United States and Europe, coinciding with low stockpiles. The increase is also accredited to supply chain disruptions and increased demand, leading to higher manufacturing costs and squeezing profit margins for cable producers.
o Volatile raw material prices can disrupt the supply chain and lead to delays in project timelines, as well. The COVID-19 pandemic further exemplified this instability, with lockdowns and transportation restrictions causing raw material shortages and price spikes. This volatility compelled firms like Southwire LLC to adjust their procurement strategies and seek alternative suppliers, highlighting the challenges of maintaining a steady supply chain amidst fluctuating prices.

Global High Voltage Cable Market | Top Trends
- One major trend of the high voltage cable market is the rising investment in offshore wind projects, exemplified by the Hornsea Project in the UK, which is boosting the demand for high voltage cables due to the need for efficient and reliable power transmission from offshore wind farms to onshore grids.
- Regulatory changes are also impacting the industry; for instance, the European Union's updated Renewable Energy Directive (RED II) sets stringent environmental and safety standards, prompting innovations and adaptations in cable technologies.
- There is also a growing adoption of underground and submarine cables, as seen in the SuedLink project in Germany, which offered advantages such as reduced environmental and aesthetic impact and increased reliability compared to overhead lines.
- Advancements in cable materials, such as the development of cross-linked polyethylene (XLPE) insulation by companies like Prysmian Group, are playing a crucial role in enhancing the efficiency and performance of high voltage cables, enabling longer transmission distances and improved durability.
SEGMENTATION ANALYSIS
Market Segmentation - Installation and End-User -
Market by Installation:
- Underground
o Underground high voltage cables are less susceptible to weather-related disruptions and physical damage, offering a more reliable and secure means of power transmission. Their installation reduces the risk of outages caused by storms, falling trees, or other environmental factors.
o Unlike overhead lines, underground cables have a minimal visual impact and preserve the natural landscape. This approach is particularly advantageous in urban and densely populated areas, where maintaining aesthetic appeal and minimizing land use are critical considerations.
- Submarine

- Overhead

Market by End-User:
- Industrial
o Power Utilities
o Oil & Gas
o Mining
o Chemical & Petrochemical
o Other Industrial End-Users
- Renewable Energy
- Infrastructure
o Commercial
o Residential
REGIONAL ANALYSIS
Geographical Study based on Four Major Regions:
- North America: The United States and Canada
- Europe: The United Kingdom, Germany, France, Italy, Spain, Sweden, the Netherlands, and Rest of Europe
- Asia-Pacific: China, Japan, India, South Korea, Australia & New Zealand, Thailand, Indonesia, Vietnam, and Rest of Asia-Pacific
o The Asia-Pacific high voltage cable market is expected to be the fastest-growing and dominating region, with the potential to capture a significant revenue share of around 53.35% by 2032.
o The region's high voltage cable market is experiencing robust growth due to extensive infrastructure development projects, including smart grid initiatives and renewable energy integration. These projects drive demand for reliable and efficient power transmission solutions.
o Rapid urbanization and industrialization in countries like China, India, and Japan are further fueling the demand for high voltage cables. As cities expand and industrial activities increase, there exists a greater need for advanced electrical infrastructure to support economic growth and development.
- Rest of World: Latin America, and the Middle East & Africa
COMPETITIVE INSIGHTS
Major players in the global high voltage cable market:
- Hitachi Ltd
- Finolex Cables
- NKT Cables
- Nexans
- Siemens AG
- Synergy Cables Ltd
Key strategies adopted by some of these companies:
- In July 2024, Prysmian Group completed its acquisition of Encore Wire Corporation. This move bolsters Prysmian's leadership in North America, enhancing cross-selling opportunities and benefiting from Encore Wire's production and distribution efficiencies. The acquisition strengthens Prysmian's North American presence, positioning the combined entity to drive electrification and digital transformation, including data center growth and power grid upgrades.
- In February 2023, Hitachi Energy launched a new factory in Chennai dedicated to high-voltage direct current (HVDC) and power quality technologies. These innovative solutions play a crucial role in advancing transmission capabilities, particularly in integrating renewable energy sources and ensuring stability in electrical grids.
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Frequently Asked Questions (FAQs):
- What is the projected market revenue value for the high voltage cable market?
A: The high voltage cable market is anticipated to generate a revenue of $58433.99 million by 2032.

- Which segment is projected to dominate the global high voltage cable market in terms of installation during the forecast period?
A: Based on our projections, the underground segment is expected to dominate the global high voltage cable market in terms of installation.
- What is the size of the high voltage cables industry in the Asia-Pacific region?
A: The Asia-Pacific region is dominating the high voltage cables industry, driven by infrastructure development and increasing energy demand across the region.

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