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Cross-Linked-Polyethylene (XLPE) Market Research Report - Global Forecast till 2030

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Description:

Global Cross-Linked Polyethylene (XLPE) Market Overview

Cross-Linked Polyethylene (XLPE) Market Size was valued at USD 5.78 billion in 2021 . The Cross-Linked Polyethylene (XLPE) market industry is projected to grow from USD 5.96 Billion in 2022 to USD 10.86 billion by 2030, exhibiting a compound annual growth rate (CAGR) of 7.8 % during the forecast period (2022 - 2030). The rise in demand for the XLPE in building and construction are driving the market growth.

Cross-Linked Polyethylene (XLPE) Market Overview
Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

Cross-Linked Polyethylene (XLPE) Market Trends

- **Increasing Applications of XLPE in the building and construction Sector Driving to boost market growth**

LDPE cables exhibit high tensile strength, moisture resistance, impact resistance, and chemical resistance. Hence, the increasing applications of the cables in the residential sector are driving the segment growth. As LDPE cables require minimal investment in the production process and can be produced in bulk, the segment is likely to witness a considerable growth. Moreover, the increasing inclination towards wires and cables with low impact on the environment is surging the utilization of LDPE cables in various construction activities owing to their recyclability. LDPE cables are further used in high voltage insulation systems.

Moreover, Due to the flexibility of the polymer, it is quickly replacing the copper pipes and tubes. It is much cheaper, resists corrosion and shows an extensive useful temperature range. Another most important function of the polymer is in the mining industry. Cross-linked polyethylene is also taking chemical storage tanks due to its high strength and heat, and chemical resistance. Furthermore, growth in automotive industry along with continuous extensive research by various key players across the globe is expected to offer ample opportunities to the market players.

Figure 1: New residential units completed in last 5 years in the US
New residential units completed in last 5 years in the US
Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

XLPE wire with its improved properties doesn't melt easily and can withstand higher temperatures of up to 120°C for an extended time without losing its mechanical and chemical properties. The young modulus is also increased as well as its resistance to abrasion and environmental stress. The cross-link of the polymer structure changes the thermoplastic into a thermoset, hence the resultant improvement in XLPE properties. Insulated XLPE wire can be used under harsh conditions where its strength will be pushed to the limit. XLPE insulation is known to last longer compared to PVC insulation, which is only suitable for low-tension applications. Moreover, XLPE insulated cables are ideal for transmitting higher voltage without hindrance or compromise to its effectiveness. Thanks to their remarkable insulation properties, XLPE insulated cables surpass other alternative insulation materials like Silicon rubbers, and even Ethylene Propylene Rubber, EPR. In addition to their improved chemical properties which is responsible for their amazing moisture, chemical and oil resistance, XLPE insulated cables also possess astounding mechanical properties including but not limited to impact resistance, elongation, and of course, elevated tensile strength. Thus, the increasing demand in the Cross-Linked Polyethylene (XLPE) for cables in building and construction market driving the growth of the Cross-Linked Polyethylene (XLPE) market revenue.

Cross-Linked Polyethylene (XLPE) Market Segment Insights

Cross-Linked Polyethylene (XLPE) Type Insights

The Cross-Linked Polyethylene (XLPE) market segmentation, based on type, High-Density Polyethylene (HDPE), Low-Density Polyethylene (LDPE), Others. The High-Density Polyethylene (HDPE) segment held the majority share in 2021 contributing to around ~750-80% in respect to the Cross-Linked Polyethylene (XLPE) market revenue. This is primarily owing to the rising demand of Cross-Linked Polyethylene (XLPE) in domestic and industrial plumbing. Cross-linked HDPE is gaining traction over raw HDPE due to its thermosetting nature, high mechanical strength, and better stress crack resistance. Furthermore, cross-linked HDPE can be produced economically and thus, finds wide application in domestic and industrial plumbing services. For instance, as per the U.S. Census Bureau statistics published in 2018, a rising number of residential units.

January 2022: Uponor North America joined Plumbing Manufacturers International collaborated with other PMI members to address labor, supply chain, sustainability, and other issues. According to Olinger, Uponor's principal product offering is cross-linked polyethylene — or PEX-a — plumbing and heating systems for residential and commercial uses. Uponor has recently begun to provide PP-RCT, a large-diameter mechanical plumbing solution that integrates flawlessly with PEX systems.

December 2021: EVN, has given a 7.5 million levs ($4.3 million/3.8 million euro) contract to deliver conductors to a local consortium led by enterprises Filkab and Tilkom. The collaboration will oversee supplying five different types of twisted conductors for air suspension with cross-linked polyethylene insulation for 0.6/1 kV voltage. The agreement was inked on December 9th. The tender received bids from five bidders, ranked only on price. Electrical Distribution South manages the power system in Bulgaria's southern and southern-eastern regions.

Cross-Linked Polyethylene (XLPE) Technology Insights

The Cross-Linked Polyethylene (XLPE) market segmentation, based on technology, includes the peroxide method, silane grafting method, electron beam processing. The peroxide method segment dominated the market in 2021 and is projected to be the faster-growing segment during the forecast period, 2022-2030. An extruder is used to first combine HDPE with 2% peroxide at moderate temperatures before crosslinking the mixture at high temperatures (between 200 °C and 250 °C). Radicals are produced when the peroxide breaks down into peroxide radicals (RO•), which abstract (remove) hydrogen atoms from the polymer chain. These come together to create a crosslinked network. PEX is a popular solution for residential water plumbing in new construction due to its flexibility. Hence, demand in plumbing applications positively impacts the market growth.

Cross-Linked Polyethylene (XLPE) Process Insights

The Cross-Linked Polyethylene (XLPE) market data has been divided into physical and chemical. The chemical segment dominated the market in 2021 and is projected to be the faster-growing segment during the forecast period, 2022-2030. Rising demand weather, heat, and moisture resistant materials that provides better protection to wires to transfer energy effectively and efficiently are projected to fuel the market growth. Cross-Linked Polyethylene (XLPE) is widely used in the production of cables and wires due to its excellent property.

May 2021: Nexans qualified and delivered the first 420 kV subsea XLPE AC cable system. Nexans has 420 kV subsea cable systems, including what is currently the longest 420 kV subsea link of 32 km. The demand for transmission capacity is increasing, and to address this trend Nexans has executed an internal R&D program to further extend the transmission capacity of our 420 kV XLPE AC cable systems up to typically 1 GW for a single core link and typically 700MW for a three-core link.

July 2021: Prysmian Group, has finalized a contract for a project awarded by Vattenfall, a leading European energy company, to provide the submarine inter array cable systems for the Hollandse Kust Zuid III and IV offshore wind farm in The Netherlands, following Vattenfall’s successful bid for the permit to develop these non-subsidised wind farms. This project is an important addition to Prysmian’s growing portfolio of 66 kV inter-array cable systems, alongside projects such as Borssele III & IV, Hornsea 2 and Provence Grand Large. Prysmian shall design, test and supply about 170 km of 66 kV XLPE-insulated inter-array cables, as well as the related accessories. The cables will be produced in Nordenham, a Prysmian centre of excellence located in Germany. This development has further increased market share in the Cross-Linked Polyethylene (XLPE) industry.

Figure 2: Cross-Linked Polyethylene (XLPE) Market, by process, 2021 & 2030 (USD Billion)
Cross-Linked Polyethylene (XLPE) Market, by process, 2021 & 2030
Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

Cross-Linked Polyethylene (XLPE) Application Insights

Based on application, the Cross-Linked Polyethylene (XLPE) industry has been segmented Wires & Cables, Plumbing, Medical, Chemical, Automotive Others (Mining, Watercraft Products). Plumbing held the largest segment share in 2021, owing to the increasing demand of building & construction. Conventionally used plumbing materials such as copper and PVC do not perform well in high temperatures and when highly chlorinated water is transported through them over prolonged periods. This is key and highly lucrative growth area for manufacturers of cross-linked polyethylene to exploit.

Thus, various players in the market are focusing on R&D activities to deploy cross-linked polyethylene (PEX) pipes for supply of chlorinated water and for radiant heating applications. Also, other emerging applications such as use of PEX pipes in mining activities and solar applications are also paving the way for growth of the cross-linked polyethylene market ly. XLPE storage tanks are widely used in the chemical industry due to their ability to withstand acidic corrosion and heat. The other segment is expected to bolster at a 7.87% CAGR during the assessed timeline.

Cross-Linked Polyethylene (XLPE) Regional Insights

By Region, the study segments the market North America, Europe, Asia-Pacific, Latin America, Middle east & South Africa. Asia-Pacific Cross-Linked Polyethylene (XLPE) market accounted for USD 2.84 billion in 2021 and is expected to exhibit an 7.79% CAGR during the study period. This is attributed to the increasing development of sewer systems, natural gas production units, expansion of pipelines are anticipated to further propel market revenue growth.

Further, the major countries studied are: The U.S, Canada, Germany, France, UK, Italy, Spain, China, Japan, India, Australia, South Korea, and Brazil.

Figure 3: CROSS-LINKED POLYETHYLENE (XLPE) MARKET SHARE BY REGION 2021 (%)
CROSS-LINKED POLYETHYLENE (XLPE) MARKET SHARE BY REGION 2021
Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

Europe Cross-Linked Polyethylene (XLPE) market accounts for the second-largest market share due to the growing demand for the product from various applications, including the pharmaceutical and foundry sands industry. Further, the Germany Cross-Linked Polyethylene (XLPE) market held the largest market share, and the UK Cross-Linked Polyethylene (XLPE) market was the fastest growing market in the European region

The Asia-Pacific Cross-Linked Polyethylene (XLPE) Market is expected to grow at a CAGR of 7.79% from 2022 to 2030. This is because of the region's increased emphasis on infrastructure in developing nations like China and India. Moreover, China Cross-Linked Polyethylene (XLPE) market held the largest market share, and the India Cross-Linked Polyethylene (XLPE) market was the fastest growing market in the Asia-Pacific region

For instance, India Cross-Linked Polyethylene (XLPE) market is the favored destination for Cross-Linked Polyethylene (XLPE) manufacturers due to the infrastructure projects. On the other hand, Japan is famous for the civil engineering industry. Hence, Asia-Pacific is anticipated to register the highest growth rate over the forecast period from 2022–2030.

Cross-Linked Polyethylene (XLPE) Key Market Players & Competitive Insights

Major market players are spending a lot of money on R&D to increase their product lines, which will help the Cross-Linked Polyethylene (XLPE) market grow even more. Market participants are also taking a range of strategic initiatives to grow their worldwide footprint, including new product launches, contractual agreements, mergers and acquisitions, increased investments, and collaboration with other organizations. Competitors in the Cross-Linked Polyethylene (XLPE) industry must offer cost-effective items to expand and survive in an increasingly competitive and rising market environment.

One of the primary business strategies adopted by manufacturers in the Cross-Linked Polyethylene (XLPE) industry to benefit clients and expand the Cross-Linked Polyethylene market sector is to manufacture locally to reduce operating costs. In recent years, Cross-Linked Polyethylene (XLPE) has provided products with some of the most significant benefits.

Nexans SA (France) is a company in the cable and optical fiber industry. The group is active in four main business areas such as buildings and territories, high voltage and projects, data and telecoms, industry, and solutions. In September 2021, Nexans SA has entered into an Agreement with Xignux SA of Mexico to acquire Centelsa, a premium cable maker in Latin America active in the production of cables for Building and Utilities applications. Centelsa, a Colombian based, iconic world class cable maker, has a total turnover of more than US$250 million and an Enterprise Value of US$225 million.

Also, Borealis AG (Austria) is a chemical company and is the world's eighth largest producer of polyethylene and polypropylene. In October 2020, Borealis and Borouge announced that crosslinked polyethylene (XLPE) power cables made with Borealis extruded high voltage direct current (HVDC) technology will be used for the majority of the German corridor projects. This marks the first use of the Borlink XLPE HVDC technology at extra-high levels of 525 kilovolt (kV). Comprising three separate corridors, this huge project is a chief enabler of the German Energiewende, or energy transition. Borealis Borlink cables will be implemented in the northern part of the SuedOstLink and along the entire SuedLink corridor, thus facilitating the transmission of renewable energy from north to south with minimal loss.

Key Companies in the Cross-Linked Polyethylene (XLPE) market include

- Borealis AG (Austria)

- Solvay (Belgium)
- LyondellBasell Industries Holdings B.V. (The Netherlands)
- PolyOne Corporation (US)
- Exxon Mobil Corporation (US)
- 3H VINACOM CO., LTD (Vietnam)
- Falcone Specialities AG (Switzerland)
- HDC HYUNDAI EP COMPANY (South Korea)
- SACO AEI Polymers (US), among others

Cross-Linked Polyethylene (XLPE) Industry Developments

March 2019: Subsea 7 and NKT have completed installation of the 163-km (101-mi) HV alternating current cable system taking power from the Norwegian mainland to the Martin Linge oil and gas field in the North Sea. It is the world's longest submarine HVAC cable installation, NKT claimed. Operator Equinor and its partners selected the solution to reduce carbon dioxide emissions at the offshore complex by 200,000 metric tons/yr., compared with the alternative of power generators at the production complex. NKT designed, engineered, and manufactured a 145-kV three-core XLPE HVAC submarine cable and associated fiber optic links with a 55 MW capacity; and a 3.5-km (2.2-mi), 17.5-kV infield cable, which included 500 m (1,640 ft) of dynamic cable.

Cross-Linked Polyethylene (XLPE) Market Segmentation

Cross-Linked Polyethylene (XLPE) Type Outlook

- High-Density Polyethylene (HDPE)
- Low-Density Polyethylene (LDPE)
- Others

Cross-Linked Polyethylene (XLPE) Technology Outlook

- Peroxide Method
- Silane Grafting Method
- Electron Beam Processing

Cross-Linked Polyethylene (XLPE) Process Outlook

- Chemical
-

- Physical

Cross-Linked Polyethylene (XLPE) Application Outlook

- Wires & Cables
- Plumbing
- Medical
- Chemical
- Automotive
- Others (Mining, Watercraft Products)

Cross-Linked Polyethylene (XLPE) Regional Outlook

- North America
    - US
    - Canada
- Europe
    - Germany
    - France
    - UK
    - Italy
    - Russia
    - Spain
    - Rest of Europe
- Asia-Pacific
    -

- China
- Japan
- India
- South Korea
- Australia & New Zealand
- Rest of Asia-Pacific

- Latin America
  - Mexico
  - Brazil
  - Argentina
  - Rest of Latin America

- Middle East & Africa
  - Turkey
  - GCC Countries
  - South Africa
  - Rest of the Middle East & Africa

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