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Transmission Line Market Forecasts to 2030 – Global Analysis By Type (Overhead Transmission Lines, Underground Transmission Lines, Submarine Transmission Lines, High Voltage Direct Current (HVDC) Transmission Lines, Flexible AC Transmission Systems (FACTS) and Other Types), Voltage Level, Material, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Transmission Line Market is accounted for $105.9 billion in 2024 and is expected to reach $160.7 billion by 2030 growing at a CAGR of 7.2% during the forecast period. A transmission line is a specialized cable or conductor system used to carry electrical energy from one point to another, typically over long distances. It is designed to minimize power losses and ensure efficient transmission of electrical signals or power. Transmission lines are characterized by their impedance, which determines how signals or energy propagate along them. These lines are essential in power grids, telecommunications, and data systems, ensuring reliable distribution and communication by minimizing distortion and signal degradation.

According to the International Renewable Energy Agency (IRENA), the capacity for renewable energy rose by 9.6% globally in 2022. 90% of the net additions came from solar and wind power, with nearly half coming from Asia, in 2022.

Market Dynamics:

Driver:

Increasing demand for electricity

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The increasing demand for electricity is driving significant growth in the market. As global energy consumption rises due to industrial expansion, population growth, and technological advancements, there is a growing need for efficient, reliable, and high-capacity transmission networks. This trend is pushing investments in modernizing and expanding power grids to ensure stable electricity supply, reduce transmission losses, and support the integration of renewable energy sources.

Restraint:

Environmental concerns

Environmental concerns are negatively impacting the market by raising challenges related to land use, wildlife protection, and ecosystem disruption. The construction of new transmission lines often faces opposition due to concerns over deforestation, habitat loss, and the impact on local communities. Additionally, stringent environmental regulations can increase project costs and delays, making it harder to expand or upgrade transmission infrastructure while ensuring compliance with sustainability standards.

Opportunity:

Renewable energy integration

Renewable energy integration is a key driver in the market, as it requires advanced grid infrastructure to efficiently transport power from remote generation sites to urban areas. With the growing adoption of solar, wind, and hydropower, transmission lines must be upgraded to handle fluctuating energy sources and ensure stable delivery. This transition is prompting investments in smart grids and new transmission technologies to support sustainable energy systems and reduce carbon footprints.

Threat:

High upfront costs

High upfront costs are a significant barrier in the market, hindering the development of new infrastructure and upgrades. The substantial capital required for land acquisition, equipment, and construction often deters investments, especially in emerging markets. These costs can delay projects, limit the scope of expansion, and lead to higher

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electricity prices. Additionally, financial constraints may restrict the adoption of advanced technologies essential for improving transmission efficiency and reliability.

Covid-19 Impact:

The COVID-19 pandemic significantly disrupted the market by causing delays in construction, project financing, and supply chain operations. Lockdowns, workforce shortages, and travel restrictions slowed the development of new transmission lines and maintenance activities. Additionally, economic uncertainties led to reduced investments in infrastructure projects. However, the pandemic also highlighted the need for resilient energy systems, potentially driving future demand for upgraded and more reliable transmission networks.

The aluminum segment is expected to be the largest during the forecast period

The aluminum segment is expected to account for the largest market share during the projection period due to its lightweight, high conductivity, and corrosion resistance properties. It is widely used in overhead power transmission lines, offering an efficient alternative to copper due to its lower cost and better performance in long-distance transmission. The growing demand for reliable, cost-effective energy transmission is boosting aluminum's use, making it an essential material for expanding and upgrading power grids globally.

The telecommunications segment is expected to have the highest CAGR during the forecast period

The telecommunications segment is expected to have the highest CAGR during the extrapolated period as modern power grids increasingly rely on communication systems for monitoring, control, and data transmission. Advanced telecom technologies, such as fiber optics and wireless communication, are integrated into transmission lines to enable real-time monitoring of grid performance, improve operational efficiency, and support smart grid initiatives.

Region with largest share:

North America region is projected to account for the largest market share during the forecast period due to increasing energy demand, the need for grid modernization, and the integration of renewable energy sources. Investment in infrastructure upgrades, such as high-voltage transmission lines and smart grids, is essential to improve

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reliability and reduce transmission losses. Additionally, policies promoting clean energy and sustainability are driving the expansion of transmission networks to support clean power generation across the region.

Region with highest CAGR:

Asia Pacific is expected to register the highest growth rate over the forecast period due to increasing power demand, government-backed infrastructure projects. With the global shift toward renewable energy sources, many countries are focusing on integrating renewables into their energy grids. Several governments in the region are investing heavily in improving and modernizing their electricity grid systems. This includes the construction of new transmission lines to ensure reliable power delivery and support economic growth.

Key players in the market

Some of the key players in Transmission Line market include General Electric (GE), Siemens AG, ABB Ltd., Schneider Electric, Mitsubishi Electric, Tata Power, Hitachi Energy, Sumitomo Electric Industries, LS Cable & System, Koch Industries, Bharat Heavy Electricals Limited (BHEL), Larsen & Toubro (L&T), Andritz AG, JSW Energy and Prysmian Group.

Key Developments:

In February 2024, ABB has partnered with Bharat Heavy Electricals Limited (BHEL) to execute the ±800 kV North-East Agra UHVDC link project. This initiative aims to transmit up to 6,000 MW of hydroelectric power from India's North-East region, further strengthening the country's electricity infrastructure.

In February 2024, GE Vernova secured significant contracts from the Power Grid Corporation of India (PGCIL) for the supply of 765 kV shunt reactors. These orders aim to enhance electricity transmission within India, particularly focusing on integrating renewable energy sources into the national grid.

Types Covered:

- Overhead Transmission Lines
- Underground Transmission Lines

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Submarine Transmission Lines

High Voltage Direct Current (HVDC) Transmission Lines

Flexible AC Transmission Systems (FACTS)

Other Types

Voltage Levels Covered:

Low Voltage (up to 1 kV)

Medium Voltage (1 kV to 69 kV)

High Voltage (69 kV to 345 kV)

Extra High Voltage (345 kV and above)

Materials Covered:

Copper

Aluminum

Composite

Other Materials

Applications Covered:

Electricity Transmission

Renewable Energy Integration

Smart Grid Infrastructure

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- Other Applications

End Users Covered:

- Telecommunications
- Industrial
- Military
- Residential
- Commercial
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France

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- Spain
- Rest of Europe

Asia Pacific

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

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar
- South Africa

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Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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