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Underground Power Cabling and Transmission Market Forecasts to 2034 – Global Analysis By Cable Type (High Voltage Cables, Medium Voltage Cables and Low Voltage Cables), Installation Method, Insulation Material, Voltage Rating, System Functions, Demand Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Underground Power Cabling and Transmission Market is accounted for $8.2 billion in 2026 and is expected to reach $12.3 billion by 2034 growing at a CAGR of 5.2% during the forecast period. Underground electricity transmission involves laying power cables below the surface to supply energy reliably across both cities and rural landscapes. This method limits visual impact, decreases vulnerability to extreme weather, and strengthens grid dependability compared with overhead systems. It is commonly adopted in crowded urban centers, industrial areas, and ecologically sensitive locations. Despite higher upfront and repair expenses, buried networks offer lasting advantages including enhanced public safety, fewer service interruptions, and efficient use of space. Ongoing innovations in cable insulation and digital monitoring are boosting efficiency and durability, positioning underground transmission as a key component of future-ready modern electrical infrastructure.

According to the International Energy Agency, global electricity demand is projected to grow by 3.3% in 2025 and 3.7% in 2026, reaching over 29,000 TWh by 2026. This rapid growth requires significant investment in transmission and distribution networks, including underground cabling for urban reliability.

Market Dynamics:

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Driver:

Increasing urbanization and space constraints

The expansion of urban areas is significantly boosting the demand for underground power cabling systems due to limited available space and infrastructure challenges. Overhead lines often occupy valuable land and contribute to visual clutter, making buried cables a more efficient solution in crowded cities. Authorities increasingly favor underground networks to improve city appearance, minimize land acquisition concerns, and align with smart urban development goals. Rising electricity consumption in metropolitan regions also supports this transition, as underground transmission enables stable and efficient energy distribution while allowing cities to grow without physical or environmental limitations.

Restraint:

High installation and capital costs

The underground power transmission market faces limitations due to the high costs associated with installation and initial investment. Compared to overhead lines, underground systems involve complex excavation work, advanced materials, and expert workforce, significantly raising expenses. In cities, challenges such as congestion, permits, and coordination with existing infrastructure further increase project costs. These financial burdens discourage utilities, particularly in cost-sensitive regions, from adopting underground solutions. Even though these systems provide long-term advantages, the substantial upfront spending slows down deployment and prevents many organizations from transitioning away from conventional overhead transmission networks.

Opportunity:

Increasing investments in grid modernization

Growing financial support for upgrading power networks is opening new avenues for underground transmission solutions. Aging infrastructure in many regions requires replacement to ensure improved efficiency and dependability. Underground systems provide a strong alternative due to their resistance to environmental disruptions and long-term durability. Governments and utility providers are increasingly investing in advanced grid upgrades, including the integration of smart technologies. These

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initiatives drive demand for modern cabling systems that enhance performance and reliability. As countries prioritize resilient and efficient energy networks, underground transmission is positioned to gain substantial advantages from these modernization efforts.

Threat:

Competition from overhead transmission systems

Traditional overhead power transmission continues to challenge the growth of underground cabling solutions. These systems are generally less expensive to install, simpler to maintain, and faster to repair, making them attractive to utility providers. Their adaptability for upgrades and network expansion also adds to their appeal. Although underground systems offer several long-term benefits, the lower upfront cost of overhead infrastructure often influences investment decisions. This trend is particularly evident in regions with financial limitations, where affordability is prioritized over durability and visual benefits, thereby slowing the adoption of underground transmission technologies.

Covid-19 Impact:

The outbreak of COVID-19 influenced the underground power transmission market in both negative and positive ways. Early stages of the pandemic led to halted construction activities, workforce shortages, and interruptions in the supply of essential materials, delaying ongoing projects. Increased costs and logistical constraints further affected progress. At the same time, the crisis emphasized the need for dependable electricity networks due to rising digital dependency and remote operations. As restrictions eased, governments and energy providers renewed their focus on upgrading infrastructure, including underground cabling, to enhance reliability, which contributed to the gradual recovery and future expansion of the market.

The duct & conduit system segment is expected to be the largest during the forecast period

The duct & conduit system segment is expected to account for the largest market share during the forecast period because of its enhanced safety, adaptability, and durability. In this approach, cables are enclosed within protective pathways that guard against external damage, water exposure, and environmental factors. It is commonly used in cities where complex infrastructure requires secure and accessible cable management.

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This system simplifies maintenance and future upgrades, as cables can be replaced without major digging work. Additionally, its capability to accommodate several cables in an organized manner improves operational efficiency, making it a highly favourable option for reliable and expandable underground power distribution networks.

The XLPE (cross-linked polyethylene) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the XLPE (cross-linked polyethylene) segment is predicted to witness the highest growth rate because of its advanced performance characteristics. It provides strong insulation, high thermal stability, and resistance to moisture and chemicals, making it suitable for high-voltage power applications. Compared to conventional materials, XLPE cables offer greater efficiency, longer operational life, and improved load capacity. Their lighter weight and simpler installation process contribute to their growing popularity in infrastructure development. Rising demand for reliable and long-lasting power transmission solutions is significantly boosting the adoption of XLPE cables across global markets.

Region with largest share:

During the forecast period, the Asia-Pacific region is expected to hold the largest market share, supported by fast-paced urban growth, industrial expansion, and increased infrastructure investments. Governments in this region are actively upgrading power networks to ensure stable electricity supply for rising populations and economic development. The need to optimize space in crowded urban centers encourages the use of underground cabling solutions. Furthermore, initiatives related to smart city development and renewable energy projects are accelerating adoption. With several developing economies and ongoing urban infrastructure advancements, Asia-Pacific continues to maintain its leading position in the market for underground power cabling systems.

Region with highest CAGR:

Over the forecast period, the Rest of the World (RoW) region is anticipated to exhibit the highest CAGR, driven by rising infrastructure investments and urbanization initiatives. Authorities are actively upgrading electricity networks to enhance efficiency and support economic progress. Increasing construction of smart cities and urban projects is boosting the need for dependable underground cabling solutions. Furthermore, growing power demand and the push toward renewable energy integration are supporting

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market expansion. With a strong emphasis on building sustainable and robust infrastructure, the region is experiencing rapid adoption of underground transmission systems across various sectors.

Key players in the market

Some of the key players in Underground Power Cabling and Transmission Market include Prysmian Group, Nexans, Southwire Company, LLC, Hengtong Group, Furukawa Electric Co., Ltd., Sterlite Power Transmission Limited, KEC International Limited, KEI Industries Limited, Polycab Industries Limited, LS Cable & System, NKT A/S, Larsen & Toubro, Siemens Energy, GE Vernova, Brugg Kabel AG, ZTT Group, Sumitomo Electric Industries, Ltd. and Fujikura Ltd.

Key Developments:

In December 2025, GE Vernova has signed an agreement with Greenvolt Power to supply onshore wind turbines for the Gurbanesti wind farm in C?l?ra?i county, Romania. The contractual scope covers the supply, installation, and commissioning of 42 units of 6.1MW, 158m rotor turbines. This marks the second major onshore wind agreement for GE Vernova Romania within two months, following an earlier announcement to deliver another 42 turbines for the Ialomi?a wind farm in the country.

In November 2025, Siemens Energy has signed a contract to design and deliver the power conversion system for Oklo's Aurora powerhouse reactors. The contract will see Siemens Energy conduct detailed engineering and layout activities for a condensing SST-600 steam turbine, an SGen-100A industrial generator, and associated auxiliaries to support Oklo’s first advanced reactor, the Aurora powerhouse at Idaho National Laboratory.

In March 2025, Sumitomo Electric Industries, Ltd. (Sumitomo Electric), and 3M announce an assembler agreement enabling Sumitomo Electric to offer variety of optical fiber connectivity products featuring 3M™ Expanded Beam Optical (EBO) Interconnect technology, a high-performance solution to meet scalability needs of next-generation data centers and advanced network architectures.

Cable Types Covered:

- High Voltage Cables

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Medium Voltage Cables

Low Voltage Cables

Installation Methods Covered:

Direct Burial

Duct & Conduit System

Trough System

Tunnel Installation

Insulation Materials Covered:

XLPE (Cross-Linked Polyethylene)

EPR (Ethylene Propylene Rubber)

PVC (Polyvinyl Chloride)

Voltage Ratings Covered:

Up to 33 kV

33-132 kV

132-220 kV

Above 220 kV

System Functions Covered:

Power Transmission

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Power Distribution

Demand Applications Covered:

Industrial Infrastructure

Urban Utilities

End Users Covered:

Utilities

Industrial

Commercial

Residential

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

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Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

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Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

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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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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)

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Competitive Benchmarking

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

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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