

**Wires and Cables Market Assessment, By Installation [Overhead, Underground, Submarine], By Voltage [Low Voltage, Medium Voltage, High Voltage, Extra High Voltage, Ultra High Voltage], By Material Used [Aluminum, Copper, Fiber Optics, Others], By End-user [Residential, Commercial, Industrial, Utility], By Region, Opportunities and Forecast, 2017-2031F**

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**Report description:**

Global wires and cables market is anticipated to grow at a CAGR of 5.22% between 2024 and 2031. The market was estimated to be worth USD 236.5 billion in 2023 and is expected to reach USD 355.32 billion by 2031. Wires and cables serve as vital components for a variety of infrastructural and telecommunication applications. Often used interchangeably and primary distinction between wires and cables lies in their structure, with wires being singular conductors and cables comprising of a group of parallel or bonded conductors forming a unified unit. While typically composed of copper or aluminum, they often feature protective PVC or other insulating coatings. Wire and Cables are indispensable in construction, for power distribution, lighting, and heating, supporting urban development and industrial applications. They are critical for telecommunications and internet connectivity, facilitating high speed data exchange.

The increasing urbanization and industrialization trends have increased the need for power distribution, lighting, and heating systems in urban and industrial areas. Simultaneously, the growing reliance on renewable energy sources and the expansion of last-mile electrification initiatives have led to an increased demand for specialized cables tailored for sustainable power transmission. Notably, undersea cables play a crucial role in delivering power and internet connectivity to distant locations, contributing to the market's growth. Additionally, continuous innovations in material science, technology, and manufacturing processes have resulted in the development of more efficient and durable wires and cables, enhancing their overall reliability and performance. These collective factors have solidified the wires and cables market as an indispensable component in today's increasingly interconnected and electrified world.

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#### Urbanization and Industrial Uptrend Fuel Wires and Cables Market

Rapid urbanization is a significant catalyst for the expansion of the wires and cables market. The global urban population, currently at approximately 3.9 billion, is anticipated to surge to roughly 6.3 billion by 2050. The growth is expected to have a twofold increase in global building floor area by 2060. The development of infrastructure demands rise in wires and cables for utilization of building cables for structural integrity and electrical wires and cables for power transmission. The building and construction industry is evolving towards more sustainable practices to reduce its GHG emissions loads thus exploring applications of green steel, low energy wires and cables, and circular economy in the wires and cables industry. The industrial sector is the largest consumer of electricity and relies on wires and cables for energy and data transfer; industries seek wires and cables with robust insulation, heat resistance, and durable coloration to combat photodegradation for various structural and electromechanical applications.

In April 2023, Nexans introduced Nexans Fire Safety, a comprehensive solution featuring advanced fire protection cabling solutions, modular wiring, smart packaging, premium services, and digital tools. Among its innovations, Nexans offers fire-resistant ALSECURE cables, which ensure electrical circuit integrity for up to two hours. These cables are essential for sustaining critical systems (e.g., emergency lighting, fire detection, warning systems, automatic doors) during fires, ensuring safe and rapid evacuations.

#### Increasing Electricity and Power Requirements Fuel Market Growth

Electricity is an indispensable modern-day necessity, and as per Global Electricity Review 2023, The year 2022 saw the global electricity demand grow by 2.5% to reach 694 TWh and is expected to increase at faster rate as urbanization and industrialization increases. Vital infrastructure such as hospitals, educational institutes, offices, industries rely heavily on a stable electricity supply. Power cables play a crucial role in transferring electrical power across extensive distances, while wire networks help in efficient power distribution. The energy and power sector are undergoing a profound transition from fossil fuels to renewables, with wind and solar energy satisfying 80% of the increased electricity demand, and renewables as a whole covering 92% of the electricity demand rise in 2022. Moreover, the renewable sector is increasingly reliant on specialized wires and cables with higher energy density, increased conductivity, and better insulation with fire retardant properties for its operations.

In May 2023, Nexans introduced a new line of low-carbon distribution grid cables, setting a precedent in the French market. By implementing a comprehensive approach that encompasses the entire value chain and cable lifecycle, Nexans were successful in reducing greenhouse gas emissions in its low and medium-voltage cables by 35% to 50%. Thus, launching an energy intensive range of cables.

#### Governments Regulations for Wires and Cables

Government regulations play a crucial role in ensuring the quality, safety, and reliability of wires and cables by setting rigorous standards for insulation, materials, and manufacturing processes. These regulations facilitate the production of durable and dependable cables and significantly reduce the risk of electrical fires and accidents. Moreover, they address deceptive cable labeling and certification, preventing misleading product claims. International organizations like the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO) further strengthen the industry's commitment to quality and safety by developing and publishing global standards for wires and cables. These standards encourage compatibility and interoperability across electrical and data networks, ultimately enhancing efficiency and minimizing environmental impact. In addition, adherence to these standards drives technological innovations, leading to the development of energy-efficient cables that reduce waste.

The National Electrical Safety Code (NESC) published by the IEEE Standards Association and approved by ANSI sets electrical safety standards worldwide. Its 2023 edition focuses on outdoor lines connecting homes and businesses, electric supply stations, and telecommunications plants, with amendments like exceptions for short-circuit protection under 1000V and new rules for photovoltaic generating stations ensuring safety for electric and telecom utilities. These updates are scheduled to come into effect from 1st February 2023.

#### Rising Internet and Telecom Connectivity Drive Wires and Cables Market

The worldwide demand for telecommunications cable is surging as global internet connectivity. As of 2022, 5.3 billion people were using the Internet accounting for 66% of the world's population. The surge is facilitated by telecom cables and optical fibers, crucial components for enabling high speed data transfer and exchange. With the increase in online learning, remote work, and

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the thriving e-commerce sector the world is accelerating towards digitization, and advance technologies such as IoT, blockchain, AI, and VR rely on stable and faster internet connectivity. The ever-expanding digital landscape, combined with the integration of these transformative technologies, propels the wires and cables market, positioning it as a fundamental pillar of the modern connected world.

In September 2023, Sumitomo Electric launched the world's first mass-produced ultra-low loss multi-core fiber, "2C Z-PLUS Fiber ULL." This innovative fiber, with two cores within the same dimensions as a standard single-core fiber, doubles the transmission capacity and offer excellent environmental reliability and mechanical stability. It offers a wide range of applications in submarine network systems, long-haul terrestrial transmission, and inter-datacenter networks.

#### Major Power and Connectivity Projects Drive the Market Growth

The global gap in power and internet access has initiated a collaborative effort from both public and private entities to reduce these disparities. Various initiatives are underway address global connectivity disparities such as the SEA-ME-WE 6 cable system, the 19,200 km venture from Singapore to France, that employs SDM technology and is backed by a consortium of over 10 prominent companies, including China Unicom, Djibouti Telecom, Mobily, and more. Similarly, China led PEACE project, entails a 15,000 km submarine cable connecting Pakistan to France by incorporating advanced transmission technology. These projects extend beyond internet connectivity to power generation and distribution with Xlinks pioneering renewable energy transmission through an undersea cable and delivering North African wind and solar power to the UK's southwestern region. These ambitious endeavors significantly contribute to the cables market while fostering global connectivity and sustainability goals.

In October 2023, Hellenic Cables, a division of Cenergy Holdings, contracted with Seaway7 for the East Anglia THREE offshore windfarm. It will provide about 275 km of 66kV three-core Inter Array submarine cables and related accessories, with production starting in 2024.

#### Impact of COVID-19

The COVID-19 pandemic significantly impacted the global energy market, with its ripples felt across the wires and cables market. Disruptions in the supply chain due to the pandemic resulted in shortages of raw materials and components, affecting manufacturing. Many factories temporarily closed or operated at reduced capacity because of lockdowns and safety precautions. Furthermore, numerous construction and infrastructure projects faced delays, affecting cable demand. However, the wires and cables used in telecommunications experienced high demand due to an increase in remote work, online learning, e-commerce, and digital entertainment such as virtual reality made possible with reliable internet and data connections. As businesses increasingly shifted online, cables played a crucial role in connecting products and services thus boosting the wires and cables market.

For instance, looking at the rising demand for wires and cables, NKT entered a long-term pact with Polish copper provider KGHM S.A. in August 2023, to ensure a stable copper supply for its power cable production. The agreement entails an annual minimum of 52,500 tons of copper wire rod from 2023 to 2027, with options for extension and increased quantities. The copper supply is pivotal for NKT's growth plans.

#### Impact of Russia-Ukraine War

The ongoing Russia-Ukraine conflict has a profound global impact on the wires and cables market. Sanctions imposed on Russia have disrupted the supply chain, affecting the global production and delivery of metals like copper and aluminum to be used in wires and cables production. In Russia power cables hold the largest share of its cable production, the conflict's repercussions have extended to key Russian wires and cables export destinations like Kazakhstan and Belarus.

Cable manufacturers with operations in Ukraine, such as Leoni, Nexans, and TFKabel, have been confronted with challenges and current geopolitical uncertainties have led to the postponement of numerous infrastructural and undersea connectivity and power projects, creating disruptions in the market. Furthermore, existing undersea power and connectivity lines have become collateral in the conflict. Considering this, the European Union is actively exploring alternatives to ensure energy and data security along with striving for increased independence and resilience in this complex geopolitical landscape. The ongoing situation has triggered significant adaptations and shifts in the wires and cables market to navigate the challenges arising from this conflict.

In September 2022, Corning Incorporated inaugurated a new optical fiber production facility in Mszczonow, Poland, to address the increasing need for high-speed connectivity in the European Union and neighboring areas. This facility, among the largest optical fiber plants in the European Union, represents Corning's ongoing global investments in fiber and cable manufacturing, totaling

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over USD 500 million since 2020, in response to rising demand and substantial customer commitments.

#### Key Players Landscape and Outlook

The wires and cables industry are characterized by ongoing innovation and substantial investments in research and development. The building construction and infrastructure sectors are driving the need for improved, flexible, and fire-resistant wires and cables. In the power generation and transmission industry, there's a growing demand for energy-efficient cables that minimize losses. The rise of technologies like 5G is spurring advancements in material science, leading to the development of sophisticated fiber optic and hybrid cables. These developments collectively propel the wire and cable market, addressing evolving industry requirements and expanding the market's scope.

In September 2023, Southwire Company, LLC successfully acquired Genesis Wire & Cable. The strategic move enhances Southwire's product portfolio and aligns with its long-term strategy and margin objectives. Genesis brings expertise in low-voltage wire and cable production, facilitating Southwire's expansion into evolving markets, particularly in Security and HVAC sales channels.

In July 2023, CommScope's announced expansion project in North Carolina with USD 60.3 million investment, the expansion is scheduled over four years. The expansion will significantly increase cable production capacity, specifically focusing on cables for rural Fiber-to-the-Home (FTTH) deployments. These plans align with the United States government's efforts to expand internet access in underserved areas and enhance production capacity over the next four years.

#### Table of Contents:

1. Research Methodology
2. Project Scope & Definitions
3. Impact of COVID-19 on Global Wires and Cables Market
4. Impact of Russia-Ukraine War
5. Executive Summary
6. Voice of Customer
  - 6.1. Market Awareness and Product Information
  - 6.2. Factors Considered in Purchase Decision
    - 6.2.1. Cost
    - 6.2.2. Installation Requirements
    - 6.2.3. Voltage Range
    - 6.2.4. Regulations and Standards
    - 6.2.5. Wear and Fire resistance
    - 6.2.6. After Sales Support
    - 6.2.7. Brand
7. Global Wires and Cables Market Outlook, 2017-2031F
  - 7.1. By Installation
    - 7.1.1. Overhead
    - 7.1.2. Underground
    - 7.1.3. Submarine
  - 7.2. By Voltage
    - 7.2.1. Low Voltage
    - 7.2.2. Medium Voltage
    - 7.2.3. High Voltage
    - 7.2.4. Extra High Voltage
    - 7.2.5. Ultra-High Voltage
  - 7.3. By Material Used
    - 7.3.1. Aluminium
    - 7.3.2. Copper

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- 7.3.3.□Fiber Optics
- 7.3.4.□Others
- 7.4.□By End-user
  - 7.4.1.□Residential
  - 7.4.2.□Commercial
  - 7.4.3.□Industrial
  - 7.4.4.□Utility
- 7.5.□By Region
  - 7.5.1.□North America
  - 7.5.2.□Europe
  - 7.5.3.□South America
  - 7.5.4.□Asia Pacific
  - 7.5.5.□Middle East & Africa
- 7.6.□By Company Market Share (%), 2023
- 8.□Global Wires and Cables Market Outlook, By Region, 2017-2031
  - 8.1.□North America\*
    - 8.1.1.□Market Size & Forecast
      - 8.1.1.1.□By Value
      - 8.1.1.2.□By Volume
    - 8.1.2.□By Installation
      - 8.1.2.1.□Overhead
      - 8.1.2.2.□Underground
      - 8.1.2.3.□Submarine
    - 8.1.3.□By Voltage
      - 8.1.3.1.□Low Voltage
      - 8.1.3.2.□Medium Voltage
      - 8.1.3.3.□High Voltage
      - 8.1.3.4.□Extra High Voltage
      - 8.1.3.5.□Ultra-High Voltage
    - 8.1.4.□By Material Used
      - 8.1.4.1.□Aluminium
      - 8.1.4.2.□Copper
      - 8.1.4.3.□Fiber Optics
      - 8.1.4.4.□Others
    - 8.1.5.□By End-user
      - 8.1.5.1.□Residential
      - 8.1.5.2.□Commercial
      - 8.1.5.3.□Industrial
      - 8.1.5.4.□Utility
    - 8.1.6.□By Type
    - 8.1.7.□By Region
  - 8.2.□United States\*
    - 8.2.1.□Market Size & Forecast
      - 8.2.1.1.□By Value
      - 8.2.1.2.□By Volume
    - 8.2.2.□By Installation
      - 8.2.2.1.□Overhead

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- 8.2.2.2. □ Underground
  - 8.2.2.3. □ Submarine
  - 8.2.3. □ By Voltage
    - 8.2.3.1. □ Low Voltage
    - 8.2.3.2. □ Medium Voltage
    - 8.2.3.3. □ High Voltage
    - 8.2.3.4. □ Extra High Voltage
    - 8.2.3.5. □ Ultra-High Voltage
  - 8.2.4. □ By Material Used
    - 8.2.4.1. □ Aluminium
    - 8.2.4.2. □ Copper
    - 8.2.4.3. □ Fiber Optics
    - 8.2.4.4. □ Others
  - 8.2.5. □ By End-user
    - 8.2.5.1. □ Residential
    - 8.2.5.2. □ Commercial
    - 8.2.5.3. □ Industrial
    - 8.2.5.4. □ Utility
  - 8.2.6. □ Canada
  - 8.2.7. □ Mexico
- \*All segments will be provided for all regions and countries covered
- 8.3. □ Europe
    - 8.3.1. □ Germany
    - 8.3.2. □ France
    - 8.3.3. □ Italy
    - 8.3.4. □ United Kingdom
    - 8.3.5. □ Russia
    - 8.3.6. □ Netherlands
    - 8.3.7. □ Spain
    - 8.3.8. □ Turkey
    - 8.3.9. □ Poland
  - 8.4. □ South America
    - 8.4.1. □ Brazil
    - 8.4.2. □ Argentina
  - 8.5. □ Asia-Pacific
    - 8.5.1. □ India
    - 8.5.2. □ China
    - 8.5.3. □ Japan
    - 8.5.4. □ Australia
    - 8.5.5. □ Vietnam
    - 8.5.6. □ South Korea
    - 8.5.7. □ Indonesia
    - 8.5.8. □ Philippines
  - 8.6. □ Middle East & Africa
    - 8.6.1. □ Saudi Arabia
    - 8.6.2. □ UAE
    - 8.6.3. □ South Africa

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- 9.□Market Mapping, 2023
  - 9.1.□By Installation
  - 9.2.□By Voltage
  - 9.3.□By Material Used
  - 9.4.□By End-user
  - 9.5.□By Region
- 10.□Macro Environment and Industry Structure
  - 10.1.□Supply Demand Analysis
  - 10.2.□Import Export Analysis - Volume and Value
  - 10.3.□Supply/Value Chain Analysis
  - 10.4.□PESTEL Analysis
    - 10.4.1.□Political Factors
    - 10.4.2.□Economic System
    - 10.4.3.□Social Implications
    - 10.4.4.□Technological Advancements
    - 10.4.5.□Environmental Impacts
    - 10.4.6.□Legal Compliances and Regulatory Policies (Statutory Bodies Included)
  - 10.5.□Porter's Five Forces Analysis
    - 10.5.1.□Supplier Power
    - 10.5.2.□Buyer Power
    - 10.5.3.□Substitution Threat
    - 10.5.4.□Threat from New Entrant
    - 10.5.5.□Competitive Rivalry
- 11.□Market Dynamics
  - 11.1.□Growth Drivers
  - 11.2.□Growth Inhibitors (Challenges, Restraints)
- 12.□Key Players Landscape
  - 12.1.□Competition Matrix of Top Five Market Leaders
  - 12.2.□Market Revenue Analysis of Top Five Market Leaders (in %, 2023)
  - 12.3.□Mergers and Acquisitions/Joint Ventures (If Applicable)
  - 12.4.□SWOT Analysis (For Five Market Players)
  - 12.5.□Patent Analysis (If Applicable)
- 13.□Pricing Analysis
- 14.□Case Studies
- 15.□Key Players Outlook
  - 15.1.□Prysmian S.p.A.
    - 15.1.1.□Company Details
    - 15.1.2.□Key Management Personnel
    - 15.1.3.□Products & Services
    - 15.1.4.□Financials (As reported)
    - 15.1.5.□Key Market Focus & Geographical Presence
    - 15.1.6.□Recent Developments
  - 15.2.□NKT A/S
  - 15.3.□Nexans S.A.
  - 15.4.□LS Cable & System Co., Ltd.
  - 15.5.□Sumitomo Electric Industries, Ltd.
  - 15.6.□Hitachi Cable, Ltd.

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15.7. KEI Industries Ltd.

15.8. Shanghai Electric Cable Co., Ltd.

15.9. Amphenol Corporation

15.10. EIS Wire & Cable, Inc.

\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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