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INDUSTRY OUTLOOK

CABLES AND WIRES INDUSTRY: GAINING TRACTION BUT CHALLENGES PERSIST

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Introduction

The cables and wires industry in India is a vital component of the country's infrastructure development, supporting various sectors such as power, telecommunications, construction, transportation, and EV infrastructure^{1 2 3}. The cables and wires industry is broadly classified into power and telecom cables. Power cables are further categorized into aluminum conductors, polyvinyl chloride (PVC)-insulated cables, and rubber-insulated cables. Telecom cables are categorized as jelly-filled cables and fiber optic cables.



The market valuation of electrical wires & cables, which was US\$ 6.6 billion (2024), is projected to reach US\$ 10.9 billion by 2033 with ~5.8 per cent CAGR⁴. The market valuation of power cables, which was US\$ 6.1 billion in 2024, is likely to surge to US\$ 9.5 billion by 2033 (CAGR ~5 per cent)⁵. The market valuation of telecom cables, which was US\$ 1.8 billion in 2024, is expected to reach US\$ 2.9 billion by 2033 (CAGR ~5.3 per cent)⁶. The overall estimated cable market, which was estimated at US\$ 21+ billion (2025), is expected to rise with a CAGR of 2030–33⁷. Rapid urbanization, electrification, renewable energy push, 5G/data networks, and smart infrastructure are likely to be the main catalysts for this steady growth.

The demand for power cables is driven by sectors, such as electricity generation, real estate, and public infrastructure like railways and highways, whereas the demand for telecom cables is driven by sectors, such as telecommunication and electronics. The power and telecom sectors are significant consumers of cables and wires in India. The power sector requires cables for transmission and distribution of electricity, while the telecom sector uses cables for network infrastructure. The demand for power cables is driven by the country's growing power generation capacity, while the increasing demand for high-speed internet and data services drives telecom cables.

The output of the wire and cables industry is expected to grow in 2025-26, driven by healthy demand from user industries. Additionally, rising exports amid strong global demand for power cables will also support production. Government initiatives like Pradhan Mantri Awas Yojana (PMAY), Smart Cities Mission, rural electrification, and Bharat Net Phase III are expected to pick up pace. This will generate strong demand for various types of wires and cables. The margins are projected to expand by 100 to 200 basis points as compared to the year-ago period.

The Classification				
Category	Туре	Description	Common Uses	
Wires	Single-Core Wire	One conductor (copper/aluminum) with insulation	Low-voltage circuits, internal wiring	
	Multi-Core Wire	Two or more insulated conductors bundled together	Appliances, control panels, machines	
	Stranded Wire	Multiple thin strands twisted for flexibility	Areas with vibration/movement (automotive)	
	Solid Wire	One solid conductor, less flexible but better conductivity	Domestic wiring, fixed installations	
Cables (by structure)	Twisted Pair Cable	Two insulated wires twisted to reduce EMI	Telephone lines, Ethernet (LAN)	
	Coaxial Cable	Central conductor, insulation, metal shield, outer cover	Cable TV, CCTV, broadband internet	
	Fiber Optic Cable	Glass/plastic fibers transmitting light signals	High-speed internet, telecom networks	
	Shielded Cable	Cable with a metallic shielding layer to block interference	Industrial or noisy environments	
	Ribbon Cable	Flat cable with parallel wires, easy to route in tight spaces	Computers, printers, electronics	
	Power Cable	Designed for high voltage, well insulated, and often armored	Electrical power distribution	
Cables (by insulation)	PVC (Polyvinyl Chloride)	Common, flame-retardant, flexible insulation	General electrical wiring	
	XLPE (Cross- linked Polyethylene)	Heat-resistant and durable insulation	High-voltage applications	
	Teflon (PTFE)	Heat and chemical-resistant insulation	Aerospace, industrial machinery	



Special Cables	Romex (NM) Cable	Non-metallic sheathed, used in the U.S. for residential wiring	Interior home electrical circuits
	Flexible Cable (Flex)	Easily bendable, used in moving equipment	Appliances like washing machines
	Armored Cable (BX)	Cable with metal sheath for mechanical protection	Underground, industrial, or exposed areas

Source: Compiled from technical specifications and usage guidelines found in Belden product catalogs and the National Electrical Code (NEC), NFPA 70.

Higher Infrastructure Outlay

The Indian government's infrastructure outlay has been increasing steadily, with an accent on developing roads, bridges, railways, and other critical infrastructure projects. This has led to a surge in demand for cables and wires, particularly in the power and telecom sectors. India's planned infrastructure spending for fiscal 2026 is set to surge significantly, with a combined outlay of approximately \gtrless 9.12 lakh crore across key sectors, including power, railways, and real estate.⁸ This represents a 25 per cent increase over the previous year and indicates a strong public and private sector commitment to long-term infrastructure creation. Next, we look at how different sectors of the industry drove the progress of the cables and wires domain.

Indian Electrical Industry

The electrical industry in India is a significant consumer of cables and wires, driven by the growing demand for electrical equipment and appliances. The industry is expected to grow at a CAGR of 10-12 per cent over the next few years, driven by increasing electrification, urbanization, and industrialization.

The cables and wires industry accounts for approximately 39 percent of the electrical industry and plays a vital role in construction and infrastructure activities. According to the KEI Industries report, India's wires and cables market has grown considerably from ₹859 billion in FY19 to ₹1,702 billion in FY24, with a CAGR of 14.7 percent during this period. Additionally, the sector is expected to grow at a CAGR of 11 to 13 percent between FY24 and FY29E, driven by power generation and transmission, railways, and real estate in domestic markets (over 90 percent of revenues), along with support from the China+1 strategy adopted by some countries.⁹

Government initiatives like "Power for All," smart cities, and the expansion of high-speed internet networks are boosting demand for advanced cables in power transmission and telecommunications. India's ambitious targets for solar and wind energy capacity expansion necessitate efficient power transmission infrastructure, increasing the demand for specialized cables.¹⁰



Power sector

The power industry in India is a critical sector that drives the demand for cables and wires. The country's power generation capacity has been increasing steadily, with a focus on renewable energy sources, such as solar and wind power. This has led to a surging demand for power cables and other electrical equipment. As of March 2024, India had ~818,000 circuit-km of HV lines (66 kV+), plus ~14 million circuit-km of lower-voltage lines. As of March 2024, India had ~818,000 circuit-km of HV lines (66 kV+), plus ~14 million circuit-km of lower-voltage lines.

Government schemes like Saubhagya, DDUGJY, RDSS, and Green Energy Corridors are aggressively funding grid modernisation, including underground cabling. Renewables and smart grids demand specialized cables, from high-voltage AC and DC to fibre-integrated cables for monitoring¹¹.

Telecom cables and digital infrastructure growth have altered the ground realities in India. BharatNet, Digital India, and 5G deployments are driving a massive rollout of fibre— 1.17 million FTTH connections in 2024¹². By 2030, National Broadband Mission 2.0 aims to connect 270,000 villages, 90 per cent anchor institutions, and boost broadband speeds to \geq 100 Mbps. But only ~35 per cent of 469,000 5G towers are fibre-connected, which reveals significant potential ahead. The operation of the market forces is reflected in the fibre-optic cable CAGR at ~10–12 per cent; there is an increasing demand for ribbon, bend-insensitive cables for smart cities and data centers¹³.

Pathway to the Future

The power industry in India is a critical sector that drives the demand for cables and wires. The country's power generation capacity has been increasing steadily, with a focus on renewable energy sources, such as solar and wind power. This has led to a surging demand for power cables and other electrical equipment. In the power sector, the government aims to add 45 to 55 GW of generation capacity. This includes a mix of renewable energy (solar, wind, hydro) and conventional sources.

Such an expansion requires large-scale deployment of extra high voltage (EHV) and low-voltage (LV) cables for both generation and distribution infrastructure. Simultaneously, around 10,000 km of interstate transmission lines are planned, which will further require high-capacity cables, conductors, and advanced transmission systems to handle load flow and stability over long distances.



Rs. million : Jun 2013 to Mar 2026 Rs. million 300,000 250,000 200.000 150,000 100,000 50,000 Jun 2013 Jun 2015 Jun 2017 Jun 2019 Jun 2021 Jun 2023 Quarter ended Value of projects commissioned Centre for Monitoring Indian Economy Pvt. Ltd., 31 Dec 2024

Value of Projects Commissioned: Electricity Transmission Industry

The project completions in the electricity transmission industry were expected to pick up from the December quarter onwards after two sluggish quarters in 2024-25. Projects worth ₹ 31.7 billion were expected to be completed in the December 2024 quarter, followed by ₹ 44.3 billion in the March 2024 quarter.

Digital Infrastructure Growth

The growth of digital infrastructure in India has been rapid, driven by increasing demand for high-speed internet and data services. This has led to a steep hike in demand for telecom cables and other digital infrastructure equipment across sectors like data centers, telecom, and urban development. The rise of data centers, such as the initiative by the Tripura government to integrate AI and 5G, is creating strong demand for power and high-speed data cabling.¹⁴ The smart city projects and the push for digital connectivity have accelerated the structured cabling market, which is projected to grow at a CAGR of 12.8 per cent, reaching US\$ 1,505 million by 2030. Bengaluru's transition from overhead to underground cabling with integrated optical fiber ducts showcases urban innovation in power and telecom infrastructure.¹⁵

On a global scale, India is part of massive undersea cable projects like Meta's "Project Waterworth," which will be the world's longest subsea cable system, linking the US, India, and more.¹⁶ More than 95 per cent of the world's internet traffic is transferred through undersea cables.

Automobile Industry

The automobile industry in India is a significant consumer of cables and wires, driven by the growing demand for vehicles. The industry is expected to grow at a CAGR of 10-12 per cent over the next few years, driven by increasing demand for passenger and commercial vehicles. India's automobile industry has grown significantly, reaching ₹ 22 lakh crore, and achieved a 9 per cent sales growth in 2024, with 26.1 million units sold.



At present, the US automobile industry is valued at ₹ 78 lakh crore, followed by China at ₹ 47 lakh crore. The electric vehicle market experienced a surge, with sales reaching 1.408 million units, driven by initiatives such as FAME I and II. India, now a global leader surpassing Japan, exports 50 per cent of its two-wheelers and aims to generate 4 crore jobs.

India's automotive sector is significantly boosting the demand for wires and cables, driven by the rapid adoption of electric vehicles (EVs), government incentives, and advancements in vehicle electronics. Exicom targets ~₹5 billion EV charger revenue by 2030 (~50 per cent of its turnover)¹⁷.

EVs require more extensive wiring systems than traditional vehicles to support high-voltage power distribution, battery management, and advanced electronic controls.

India aims to electrify ~ 30 per cent of vehicles by 2030. Some of the key aspects of India's EV ecosystem and its cable intensity relate to EV charging infrastructure, battery storage, grid integration, and policy and planning¹⁸.

The automotive wiring harness market in India is projected to grow from US\$ 4.93 billion in 2024 to US\$6.25 billion by 2035, reflecting a CAGR of approximately 2.18 per cent during the forecast period.¹⁹ This growth is also supported by the government's focus on developing EV infrastructure and encouraging the use of advanced technologies in vehicles.

As industry evolves, the demand for high-quality, efficient, and durable wiring systems is expected to rise, providing opportunities for manufacturers and suppliers in the wire and cable market. OEMs plan massive charger rollouts with Tata expanding to 400,000 points by 2027 (30,000 public + 500 "Mega Chargers")²⁰, Maruti expanding to 1,500 chargers at service centres and home installations, and Hyundai, MG, fuel PSUs planning similar expansions²¹.

EV Adoption & Charging Infrastructure

The adoption of electric vehicles (EVs) in India is gaining momentum, driven by government incentives and growing environmental concerns. The EV policy incentivizes local factory creation (charging capped at 5 per cent expense), with the focus remaining on vehicle manufacturing. This has led to a growing demand for EV charging infrastructure, including cables and wires, both inside vehicles and across the expanding charging infrastructure²².

India's electric vehicle (EV) charging industry will require approximately $\gtrless16,000$ crore (around US\$ 2 billion) in capital expenditure over the next five years to build out the necessary public charging infrastructure to meet its 2030 electrification goals, according to a FICCI report. This investment is crucial for achieving the target of over 30 per cent electrification by 2030, with a focus on prioritizing infrastructure in the top 40 cities and 20 highway stretches²³.



EVs require three times more wiring than conventional vehicles due to high-voltage power systems and advanced electronic components. At the same time, the rapid rollout of charging networks driven by policies like Delhi's plan for charging stations every 5 km and the national PM E-Drive scheme to install 72,000 charging stations demands extensive cabling for power and data transmission.²⁴ Companies like Delta Electronics and Eaton are developing fast chargers (60 to 350 KW), fueling local manufacturing and export potential. This transition is also pushing domestic copper consumption, critical for both EVs and their infrastructure. Together, these developments are turning EV adoption into a strong growth engine for India's wires and cables industry.

Railways

The Indian Railways is a significant consumer of cables and wires, driven by the need for electrification and signalling systems. With Indian Railways: 95 per cent electrification; accelerating freight capacity to 45 per cent by 2030 under the National Rail Plan, the Railways' modernization plans are expected to drive demand for cables and wires in the coming years.

The railway and metro projects are key contributors to the growth and structural transformation of this industry. The Indian Railways is undergoing electrification, station redevelopment, and speed upgrades on major routes. Metro rail systems in tier-1 and tier-2 cities are expanding, demanding specialized railway signaling, communication, and power cables. These projects alone are set to consume a substantial share of the wires and cables output due to the complexity and scale of electrical installations in transport infrastructure.

Indian Railways is extensively upgrading its signaling and security systems, with a significant focus on the deployment of advanced cables and wires. The Signal & Telecom Department is responsible for providing basic telecommunications facilities for the vast transport system of the Railways. To enhance safety and reliability, the department is transitioning from traditional 4 Quad cables to Optical Fiber Cables (OFC) in various sections, such as the Ranchi Division, where Universal Failsafe Block Interface (UFSBI) equipment has been installed in 26 block sections.²⁵

In terms of security, Indian Railways has implemented IP-based Video Surveillance Systems (VSS) across stations, ticket counters, and reservation areas to ensure passenger safety. These systems rely on robust cabling infrastructures to function effectively. The Kavach system, an indigenous Automatic Train Protection (ATP) system²⁶, is also being deployed to prevent train collisions. This system utilizes advanced cabling for communication between trains and trackside equipment, ensuring real-time data exchange and operational safety. Furthermore, Indian Railways has adopted the GSM-R-based Mobile Train Radio Communication system, covering 2,461 route kilometers, to facilitate seamless communication between train drivers and control centers. This system's effectiveness is heavily dependent on a reliable cabling network.



The modernization efforts of Indian Railways in signaling and security systems are intrinsically linked to the deployment of advanced cables and wires, which are critical for ensuring safety, reliability, and efficient communication across the railway network. Multibillion-dollar metro/urban rail project pipelines require extensive control, signalling, and overhead cables.

Real Estate

The real estate sector in India is a significant consumer of structured cabling and building wires, driven by the growing demand for residential and commercial buildings. The sector is expected to grow at a CAGR of 10-12 per cent over the next few years, driven by increasing urbanization, affordable housing schemes, commercial spaces, urban redevelopment, and infrastructure development. Residential projects consume low-voltage wires extensively for internal wiring, power distribution, and fire-resistant installations. The real estate sector saw impressive growth momentum with housing sales reaching an 11-year high in the first half of 2024-25. Power generation and distribution projects worth \gtrless 296 billion were completed during the September 2024 quarter as compared to \gtrless 40.6 billion in the September 2023 quarter.



Altogether, these infrastructure investments are estimated to generate wires and cables demand worth \gtrless 20,000 crore in fiscal 2026, according to industry estimates. This represents not just quantitative growth, but also a qualitative shift towards safer, more energy-efficient, and high-performance cable products. The trend underscores how closely the fortunes of the electrical cables and wires industry are linked to India's national infrastructure trajectory.²⁷

Residential sector

The residential sector in India is a significant consumer of cables and wires, driven by the growing demand for housing and infrastructure development. Rapid housing and smart building growth in Tier 1/2 cities is fuelling demand for low-voltage wires and in-building



cabling. LSZH, FRLS, and smart wiring system adoption provide an impetus to the growth of this sector. In terms of cable market share, the residential contributes ~33 per cent (2024); with IT and telecom being the fastest growing (~10 per cent CAGR).

The sector is expected to grow at a CAGR of 12-15 per cent over the next few years, driven by increasing urbanization and government initiatives like "Housing for All" and the Smart Cities Mission. These initiatives are speeding up residential construction, which increases the demand for electrical wiring solutions. The move toward high-rise buildings and smart homes requires advanced cabling systems to handle complex electrical and networking needs. The Smart Cities Mission has played a key role in this growth, with over 8,000 projects launched across 100 cities, totaling investments of ₹ 1.64 lakh crore. These projects include laying electrical cables and developing telecom infrastructure, directly boosting the need for wires and cables in residential areas.

The Pradhan Mantri Awas Yojana (PMAY), part of the "Housing for All" initiative, aims to provide affordable housing for the urban poor. This initiative has led to the construction of millions of residential units, each requiring extensive electrical wiring and cabling, thus supporting the wire and cables industry. The Bureau of Indian Standards (BIS) has set strict quality standards for electrical cables used in residential buildings, ensuring safety and reliability. These standards specify certain grades and markings for cables, affecting how wiring materials are made and chosen in the housing sector.

Additionally, there is an increasing focus on fire-resistant and low-smoke cables in homes to improve safety. The use of eco-friendly and halogen-free cables is also rising, aligning with sustainable building practices.²⁸

Higher Exports and Global Positioning

India's domestic fibre output exceeds 100 m fibre-km (FY24), making it a net exporter. Cable makers like Sterlite, Finolex, West Coast Optilinks, and RR Kabel are entering global markets with premium products. "China+1" supply chain shift favours India in cables & wires manufacturing and provides tailwinds to this industry. Accordingly, India's cables and wires industry has significant export potential, driven by the country's competitive manufacturing costs and quality products. The industry is expected to increase its exports to various countries, including those in Asia, Europe, and Africa.

India has consistently been a net exporter of wires and cables since FY20, registering an export surplus peak of ₹ 59.5 billion during the April-October 2023 period, highlighting its ability to cater to growing global demand. Key drivers in international markets include the push for renewable energy, electric vehicle adoption, and the modernization of power grids. Additionally, exports grew 25 per cent YoY in October 2025 and 8 per cent YoY during April-October 2024.²⁹



Despite setbacks in 1HFY25 due to logistical issues and demand slowdowns, a recovery is underway, with mid-teens growth anticipated for 3QFY25. India has benefited from competitive pricing, international compliance, and diversified offerings. It has established a strong foothold with a 44 per cent CAGR in exports to the U.S. between FY17 and FY24.³⁰



Production

Aluminum Conductors

Aluminum conductors are high-strength stranded conductors used in overhead power transmission & distribution lines and railway lines. Aluminum is generally preferred over copper to transmit high-voltage currents over long distances through overhead lines. The non-ferrous metal is durable and cheaper and can withstand harsh weather conditions in comparison to copper.



Looking ahead, the wire and cables industry is likely to remain sensitive to fluctuations in copper and aluminum prices. The sharp price corrections witnessed between May and August 2024, with a 3-7 per cent month-on-month decline, had previously led to de-stocking and frequent selling price adjustments.



Although producers lowered prices to boost volumes amid improving demand in the latter part of the quarter, higher input costs and weaker realizations compressed margins.

Going forward, price volatility will be a persisting key risk to profitability. However, the outlook for aluminum conductors remains strong. Aluminum's cost efficiency, durability, and suitability for high-voltage, long-distance overhead lines make it the preferred choice over copper. With transmission infrastructure development exceeding targets -5,117 circuit kilometers (ckm) added in the first eight months of FY25 versus the planned 4,981 ckm - and a full-year target of 15,253 ckm (as per CMIE), the Railways' sector is poised for sustained growth, driving demand for aluminum-based power cables.

Indian Railways has expanded electrification across several states this fiscal, boosting the need for aluminum conductors used in Overhead Line Equipment (OHLE). With significant electrification work still underway, demand is expected to remain strong, prompting manufacturers to ramp up production. As a result, aluminum conductor output is likely to see steady growth in the coming months.

Polyvinyl Chloride (PVC) Insulated Cable

India, the third largest cable market globally, consumed a total of 1,266 kt of insulated metallic wire and cable in 2023, comprising almost 6 per cent of world consumption, only behind China (42 per cent) and the US (9 per cent). India's insulated metallic wire and cable demand was expected to grow 7.8 per cent yoy in 2024 and to exhibit healthy growth of 6.4 per cent CAGR between 2023–2028.³¹ PVC wires are one of the most common types of power cables used in the real estate industry.

Around ₹ 521.9 billion worth of real estate projects were expected to be completed in the last two quarters compared to ₹ 228 billion in the first two quarters of 2024- 2024. These investments stimulated higher demand for low voltage insulation and building wires during the year.





Rubber-Insulated Cables

Rubber-insulated cables are widely used for applications requiring flexibility, heat resistance, and durability, like industrial tools, instrumentation, and heavy-duty handling. Rubber-insulated cables are expected to see steady demand growth in India, anchored by industrial and infrastructure needs, with active export markets. Manufacturers who optimize costs and meet compliance can capture both domestic and international growth opportunities.

The rubber insulated cables production grew by almost 40 per cent YoY in FY24. It is expected to grow by 19 to 20 per cent YoY in the current fiscal.



Telecom cables

India is poised to become a global hub for submarine telecom cable networks, driven by its strategic location, growing digital economy, and the increasing demand for low-latency global connectivity. The country currently hosts 17 international undersea cables through 14 landing stations in cities like Mumbai, Chennai, Kochi, Tuticorin, and Trivandrum, with operators such as Tata Communications, Global Cloud Exchange, Sify Technologies, Vodafone, Bharti Airtel, and BSNL playing key roles. Airtel recently landed the 21,700-km SEA-ME-WE-6 cable in Chennai, its second Indian landing after Mumbai, enhancing global network resilience.

Meanwhile, Meta's Project Waterworth aims to build the world's longest 50,000-km undersea cable connecting five continents, with India as a major node. With 99 per cent of global internet traffic relying on submarine cables and India's data consumption surging, the country is seeing increased investment in landing infrastructure and data centers. This positions India to offer scalable, low-cost, and high-capacity connectivity to international players, reinforcing its potential to lead the next phase of global digital infrastructure.³²

Telecom cables are categorized as jelly-filled cables and fiber optic cables. Production is shown in the figures above. Fiber-optic cables are the fastest-growing product driven by 4G/5G rollout, IoT/smart-city infrastructure, and rising broadband demand.



This growth is largely driven by initiatives such as the National Broadband Mission 2.0 (launched January 17, 2025), which plans to extend fiber-optic connectivity to 270,000 villages by 2030.





The sector's production is shown in the following figures as per their per cent change YoY.

Source: CMIE, Infomerics research.



Top Market Players

The domestic cables and conductors' market in India is intensely competitive, characterized by the presence of numerous players ranging from large, organized manufacturers to smaller regional firms. This crowding is a direct result of the strong government, thrust on infrastructure development, electrification, housing, smart cities, renewable energy, and EV adoption. Schemes like Saubhagya, Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY), and PM Awas Yojana have significantly boosted demand for low-voltage and high-voltage cables, attracting new entrants and encouraging capacity expansion among existing players. While this has increased choices and reduced costs for project developers, it has also led to pricing pressure, particularly in the unorganized sector, where quality compliance varies. As the sector matures, players with strong R&D, wide distribution, and adherence to BIS standards are likely to gain a sustainable edge.



Source: Infomerics research

Polycab's Cables & Wires segment is set to benefit from the strong demand expected from power Transmission & Distribution (T&D), growth in private capex and real estate sector. It holds the largest market share, estimated at 20-22 per cent, in the organized sector. The company has demonstrated robust financial performance, with a 33 per cent YoY profit increase in Q4 FY25, reaching ₹ 727 crore. Polycab is investing in expanding its Extra High Voltage (EHV) product line and enhancing its distribution network to capitalize on the growing demand from sectors like real estate, power, and electric vehicles. The company's strategic focus on innovation and infrastructure positions it well for sustained growth.

KEI Industries (KEII) is a leading player in India's Cable and Wire (C&W) industry, poised for strong growth driven by capacity expansion, retail focus, and export opportunities. KEI Industries Ltd commands a market share of approximately 9 to 10 per cent and is recognized for its capabilities in EHV cables and institutional projects. The company reported a 34 per cent increase in net profit for Q4 FY25, driven by strong revenue growth in its cable and wire segments. KEI is expanding its distribution network and targeting new markets in Africa and



Southeast Asia, aiming to leverage government initiatives in power transmission and urban infrastructure to fuel its growth.

Havells, though widely known for its consumer durables, has a strong footprint in the cables and wires segment through its electrical division. In Q4 FY25, the standalone revenue from its cable business grew by 21 per cent YoY to ₹ 2,169 crore. Its appliance brand "Lloyd" also delivered strong results, growing 39.5 per cent YoY in the same quarter. However, the stock experienced some downward pressure (5-13 per cent decline) following the announcement of Adani's venture into the cable industry, indicating that investors are wary of increased competition. While the company benefits from a diversified portfolio, including lighting and appliances, analysts have expressed caution about possible weakening demand for air conditioners and intensifying pricing pressure in the cables segment. Technically, Havells' stock has shown weakness, slipping below key moving averages earlier in the year, though long-term fundamentals remain intact.

RR Kabel Ltd. is a fast-growing player in India's cables and wires industry, with strong export presence—around 25 per cent of its revenue comes from global markets. The company is targeting 20 per cent annual volume growth over the next few years, driven by demand from infrastructure, real estate, renewables, and EV sectors. It reported mixed financials in FY25 so far, with revenue growth but some profit pressure due to raw material costs. However, management expects margin improvement and EBIT positivity in its consumer (FMEG) segment. With rising exports, expanded global certifications, and increased electrician outreach, RR Kabel is positioning itself for long-term leadership despite risks from commodity volatility and heightened competition from large players like Adani and UltraTech.

Finolex Cables is another major player, focusing on both electrical and communication cables. Its Q4 FY25 financial performance showed modest growth, with a 3 per cent YoY rise in net profit to \gtrless 191.7 crore. The company proposed a dividend of \gtrless 8 per share. Stock price momentum has notably risen over 13 per cent in March, fueled by investor optimism and healthy volumes. Compared to peers like Polycab and Havells, Finolex trades at a lower price-to-earnings ratio (~22x FY26E), making it a potentially undervalued opportunity. Its stock, however, remains technically volatile and has only recently recovered from a prolonged downtrend. Finolex is vocal about industry challenges such as counterfeit cables, calling for tighter regulation to ensure consumer safety and brand integrity.

Sustainability and Green Initiatives

The cables and wires industry in India is increasingly focusing on sustainability, driven by environmental concerns and government regulations. Since companies are adopting ecofriendly practices, such as using recyclable materials and reducing energy consumption, sustainability must be considered a strategic imperative.



The Indian wires and cables sector is poised for a pivotal transformation in 2025, driven by sustainable infrastructure goals, energy transition, and rapid digitalization. As the backbone of power and communication networks, this segment is increasingly aligned with the country's climate commitments and electrification goals, placing sustainability at the heart of its evolution.

The demand for green cable standards- RoHS, REACH, LSZH- is driven by green buildings, tunnels, and subways. Renewables also boost demand for UV-resistant DC solar cables, and flexible cables for wind turbines. Smart grid projects integrate fibre-optic monitoring within power cables, improving grid resilience and reducing losses.

With India committed to achieving 500 GW of non-fossil energy capacity by 2030, demand for specialized green cables, such as, solar, wind, halogen-free, and low-smoke flame-retardant variants, is surging. The energy target of 500 GW non-fossil by 2030 requires ~₹7–10 trillion investment with major cable volume ahead.

Policy initiatives like the Revamped Distribution Sector Scheme (RDSS) and smart grid development are pushing utilities to procure higher-efficiency, eco-compliant cable systems. Manufacturers are responding by adopting RoHS and BIS standards, integrating recycled materials, and enhancing product life cycles to reduce carbon footprints.

The sector is gaining momentum from robust infrastructure spending across power, railways, metro systems, and data centers. India's push toward full railway electrification and digital connectivity, especially through 5G rollouts is accelerating the uptake of power and fibre-optic cables. Additionally, as EV adoption rises, demand for charging infrastructure cables and high-tension distribution networks is set to expand sharply in 2025.

The Indian wires and cables market is expected to surpass US\$10 billion in 2025, growing at a CAGR of 7 to 9 per cent, with strong tailwinds from exports. Companies are leveraging India's manufacturing edge and favorable global trade dynamics, especially considering tariffs on Chinese products in Western markets. Leading players such as Polycab, Havells, KEI, and RR Kabel are ramping up capacity and exports, with the latter targeting over 15 per cent growth in FY26.

Notably, UltraTech Cement's strategic foray into cables through a ₹1,800 crore investment signals interest from large industrial players in diversifying into this high-potential space.³³ This will reshape pricing and innovation dynamics, compelling incumbents to strengthen their brand, R&D, and sustainable practices.

In 2025, the wires and cables industry in India stands at a strategic inflection point. Sustainability is no longer a choice but a competitive differentiator. With policy alignment, growing green demand, and infrastructure tailwinds, the sector is set for long-term growth.



However, to sustain momentum, industry players must navigate raw material risks, invest in quality and innovation, and embrace global benchmarks for safety and sustainability.

Government Initiatives-Strategic Enablers

The Indian government has launched several initiatives, including Make in India, and PLI schemes to boost domestic manufacturing and backward integration to promote domestic manufacturing, including cables and wires; steadily rising infrastructure development, which provides an upward thrust to demand for cables and wires; and renewable energy to drive demand for cables and wires in the power sector.

The implementation of the National Broadband Mission 2.0 aims to propel India to the forefront of the digital revolution, enabling the inclusive participation of every citizen in shaping a truly digital society. The outcomes and deliverables of the Mission are:

(a) Optical fiber cable (OFC) connectivity to villages,

(b) High-speed broadband connectivity for all key institutions driving socio-economic progress, including schools, transport hubs, major public service providers and digitally intensive enterprises,

(c) Availability of high Fixed-broadband speeds,

(d) Facilitate rollout of the 5G network, especially in Rural & Remote Areas and strengthening of the 4G network,

(e) Capacity-building program for Central Ministries, States and public institutions like Districts, Schools, Colleges etc.

(f) Protect underground Telecom Infrastructure by enhancing usage of the 'Call Before u Dig' (CBuD) mobile app,

(g) Common/Shareable telecom ducts and utility corridors in all linear projects, and related elements Implementing common and shareable telecom ducts and utility corridors in all linear projects, especially by the central/state/UT governments can bring several benefits,

(h) Mapping of Telecom Assets on PM GatiShakti National Master Plan (NMP) Platform & Development of GIS-based Tools for Planning New Telecom Infrastructure. The PM Gati-Shakti programme is important for the integration of telecom and power corridors.

The National Broadband Mission 2.0 (2025–2030) is characterized by gigabit broadband, 270k villages, and RoW streamlining. The Indian telecom sector reflects this advancement, with an impressive 1.19 billion telephone subscribers and a notable tele-density of 84.46 per cent. It features 8.17 lakh mobile towers, 29.59 lakh base transceiver stations (BTSs), and a network of 41.91 lakh route kilometres of optical fiber cable, providing connectivity to a massive user base of 941.47 million broadband users along with mobile subscribers³⁴.



The current year is shaping up as a transformative year for India's wire and cable sector. Driven by massive investments in power distribution, green energy, telecom infrastructure, supportive manufacturing policies, and the entry of big new players, the industry is rapidly scaling up in capacity, quality, and technological sophistication.

The budgetary allocations for the Ministry of New and Renewable Energy increased significantly, rising from ₹ 102.22 billion in 2023-24 to ₹ 265.4 9 billion in 2025-26, reflecting the government's commitment to accelerating renewable energy deployment. For the Ministry of Power, the budget allocation has been raised to ₹ 218.47 billion, from the ₹ 205.02 billion allocated in 2024-25.³⁵ According to the Economic Survey 2024-25, the government has invested ₹ 1,850 billion in power distribution improvements through schemes such as the Deendayal Upadhyaya Gram Jyoti Yojana³⁶ (introduced in 2014), the Integrated Power Development Scheme³⁷ (2014) and the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (2017)³⁸.

The Revamped Distribution Sector Scheme (RDSS³⁹) was launched in July 2021 with a total outlay of \gtrless 3 trillion, including \gtrless 976.31 billion as budgetary support. The RDSS received an allocation of Rs 160.21 billion in this year's budget. Providing a major impetus to power distribution, in her budget speech, the Finance Minister also noted that they are planning to incentivize electricity distribution reforms. An additional borrowing space of up to 0.5 per cent of the Gross State Domestic Product (GSDP) is available to states, depending on the implementation of specific reforms by the states. As per the Economic Survey, projects worth \gtrless 2,800 billion have been approved for distribution upgrades and smart metering.

India's wire and cable industry in 2025 is heavily influenced by the government's large-scale investments in power distribution through the RDSS. With a ₹ 3 lakh crore outlay, RDSS focuses on modernizing distribution networks, upgrading transformers, and installing smart meters, all of which drive robust demand for high-quality power cables. Additionally, the National Infrastructure Pipeline (NIP) and other public capital expenditure programs are supporting widespread electrification and grid expansion, necessitating massive cable deployment in both rural and urban areas.

The clean energy transition is another major demand driver. With the PM Suryodaya Yojana⁴⁰ targeting rooftop solar installations for 1 crore households and the country's target of 500 GW renewable capacity by 2030, there is increasing demand for solar cables and high-temperature resistant wires. The scheme has been allocated \gtrless 200 billion in this year's budget, marking an 80 per cent increase from the previous budget allocation. This is in line with the target to achieve 30 GW of residential rooftop solar capacity by 2027.

Simultaneously, initiatives like FAME-II (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles), battery-swapping policy, and the scaling up of electric vehicle (EV) charging infrastructure are spurring growth in specialized cabling solutions for the EV ecosystem.



According to the Ministry of Power, the Green Energy Corridors (GECs⁴¹) continue to strengthen renewable integration, with GEC-I installing 9,136 ckt km of transmission lines and 21,413 MVA of substation capacity, while GEC-II is progressing to seven additional states. The Scheme for the Development of Solar Parks and Ultra-mega Solar Power Projects sets a target for establishing 40,000 MW of capacity. As of December 31, 2024, 55 solar parks with a cumulative capacity of 39.9 GW have been sanctioned across 13 states. Notably, solar projects with a capacity of 12.2 GW have already been commissioned.⁴²

The rollout of 5G, expansion of data centers, and implementation of the National Broadband Mission 2.0 are boosting the need for fiber-optic cables and broadband infrastructure. Launched in January 2025, NBM 2.0 aims to connect over 2.7 lakh villages with high-speed broadband, which has led to a surge in demand for telecom and fiber cables. This aligns with India's growing digital economy and the need for faster, more reliable data transmission networks.

To promote domestic manufacturing, the government introduced a new PLI (Production-Linked Incentive) scheme for electronic components in early 2025, worth ₹ 25,000 crore. This includes support for connectors and circuit components used in wire assembly. Customs duties have been rationalized, with certain wire components exempted from basic duty to reduce production costs. At the same time, the Bureau of Indian Standards (BIS) and Central Electricity Authority (CEA) have tightened quality standards for aluminum and copper wires, enhancing safety and reliability across the supply chain.

There is an increased private sector interest in 2025, with players like UltraTech Cement diversifying into the wires and cables business. With ₹ 1,800 crore committed to manufacturing facilities, such investments reflect the sector's promising growth outlook. The government's Make in India and Atmanirbhar Bharat initiatives continue to attract global partnerships and promote technology transfer in cable manufacturing, thereby enhancing India's capacity to produce advanced and export-ready cable products.

Industry Risks and Challenges

Despite the promising outlook, the cables and wires industry in India faces several risks and challenges, including:

1. Raw Material Price Volatility: The industry is vulnerable to fluctuations in raw material prices, especially copper, aluminum, and polymers, which can erode margins and impact profitability. Global price volatility in these commodities, driven by geopolitical tensions, supply chain realignments, and changing demand patterns, particularly from China, can significantly impact input costs and profit margins. In a competitive market with limited pricing power, especially in government contracts or commodity-grade products, the ability to pass cost increases to customers remains constrained.



2. Competition: The industry is highly competitive, marked by the coexistence of organized and unorganized players with many players jostling for market share. While the organized sector is growing due to quality-conscious demand from infrastructure and industrial users, the unorganized sector still holds a sizable market share in low-voltage and residential segments. Numerous unorganised players flood with substandard, unsafe products. This not only exerts downward pressure on prices but also affects overall credit quality and sector formalization.

3. Regulatory and certification gaps: Compliance and technological risks across industries are increasing rapidly, including the sector under review. Companies need to comply with various regulations and standards, including those related to safety and environmental concerns. With growing awareness around fire safety, energy efficiency, and environmental sustainability, there is mounting pressure to adopt Low Smoke Zero Halogen (LSZH) and fire-retardant cables, which require substantial R&D and capital investment. This may strain smaller players and lead to industry consolidation. Despite increasing BIS & CEA audits, quality enforcement remains inconsistent. Additionally, evolving standards from organizations like the Bureau of Indian Standards (BIS) and increased scrutiny of quality in both domestic and export markets raise compliance burdens.

The industry's success is closely linked to the health of end-user industries such as power transmission and distribution, real estate, infrastructure, telecom, and automobiles.

The sector faces challenges related to quality assurance, and the widespread issue of counterfeit cables. Additionally, high capital expenditure (capex) requirements for adopting green technology and smart manufacturing could limit smaller players' ability to compete effectively. There is also a skills gap, particularly in automation and sustainable design engineering.

The cables and wires industry in 2025 faces a complex risk environment shaped by both structural and cyclical factors. Logistical constraints, viz., infrastructure, grid reliability, and Right of Way (RoW) clearance issues hamper installation rates

While the long-term outlook benefits from India's focus on infrastructure modernization, smart cities, electrification of transport, and renewable energy integration, execution delays in public sector projects, regulatory uncertainties, and funding constraints could dampen near-term demand and cash flow.

The industry is also undergoing digital transformation, with smart cables and IoT-integrated systems gaining traction in high-end applications. Companies that fail to invest in automation, digitization, and innovation risk losing market share, especially in exports and premium industrial segments.



Way Forward

Cables and wires remain critical for achieving India's electrification, digital, and EV goals driving economic growth and infrastructure resilience. Between ₹1.7–1.9 trillion domestic market and US\$ 25 billion total cable industry, India is shaping a robust, modern infrastructure environment. The sustained investment by government and private players positions the cables and wires sector as a key enabler of the country's next-generation economy.

The Indian cables and wires sector is poised for sustained double-digit CAGR (~10-12 per cent) growth through 2030, driven by robust infrastructure development, electrification, and digital connectivity initiatives. But there must be a sharper focus on the following strategic needs:

- 1. Enhance raw material hedging and vertical integration.
- 2. Consolidate the ecosystem via mergers and strategic compliance.
- 3. Invest in technology (high-voltage, hybrid, IoT-enabled cables).
- 4. Expand global footprint leveraging "China+1" opportunity.
- 5. Collaborate with infrastructure projects for long-term contracts.

To capitalize on this momentum, manufacturers must invest in modernizing production facilities and scaling up capacity, especially in the high-voltage and specialized cable segments. Encouraging indigenous manufacturing through schemes like Make in India and leveraging Production Linked Incentive (PLI) schemes can reduce import dependency and enhance global competitiveness.

Technology adoption will be central to the sector's evolution. The industry must prioritize the development and widespread use of fire-retardant, low-smoke (FRLS), and halogen-free cables, which are gaining regulatory and market preference. Additionally, integrating smart and IoT-enabled cables, particularly in infrastructure and industrial settings, will support preventive maintenance and system efficiency, aligning with the broader digitalization of infrastructure.

India's push to enhance its renewable energy capacity is driving increased demand for cabling solutions tailored to solar, wind, and electric vehicle (EV) applications. To stay competitive, industry players will need to realign their product offerings and boost investments in research and development. Additionally, the transition to underground cabling in urban development and smart city projects is expected to spur demand for cables that are more robust and resistant to environmental conditions.

To ensure long-term sustainability, the industry must also focus on recycling and environmentally friendly manufacturing practices. Collaboration with research institutions, standard-setting bodies, and policymakers will be essential to foster innovation and set new benchmarks for quality and safety. Overall, a proactive approach combining technological



advancement, policy alignment, and market responsiveness will be the key to unlocking the full potential of the cables and wires sector in India. Sustained competitiveness will be a function of innovation (investing in research and development to improve product quality and efficiency) and sustainability (adopting eco-friendly practices).

References

⁹ Teji Mandi. (2025, March 12). India's wires & cables industry: Growth drivers, market trends, and future outlook.

https://tejimandi.com/blogs/feature-articles/indias-wires-cables-industry-growth-drivers-market-trends-and-future-outlook

¹⁰ IMARC Group. (2024). India electrical wires and cables market: Industry trends, share, size, growth, opportunity, and forecast 2025-2033. https://www.imarcgroup.com/india-electrical-wires-and-cables-market

- ¹¹ Tesla not keen on local production, minister says, as India finalises EV policy by y Neha Arora and Aditi Shah June 2, 2025. Reuters
- ¹² India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.
- ¹³ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

¹⁴ Times of India. (2025, May 25). Tripura government to develop data centers for AI-5G synergy.

https://timesofindia.indiatimes.com/business/india-business/tripura-government-to-develop-data-centers-for-ai-5gsynergy/articleshow/121389028.cms¹⁵ Mahesh, K. (2025, May 20). *Bhatti in B'luru to study urban power solutions*. The Times of India.

https://timesofindia.indiatimes.com/city/hyderabad/bhatti-in-bluru-to-study-urban-power-solutions/articleshow/121298333.cms ¹⁶ Badshah, N. (2025, February 17). Meta plans to link US and India with world's longest undersea cable project. The Guardian. https://www.theguardian.com/technology/2025/feb/17/meta-plans-to-build-worlds-longest-underwater-sub-sea-cable-venture ¹⁷ "India's Exicom eyes 50% revenue from EV charger business by 2030-end". December 5, 2024. Reuters

¹⁸ Niti Aayog. Handbook of Electric Vehicle charging infrastructure implementation.

https://www.niti.gov.in/sites/default/files/2021-08/HandbookforEVChargingInfrastructureImplementation081221.pdf ¹⁹ Press Information Bureau (Government of India) (2025); Press Information Bureau, New Delhi. Viewed on 14 July 2025 ([https://www.pib.gov.in/PressNoteDetails.aspx?ModuleId=3\&NoteId=154025]

²⁰ "TATA.ev Unveils Bold Expansion Plan to Revolutionize India's EV Charging Infrastructure". 13th February 2025. https://emobilityplus.com/2025/02/13/tata-ev-unveils-bold-expansion-plan-to-revolutionize-indias-ev-charging-infrastructure/ ²¹ "FACTBOX What are India's EV makers' plans for their charging networks?". February 14, 2025. Reuters.

²² "Tesla not keen on local production, minister says, as India finalises EV policy by Neha Arora and Aditi Shah June 2, 2025. Reuters

²³ "INR 16,000 crore capex required to meet public EV charging demand by 2030: FICCI'. ET Energy World. Dec 16, 2024. https://energy.economictimes.indiatimes.com/news/power/inr-16000-crore-capex-required-to-meet-public-ev-charging-demandby-2030-ficci-report/116369518

²⁴ Devdiscourse News Desk. (2025, May 21). India accelerates EV charging network under PM E-Drive scheme. Devdiscourse. https://www.devdiscourse.com/article/headlines/3420364-india-accelerates-ev-charging-network-under-pm-e-drive-scheme



¹ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

² India's Cables & Wires Boom: Plug Into the ₹1 Lakh Crore Power Play. 30 Jun 2025. https://www. soic.in

³ Chapter 1: Overview of the Indian Wires & Cables Sector. Wright Research. https//www. wrightresearch.in

⁴ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

⁵ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

⁶ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

⁷ India Electrical Wires and Cables Market Size, Share, Trends and Forecast by Type, End User, and Region, 2025-2033. Report ID: SR112025A30923. IMARC.

⁸ ANI. (2025, January 12). Government's infrastructure investments to propel growth into FY 2026: Report. The Times of India. https://timesofindia.indiatimes.com/business/india-business/governments-infrastructure-investments-to-propel-growth-into-fy-2026-report/articleshow/117177247.cms

²⁵ South Eastern Railway. (n.d.). Signal & Telecom – Introduction. Indian Railways.

https://ser.indianrailways.gov.in/cris/uploads/files/1409051615383-Introduction%201.pdf

²⁶ South Central Railway. (n.d.). *Divisions*. Indian Railways. Retrieved May 30, 2025, from

https://scr.indianrailways.gov.in/view_section.jsp?id=0%2C1%2C383%2C553&lang=0

²⁷ Government of India. (2024). Economic Survey 2023–24. Ministry of Finance.

https://www.indiabudget.gov.in/economicsurvey/doc/echapter.pdf

²⁸ Construction Times. (2024, December 15). *The future market demand for wires and cables in India looks very promising*.

https://constructiontimes.co.in/The-future-market-demand-for-wires-and-cables-in-India-looks-very-promising

²⁹ Teji Mandi. (2025, March 12). India's wires & cables industry: Growth drivers, market trends, and future outlook.

https://tejimandi.com/blogs/feature-articles/indias-wires-cables-industry-growth-drivers-market-trends-and-future-outlook ³⁰ Khemka, S. (2025, January 18). Cables and wires sector in focus: Polycab & KEI Industries could give 20–30% upside in 2025. The Economic Times. https://economictimes.indiatimes.com/markets/stocks/news/cables-and-wires-sector-in-focus-polycab-kei-industries-could-give-20-30-upside-in-2025/articleshow/117338727.cms

³¹ Patidar, V. (2024, August 12). State policies and clean energy boost India's cable market. Wire & Cable India.

https://www.wirecable.in/state-policies-and-clean-energy-boost-indias-cable-market/

³² Economic Times – Telecom Equipment. (2025, March 10). *India can become global hub for submarine telecom cable network*. Link: https://telecom.economictimes.indiatimes.com/news/telecom-equipment/india-can-become-global-hub-for-submarine-telecom-cable-network/118832154

³³ Economic Times. (2025, February 25). India's UltraTech Cemen

t to spend ₹1,800 crore (≈ \$206 million) to enter cables & wires business. *The Economic Times*.

https://economictimes.indiatimes.com/industry/indl-goods/svs/cement/indias-ultratech-cement-to-spend-206-million-to-enter-cables-wires-business/articleshow/118560845.cms

³⁴ National Broadband Mission 2.0 2025-30. Department of Telecommunications, Ministry of Communications, Government of India ©) New Delhi. 8 January 2025.

https://economictimes.indiatimes.com/industry/indl-goods/svs/cement/indias-ultratech-cement-to-spend-206-million-to-enter-cables-wires-business/articleshow/118560845.cms

³⁵ https://www.pib.gov.in/PressReleasePage.aspx?PRID=2107825

³⁶ Government of India. (2025, June 17). *Deen Dayal Upadhyaya Gram Jyoti Yojana* [Spotlight]. National Portal of India. https://www.india.gov.in/spotlight/deen-dayal-upadhyaya-gram-jyoti-yojana

³⁷ Government of India, Ministry of Power. (2025, June 5). *Integrated Power Development Scheme (IPDS)*. Retrieved June 2025, from https://ipds.gov.in/

³⁸ Ministry of Power, Government of India. (2021, December 23). *Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya): Backgrounder*. Press Information Bureau.

https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/dec/doc2021122321.pdf

³⁹ Press Information Bureau. (2023, February 9). *Government of India launches Revamped Distribution Sector Scheme (RDSS) to reduce the Aggregate Technical & Commercial (AT&C) losses to pan-India levels* (Release No. 1897764). Ministry of Power, Government of India. https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1897764

⁴⁰ Press Information Bureau. (2024, August). *PM Surya Ghar: Muft Bijli Yojana - Redefining Solar Power and Energy Access.* Government of India. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/aug/doc2024812373601.pdf

⁴¹ Government of India, Ministry of Power. (2025, January 16). *Green Energy Corridor*. https://powermin.gov.in/hi/node/5369
⁴² Eninrac Consulting. (n.d.) *Solar parks development status in India*. https://eninrac.com/horizon/new-energies-and-

sustainability/solar-parks-development-status-in-india

