



Industry Report on India Electrical Equipment and Fast-Moving Electrical Goods (FMEG) Industry

- LED lighting
- PVC/electrical insulation tapes
- Electrical Wire & Cables (Focus on LT Power Cable)
- Power Distribution Products (LV switchgear & protection devices:)
- Switches & Sockets

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Prepared for Biocon Electric Limited



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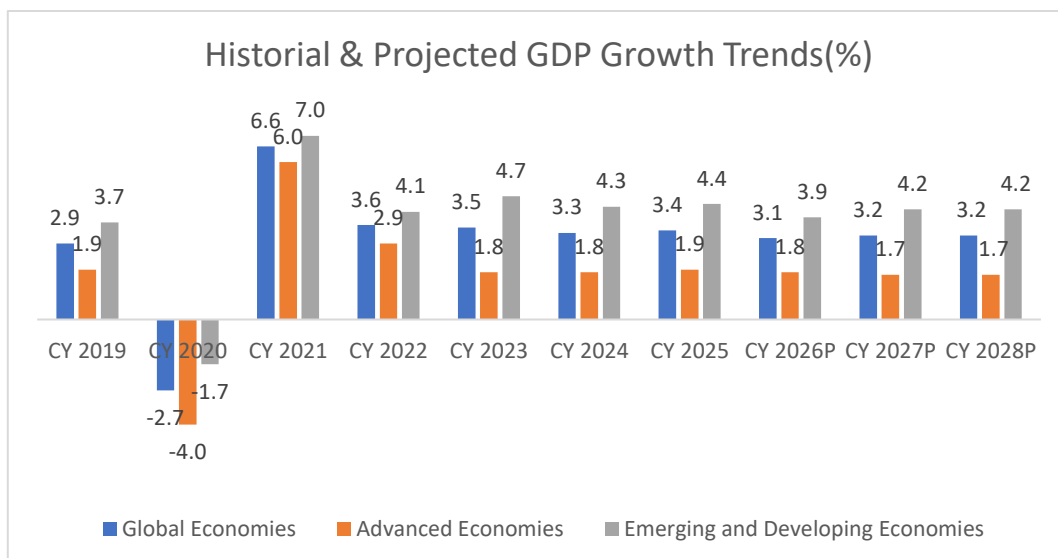


Macroeconomic Scenario Landscape

Global Economic Overview

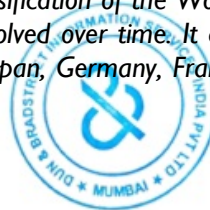
According to World Economic Outlook, global growth is projected at 3.1% in 2026 and at 3.2% in 2027 and 2028, slower than the recent pace of about 3.4% in CY 2024–25 and is expected to settle at approximately that rate over the medium term, below the historical average of 3.7% during 2000–19. The forecast for 2026 has been revised downward by 0.2 percentage point, while the forecast for 2027 and 2028 remains unchanged compared with the January 2026 WEO Update. Global headline inflation is expected to rise to 4.4% in 2026 and decline to 3.7% in 2027, reflecting upward revisions for both years.

The conflict involving US, Israel and Iran is increasingly functioning as a global supply and confidence shock. The International Energy Agency (IEA) describes the current situation as the largest oil supply disruption on record, with flows through the Strait of Hormuz reduced to a trickle and the resulting effects spreading across refined fuels and liquefied natural gas (LNG). At the same time, aviation disruptions and elevated risk premia are weakening services activity and increasing uncertainty around investment decisions. A significant share of global energy flows through the Strait of Hormuz, and shipping disruptions and insurance constraints are therefore translating directly into higher landed costs, supply chain delays, and greater output risks for energy-intensive manufacturing. As a result, the policy environment has increasingly become challenging, while growth support is required but renewed cost-push inflation across energy, freight, and eventually food inputs is limiting the scope for faster monetary easing.



Source – IMF Global GDP Forecast Release, April 2026

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict economic criteria and has evolved over time. It comprises 40 countries in the Advanced Economies category, including the G7 (the United States, Japan, Germany, France, Italy, the



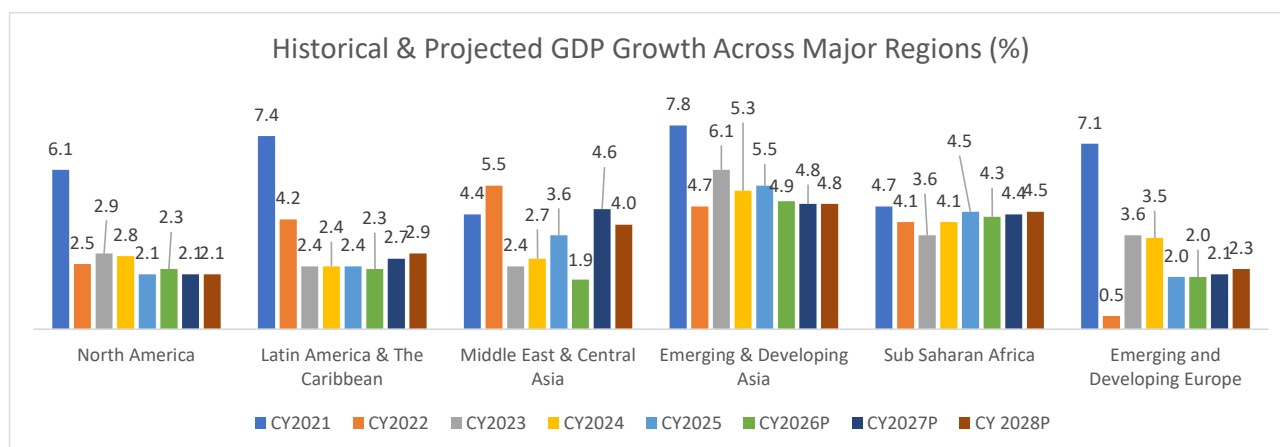
United Kingdom, and Canada) and selected Eurozone members (Germany, Italy, France, etc.). The group of emerging and developing economies (156) comprises all economies not classified as Advanced Economies (e.g., India, China, Brazil, Malaysia).

Historical and Projected GDP Growth

GDP growth across major regions showed a mixed trend during 2024–25. While growth in several regions—including Middle East & Central Asia, Emerging and Developing Asia, Sub-Saharan Africa as well as Latin America and the Caribbean—is expected to slow further in 2026, performance remains uneven across geographies.

In the Middle East and Central Asia, economic growth is projected to decline from **3.6% in 2025** to **1.9% in 2026**, before recovering to **4.6% in 2027** and **4.0% in 2028**, reflecting the region's direct exposure to the conflict and the anticipated rebound thereafter. For commodity-exporting economies directly affected by the conflict, reduced production and export activity are expected to result in a significant downward revision to 2026 GDP growth projections.

Growth in emerging and developing Asia is projected to moderate from **5.5% in 2025** to **4.9% in 2026** and is further estimated to grow at **4.8% in 2027 and 2028**. Within the region, China's 2026 growth forecast has been revised upward by **0.2 percentage point** relative to the October estimate, to **4.4%**, despite a **0.1 percentage point downward revision** from January. This upward adjustment reflects the impact of lower effective U.S. tariff rates on Chinese goods, along with stimulus measures that are expected to offset the negative effects of the shock arising from the Middle East conflict. However, China's growth is projected to slow to **4.0% in 2027**, as structural headwinds continue to weigh on the economy, including the prolonged slowdown in the housing sector, a shrinking labor force, declining returns on investment, and weaker productivity growth.



Source- IMF World Economic Outlook, April 2026

In Latin America and the Caribbean, economic growth is projected to remain broadly stable at 2.3% in 2026 before strengthening to 2.7% in 2027 and 2.9% in 2028. The effects of the Middle East conflict across the region are expected to be uneven, with smaller economies likely to experience a more pronounced negative impact due to their relatively greater vulnerability to external shocks.



Growth in sub-Saharan Africa is projected to remain relatively stable at 4.3% in 2026 and 4.4% in 2027 and 4.5% in 2028. However, this regional outlook masks significant variation across countries, with some economies expected to face more pronounced challenges than others. In particular, oil-importing and non-resource-intensive economies are likely to be adversely affected by the conflict in the Middle East, as heightened external pressures may weigh on economic activity and weaken growth prospects. In emerging and developing Europe, economic growth is expected to slow sharply to 2.0% in 2025 and recover only marginally thereafter, with the region projected to expand at an average rate of 2.0% in 2026, 2.1% in 2027 and 2.3% in 2028.

Global Economic Outlook

The conflict between Israel/the United States and Iran, which began in February, has developed into a global shock to transport, trade, and security planning. As a result, periodic airspace closures across Israel and parts of the Gulf, together with severe disruption to shipping through the Strait of Hormuz, have affected the movement of oil, oil products, and LNG. Consequently, businesses have faced longer and less reliable supply lines, higher freight and insurance costs, and more frequent “stop-go” operating conditions.

The near-term growth outlook has softened as the conflict is affecting both demand and costs. Disruption to the oil channel is coinciding with pressure on the non-oil outlook as travel and services weaken and risk premia rise. Airspace disruption has increased operating costs and reduced travel reliability, while higher jet fuel costs have added to pressure on carriers and freight forwarders.

Investment conditions have also tightened as higher regional risk premia have increased insurance, shipping, hedging, and working capital costs. At the same time, logistics disruption and higher input costs are raising inflation risks. Fertilizer and related input disruption is also creating a lagged risk to food prices.

Asia-Pacific: In Asia-Pacific, the conflict has created sustained stress for business continuity. Even with fighting paused, energy availability, shipping disruption, and insurance costs are expected to continue weighing on operations over the next quarter. Oil prices remain well above January levels despite easing from March peaks, while war-risk insurance, tighter tanker availability, and rerouting costs remain elevated. As a result, several fuel-importing economies—including Japan, South Korea, India, and parts of Southeast Asia—have faced power-conservation measures and fuel rationing, increasing the risk of operational downtime in energy-intensive sectors.

Shipping and supply chains are also facing second-round effects. Many Asia–Europe shipments have been diverted via the Cape of Good Hope, thereby extending lead times by 10–14 days. Although some routes have reopened, schedules remain compressed and insurers remain cautious, which has increased delivery deadline risk across manufacturing, particularly in chemicals, electronics, and pharmaceuticals. Input volatility and fertilizer disruption are also adding to inflation risks and thereby complicating the policy outlook.



Latin America: In Latin America, the U.S.-Israel-Iran conflict has increased energy market pressures, with higher Brent crude prices raising input costs and inflation risks across the region. Consequently, net hydrocarbon exporters such as Brazil, Colombia, and Ecuador are benefiting from stronger external balances, while net energy importers—including Panama, Chile, and much of Central America—are facing higher import costs. Elevated fertilizer prices are also weighing on agricultural output and margins, including in Brazil and Argentina. In response, governments have introduced fuel subsidies and price controls.

Middle East & North Africa: In the Middle East and North Africa, the conflict continues to affect the region directly, with many countries facing missile and drone attacks from Iran in response to attacks by the United States and Israel on Iran. In the short term, economic growth is expected to slow sharply as exports decline, uncertainty constrains spending, and governments delay investment initiatives. The reduction in food imports is also expected to significantly affect countries with limited domestic production capacity. Bahrain, Qatar, and Kuwait remain highly dependent on imports through the Strait of Hormuz and therefore face risks of food shortages and concerns regarding social stability if disruption persists.

Sub-Saharan Africa: In Sub-Saharan Africa, the conflict continues to disrupt energy and fertilizer supply chains, thereby keeping the region under significant external pressure. Higher global oil prices are sharply rising fuel and transport costs for import-dependent economies such as Kenya, Uganda, Ethiopia, and Ghana. Policy responses have varied across the region. Ethiopia introduced emergency fuel subsidies in mid-March to contain domestic price increases, while Kenya is experiencing stronger pass-through from higher fuel costs, which is weighing on aviation, logistics, and export activity.



Global Growth Projection

Growth in advanced economies is projected at 1.8% in 2026 and 1.7% in 2027 and 2028, while the overall impact of the Middle East conflict is expected to remain modest, lowering 2026 growth by 0.2 percentage point relative to the pre-conflict forecast. This limited effect reflects positive terms-of-trade gains in the United States and stronger growth momentum, supported by government measures, in Japan, whereas more significant negative effects are expected mainly in net energy-importing economies, including the euro area and the United Kingdom. In the United States, growth is projected at 2.3% in 2026 and 2.1% in 2027 and 2028, with fiscal policy and the lagged effects of monetary easing in 2025 continuing to support activity, even as higher trade barriers since April 2025 weigh on growth. The 0.1 percentage point downward revision from the January 2026 WEO Update reflects a small negative effect from the war, but this is partly offset by a rebound following the end of the 2025 federal government shutdown, along with stronger productivity growth and positive carryover effects. Although the International Emergency Economic Powers Act (IEEPA) ruling may reduce tariff-related fiscal revenues, its impact on the fiscal balance and activity is expected to remain limited and spread over the forecast horizon. Growth in 2027 is expected to remain solid, supported by tax incentives, including those for corporate investment under the One, Big, Beautiful Bill Act (OBBBA), while technology-driven momentum is projected to moderate and productivity growth is expected to gradually converge toward historical norms.

Growth in emerging market and developing economies is projected to slow to 3.9% in 2026 before recovering to 4.2% in 2027 and 2028, while the Middle East conflict is expected to have a greater impact on this group than on advanced economies, reducing 2026 growth by 0.3 percentage point relative to the pre-conflict forecast. In emerging and developing Asia, growth is expected to moderate from 5.5% in 2025 to 4.9% in 2026 and 4.8% in 2027 and 2028. Within the region, China's 2026 growth forecast has been revised upward to 4.4%, as lower effective U.S. tariffs and stimulus measures offset the impact of the conflict, although growth is projected to slow to 4.0% in 2027 as structural headwinds intensify. India's growth outlook has also improved, with growth revised upward to 7.6% in 2025 and projected to remain at 6.5% in 2026, 2027 and 2028, supported by strong carryover effects and lower additional U.S. tariffs on Indian goods. Meanwhile, several South and Southeast Asian economies are expected to face weaker domestic demand due to lower tourism and remittance inflows, while the Philippines has seen a sharp downward revision for 2026.

In the Middle East and Central Asia, growth is projected to decline from 3.6% in 2025 to 1.9% in 2026, before rebounding to 4.6% in 2027 and 4.0% in 2028, reflecting the region's direct exposure to the conflict. The downturn is expected to be most severe among affected commodity exporters, particularly Bahrain, Iran, Iraq, Kuwait, and Qatar, while the impact is expected to be less severe in other economies. Accordingly, Iran's economy is projected to contract by (-) 6.1% in 2026, before rebounding to 3.2% in 2027 and moderating to 1.5% in 2028. By contrast, Saudi Arabia's growth is projected at 3.1% in 2026, rising to 4.5% in 2027 before easing



to 3.6% in 2028. In sub-Saharan Africa, growth is expected to remain broadly stable at 4.3% in 2026, 4.4% in 2027, and 4.5% in 2028, although oil-importing economies are likely to face greater pressure, while Nigeria and South Africa are expected to record moderate but gradually improving growth profiles. In Latin America and the Caribbean, growth is projected at 2.3% in 2026, 2.7% in 2027, and 2.9% in 2028, with Brazil expected to benefit modestly in the near term from its position as a net energy exporter, while Mexico is projected to recover gradually to 1.6% in 2026, 2.2% in 2027, and 2.1% in 2028.

In emerging and developing Europe, the sharp slowdown in growth to 2.0% in 2025 is expected to reverse only marginally, with the region projected to expand at an average rate of 2.0% in 2026, 2.1% in 2027, and 2.3% in 2028. Within the region, Russia's 2026 growth forecast has been revised upward by 0.3 percentage point relative to January, to 1.1%, as higher commodity prices are expected to support activity. This momentum is projected to continue, with growth remaining at 1.1% in 2027 before moderating slightly to 1.0% in 2028. By contrast, Türkiye's 2026 growth forecast has been revised downward by 0.8 percentage point relative to the January 2026 WEO to 3.4%, as weaker-than-expected growth in 2025 and higher oil and gas prices are expected to weigh on activity.

Key factors impacting Global Macroeconomic landscape

- Geopolitics continues to constitute a major source of global macroeconomic and business risk. The Russia–Ukraine war remains a persistent driver of instability, as Russia has intensified large-scale missile and drone attacks on Ukrainian cities and infrastructure, while Ukraine has stepped up strikes on Russian ports, refineries, and export infrastructure, reportedly contributing to a reduction in Russian oil output in April. The Israel–Iran–U.S. confrontation has emerged as the most significant near-term external shock to the global economy, with the IMF warning that disruptions to the Strait of Hormuz and regional energy infrastructure could materially weaken global growth and raise inflation; under its April 2026 reference forecast, global growth has been lowered to 3.1% and inflation raised to 4.4%, with materially worse outcomes under prolonged disruption scenarios. In parallel, the Pakistan–Afghanistan border conflict remains a significant regional flashpoint, although China-mediated talks are seeking to secure a ceasefire and reopen border crossings after months of cross-border attacks and trade disruption. At the same time, U.S. strategic activism continues to influence regional risk perceptions: Washington has removed sanctions on Venezuela's interim leadership and deepened engagement with Caracas, tensions over Greenland have re-emerged amid renewed U.S. rhetoric and ongoing diplomatic discussions with Denmark and Greenland, and U.S.–Nigeria security cooperation has continued to deepen in response to regional instability and counterterrorism concerns. In addition, resource nationalism and strategic competition over rare earths and other critical minerals have become increasingly operational concerns rather than distant strategic risks. The IEA's April 2026 assessment notes that demand for magnet rare



earths has doubled since 2015 and is projected to increase by more than 30% by 2030, while supply chains remain highly concentrated, with China accounting for around 60% of mined output, more than 90% of refining, and nearly 95% of permanent magnet production, thereby heightening global exposure to export controls, supply concentration, and industrial policy interventions

- The period of relatively frictionless trade supported by multilateral liberalisation and free trade agreements is increasingly giving way to regionalisation, nearshoring, friend-shoring, and diversification of production networks. Rising tariffs, policy uncertainty, and strategic realignment are creating a more fragmented trade environment and raising the premium on resilience over pure efficiency
- Technology adoption and sustainability have become core strategic priorities. Organizations are advancing digital transformation by embedding AI, automation, and cybersecurity into their operations to enhance productivity and safeguard critical assets. AI adoption is emerging as a visible driver of optimism, particularly within the information and communications sectors. Growth in cloud computing, streaming, IoT, and AI and Advancements in hardware and cooling technologies aim to reduce energy consumption and improve performance is driving the need for more powerful and scalable data centres.



India Macroeconomic Analysis

The global economy is expected to navigate a more challenging environment as it enters CY 2026. According to the IMF's World Economic Outlook (April 2026), global growth is projected to moderate from **3.4% in CY 2025 to 3.1% in CY 2026**, reflecting weaker economic momentum across several major economies, persistent geopolitical uncertainties, and the lingering effects of global trade disruptions. Growth in advanced economies remains subdued, with the United States expected to expand at a modest pace of around **2.3% in CY 2026**, while China is projected to witness a gradual slowdown to **4.4% in CY 2026 and 4.0% thereafter**, highlighting structural challenges in the world's second-largest economy.

Country	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	CY 2025	CY 2026 P	CY 2027 P	CY 2028P
India ¹	-5.8%	9.7%	7.6%	9.2%	6.5%	7.6%	6.5%	6.5%	6.5%
China	2.3%	8.6%	3.1%	5.4%	5.0%	5.0%	4.4%	4.0%	4.0%
United States	-2.2%	6.1%	2.5%	2.9%	2.8%	2.1%	2.3%	2.1%	2.1%
Japan	-4.2%	2.7%	0.9%	1.4%	-0.2%	1.2%	0.7%	0.6%	0.6%
United Kingdom	-10.3%	8.6%	4.8%	0.4%	1.1%	1.3%	0.8%	1.3%	1.6%
Russia	-2.7%	5.9%	-1.4%	4.1%	4.3%	1.0%	1.1%	1.1%	1.0%
Germany	-4.1%	3.9%	1.8%	-0.9%	-0.5%	0.2%	0.8%	1.2%	1.2%

Source: World Economic Outlook, April 2026

Against this backdrop, **India continues to stand out as one of the fastest-growing major economies globally**. The country's growth estimate for CY2025 has been revised upward to **7.6%**, supported by robust domestic demand, resilient investment activity, strong services-sector performance, and better-than-expected momentum during the latter half of the fiscal year. Looking ahead, GDP growth is projected to remain healthy at **6.5% during CY2026 and CY2027**, underpinned by favorable demographics, rising infrastructure investments, expanding manufacturing capabilities, and continued policy support. India's relative resilience assumes greater significance amid a global landscape characterized by slowing growth in major economies such as China, Germany, Japan, and the United Kingdom. Furthermore, while geopolitical tensions, including the Middle East conflict, are expected to weigh on tourism and remittance flows across several Asian economies, India remains comparatively insulated due to its large domestic consumption base and diversified growth drivers. The moderation in proposed U.S. tariffs on Indian goods has also provided a supportive tailwind for exports and business confidence.

¹ For India, data and forecasts are presented on a fiscal year basis, and GDP from 2022 onward is based on GDP at market prices with fiscal year 2022/23 as a base year

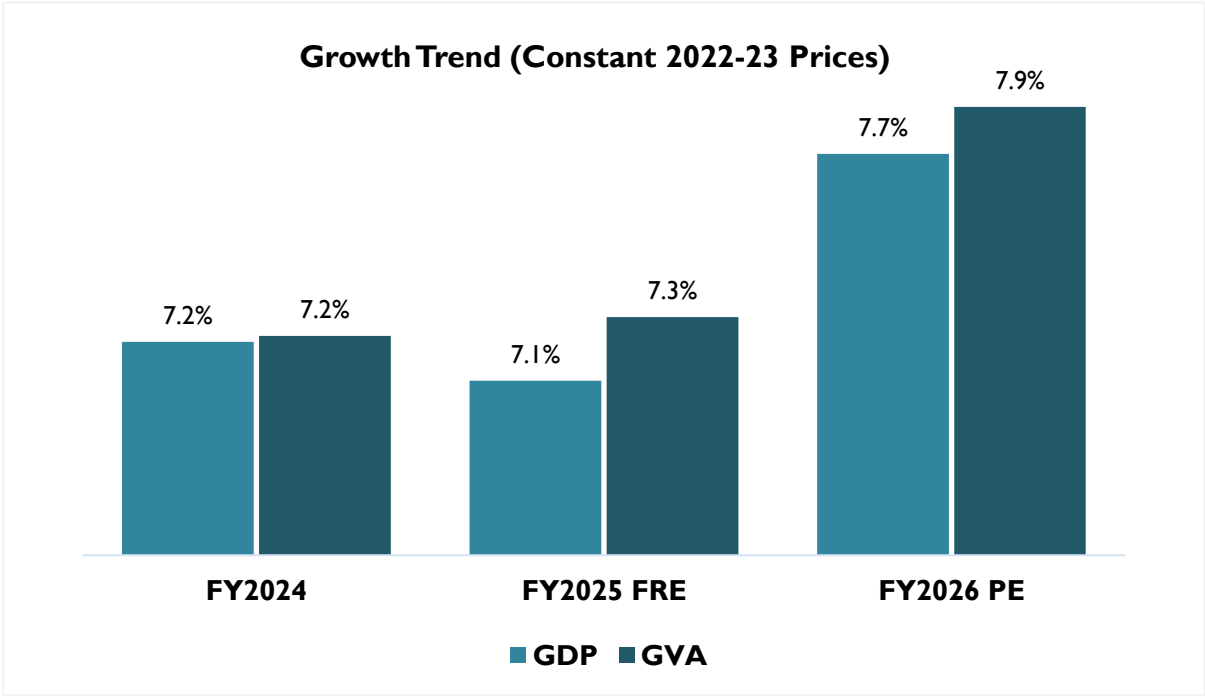


Overall, the divergence between India's sustained growth trajectory and the slowing outlook for several large economies reinforces the country's attractiveness as a preferred destination for global capital, strategic investment, and long-term business expansion. As global investors increasingly seek growth opportunities in a fragmented economic environment, India is well positioned to benefit from structural shifts in supply chains, digital transformation, and ongoing industrialization trends.

Historical GDP and GVA Growth Trend

As per Provisional Estimates, India Real GDP (GDP at constant prices) for FY 2025–26 is estimated to reach INR 323.12 lakh crore, compared to the First Revised Estimate (FRE) of INR 299.89 lakh crore for FY 2024–25. This represents a growth rate of 7.7% in 2025–26, higher than the 7.1% growth recorded in 2024–25.

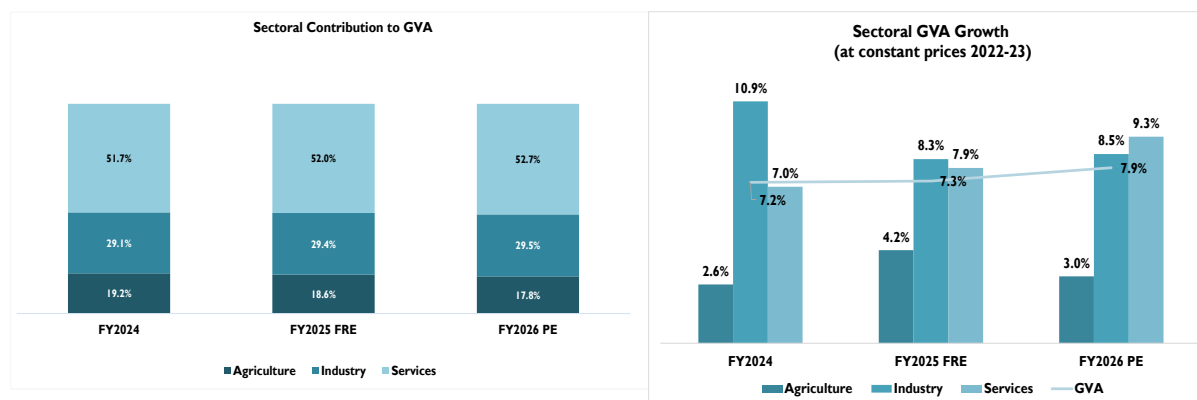
Similarly, Real GVA for FY 2025–26 is estimated to reach INR 294.91 lakh crore, up from INR 273.36 lakh crore in FY 2024–25. This indicates a growth rate of 7.9%, compared with the 7.3% growth achieved in the previous year.



Source: Ministry of Statistics & Programme Implementation (MOSPI), National Account Statistics: FY2025,
FRE is First Revised Estimate; PE is Provisional Estimates



Sectoral Contribution to GVA and Annual Growth Trend



Source: Ministry of Statistics & Programme Implementation (MOSPI), CMIE Economics Outlook
FRE is First Revised Estimate; PE is Provisional Estimates²

Sectoral analysis of GVA reveals that the industrial sector experienced steady growth momentum in FY 2026, recording a 7.9% y-o-y growth against 7.3% year-on-year growth in FY 2025. Within the industrial sector, growth moderated across sub-sectors with mining, and construction activities growing by 5.15%, and 7.36%, respectively in FY 2026, compared to 11.69%, and 7.30% in FY 2025. Growth in the utilities sector too moderated to 1.74% in FY 2026 from 2.87% in the previous year. The industrial sector's contribution to GVA increased marginally from 29.4% in FY 2025 to 29.5% in FY 2026.

The services sector continued to be the main driver of economic growth. It expanded by 9.3% in FY 2026 from 7.9% in FY 2025. The services sector retained its position as the largest contributor to GVA, rising from 51.7% in FY 2024 to 52.0% in FY 2025, with a further increase to 52.7% in FY 2026.

The agriculture sector saw an acceleration in growth, increasing from 2.66% in FY 2024 to 4.18% in FY 2025, before moderating to 3.0% in FY 2026. However, its contribution to GVA declined marginally from 19.2% in FY 2024 to 17.8% in FY 2026. Overall, Gross Value Added (GVA) growth rose to 7.9% in FY 2026 from 7.3% in FY 2025.

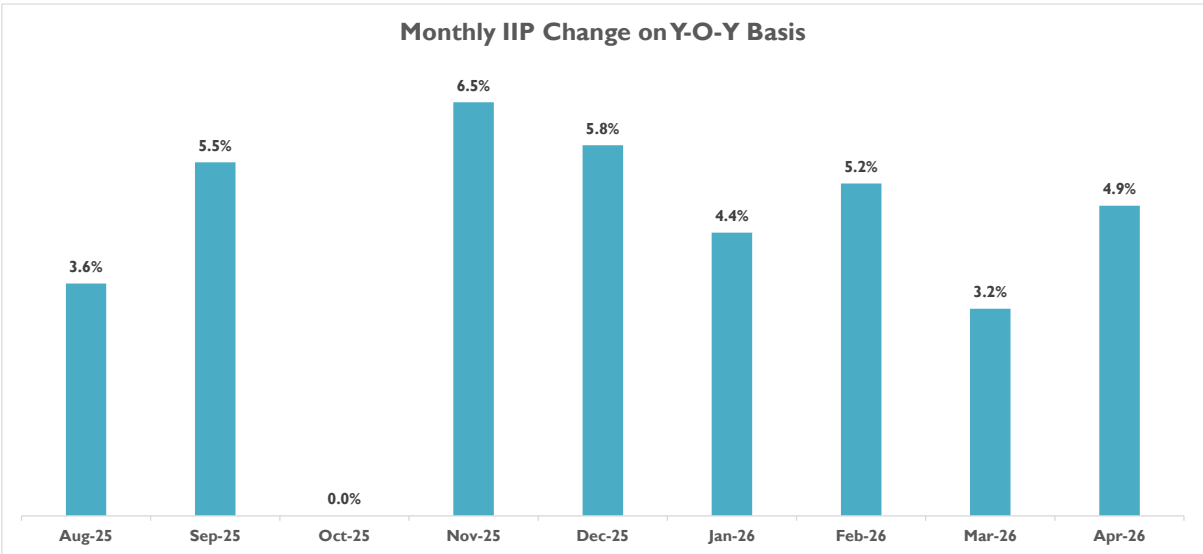
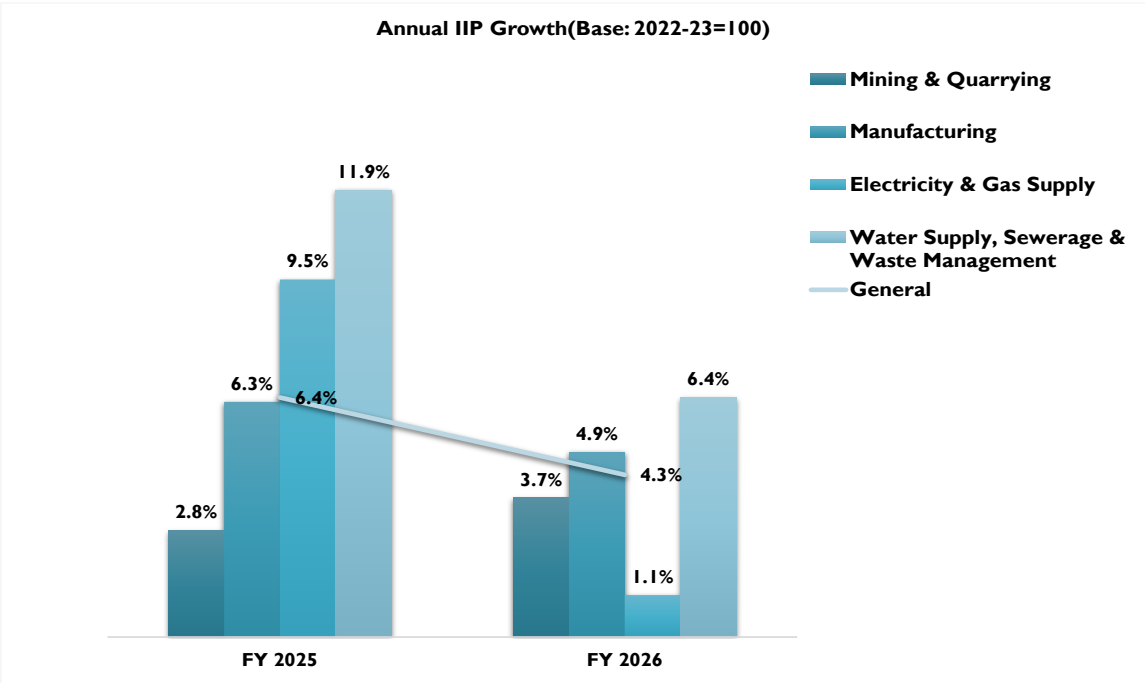
Annual & Monthly IIP Growth

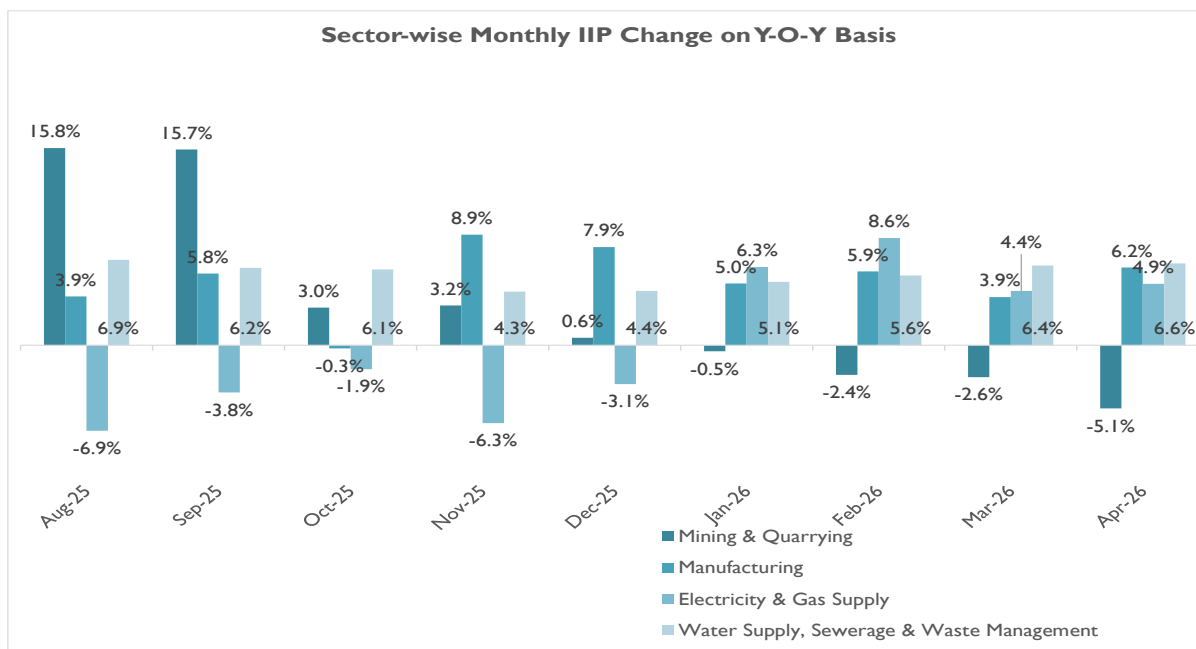
Industrial sector performance as measured by the IIP index exhibited moderation in FY 2026, recording a 4.3% y-o-y growth against 6.4% increase in the previous year. The manufacturing index showed moderation, increasing by 4.9% in FY 2026 compared with 6.3% in FY 2025. The Electricity & Gas Supply sector index also moderated, growing 1.1% in FY 2026 compared with 9.5% in the previous year. Water Supply, Sewerage & Waste

² https://www.mospi.gov.in/uploads/latestReleases/latest_release_1780655857536_5ac01869-ca4a-422d-b7a7-57b81da60932_Press_Note_on_GDP_Estimates_for_Q4_2025-26_and_PE_FY_2025-26_F.pdf



Management also moderated by 6.4% in FY 2026 compared with 11.9% in the previous year, while the mining sector index grows by 3.7% in FY 2026 compared with 2.8% in the previous year.





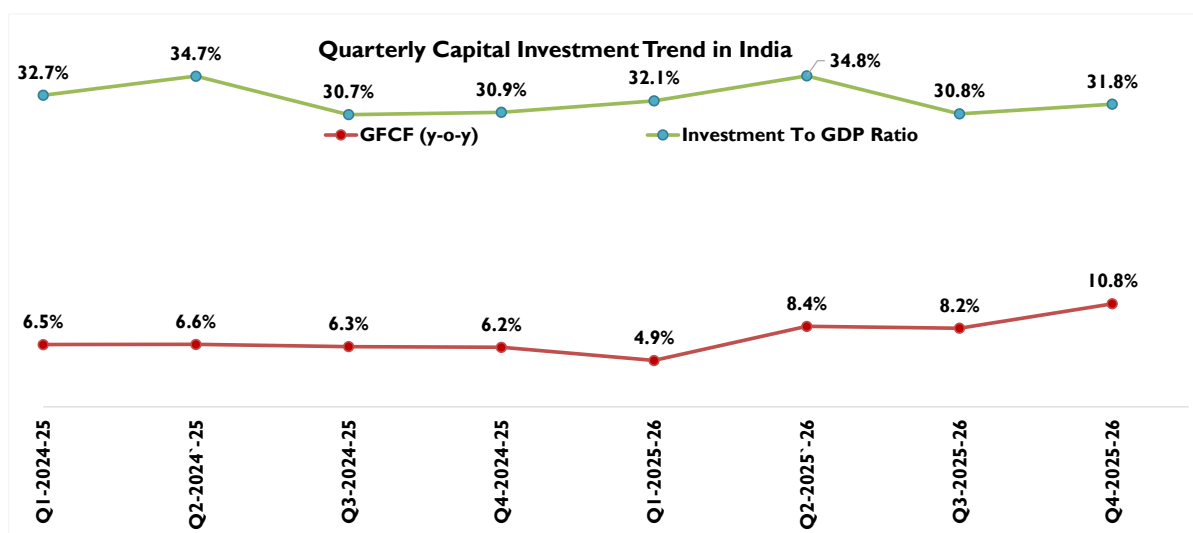
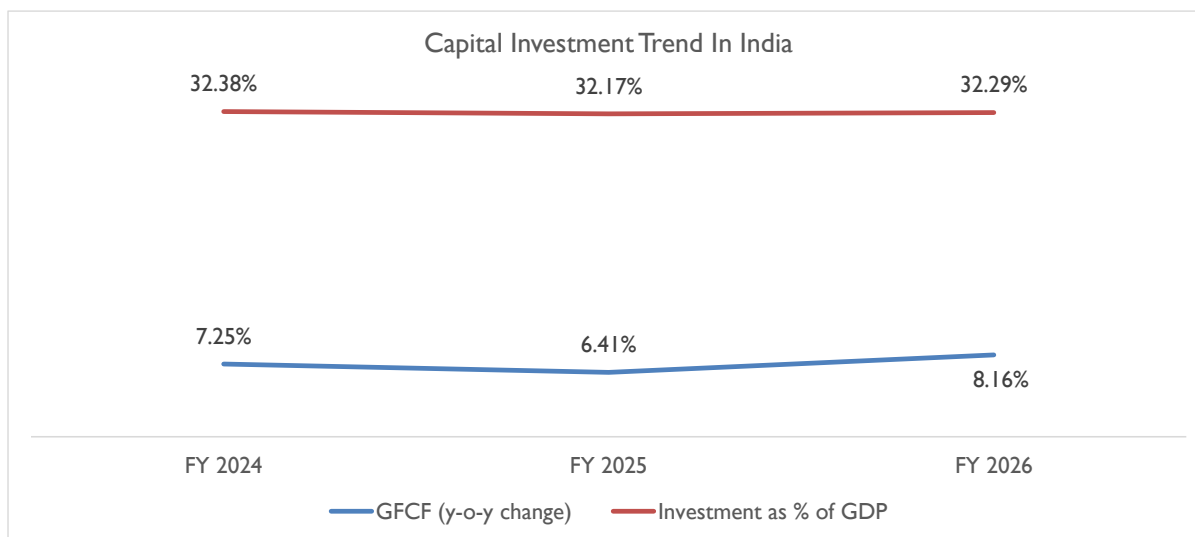
Source: Ministry of Statistics & Programme Implementation (MOSPI)

The IIP growth rate for the month of April 2026 is 4.9 percent as compared to April 2025. The growth rates of the Four sectors, Mining & Quarrying, Manufacturing, Electricity & Gas Supply and Water Supply, Sewerage & Waste Management for the month of April 2026 are (-)5.1 percent, 6.2 percent, 4.9 percent and 6.6 percent respectively

Annual and Quarterly: Investment & Consumption Scenario

Other major indicators, such as Gross Fixed Capital Formation (GFCF), a measure of investment, increased during FY 2026, registering 8.16% year-on-year growth compared with 6.41% in FY 2025, bringing the GFCF-to-GDP ratio to 32.29%.





Source: Ministry of Statistics & Programme Implementation (MOSPI), CMIE Economics Outlook

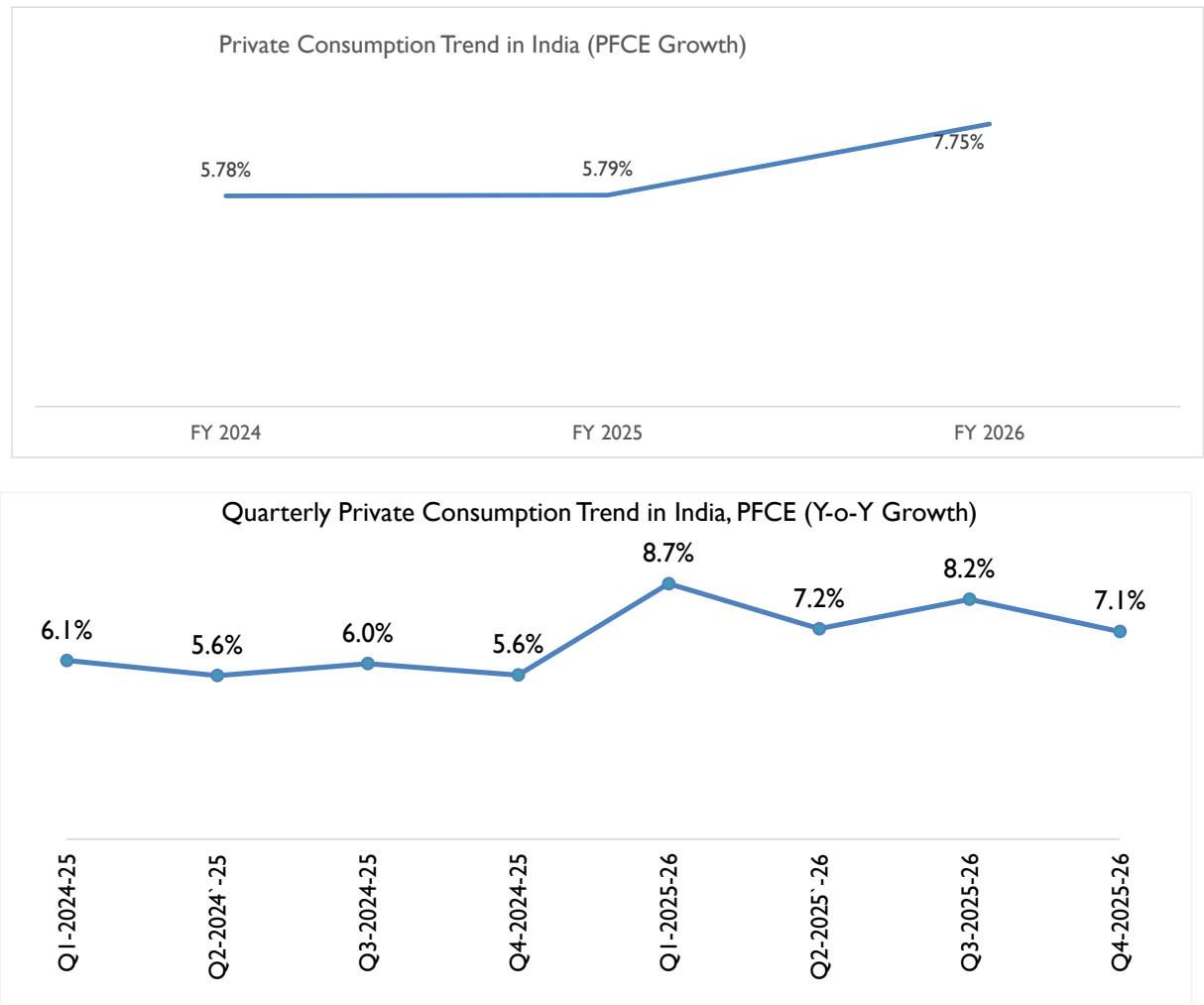
On a quarterly basis, India's capital investment indicators reflect a healthy and improving investment environment, supported by sustained investment intensity and stronger capital formation in recent quarters. The Investment to GDP ratio remained consistently above 30% throughout the period, highlighting continued resilience in capital deployment. The ratio increased from 32.7% in Q1 FY 2024-25 to 34.7% in Q2, before moderating to 30.7% in Q3 and 30.9% in Q4. In FY 2025-26, the ratio improved again to 32.1% in Q1 and further strengthened to 34.8% in Q2, the highest level during the period, before remaining healthy at 30.8% in Q3 and 31.8% in Q4. This indicates that investment activity continued to remain robust despite normal quarterly variations.

GFCF (y-o-y) growth also points toward a positive investment trend, particularly in FY 2025-26. After remaining broadly stable during FY 2024-25, with growth ranging between 6.2% and 6.6%, GFCF growth accelerated meaningfully from 4.9% in Q1 FY 2025-26 to 8.4% in Q2 and 8.2% in Q3, before rising further to 10.8% in Q4. This strong improvement in the second half of FY 2025-26 suggests strengthening fixed capital formation and a



revival in investment momentum. Overall, the data indicates that India’s capital investment landscape remains on a positive trajectory, with sustained investment levels and improving GFCF growth reflecting stronger capital spending, better investment confidence, and continued support for economic growth.

Private Consumption Scenario

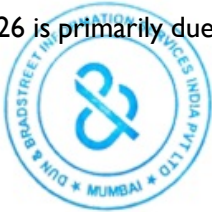


Sources: MOSPI, CMIE Economics Outlook

Private Final Consumption Expenditure (PFCE), a practical proxy for household spending, recorded growth in FY 2026 relative to FY 2025. PFCE recorded healthy growth in FY 2025-26 relative to FY 2024-25. However, quarterly PFCE growth moderated sequentially to 7.1% in Q4 FY 2025-26 from 8.2% in Q3 FY 2025-26

Inflation Scenario

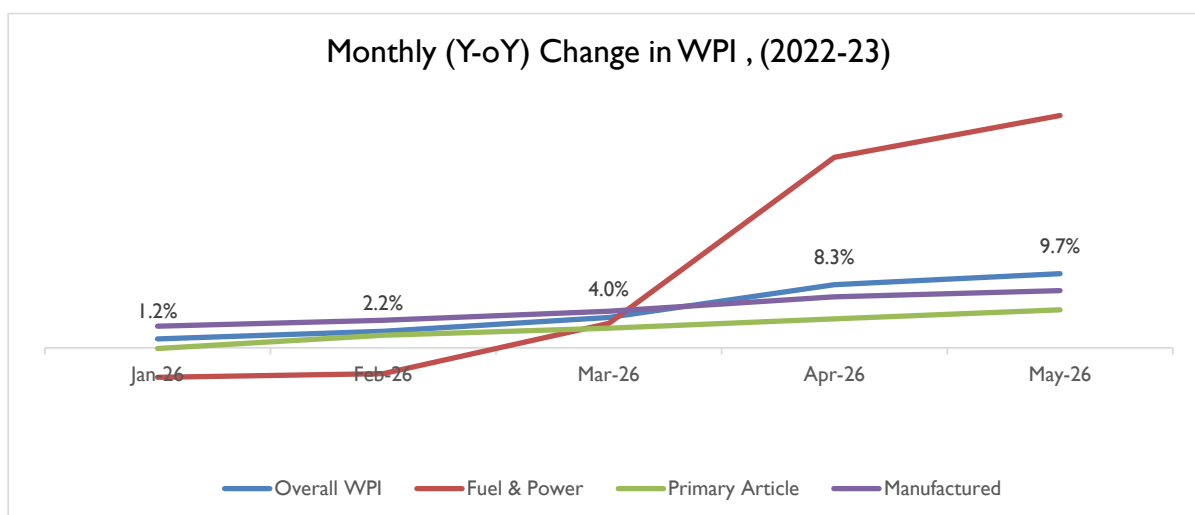
The annual rate of inflation based on All India Wholesale Price Index (WPI) number is 3.88% (provisional) for the month of March 2026 (over March 2025). Positive rate of inflation in March 2026 is primarily due to increase

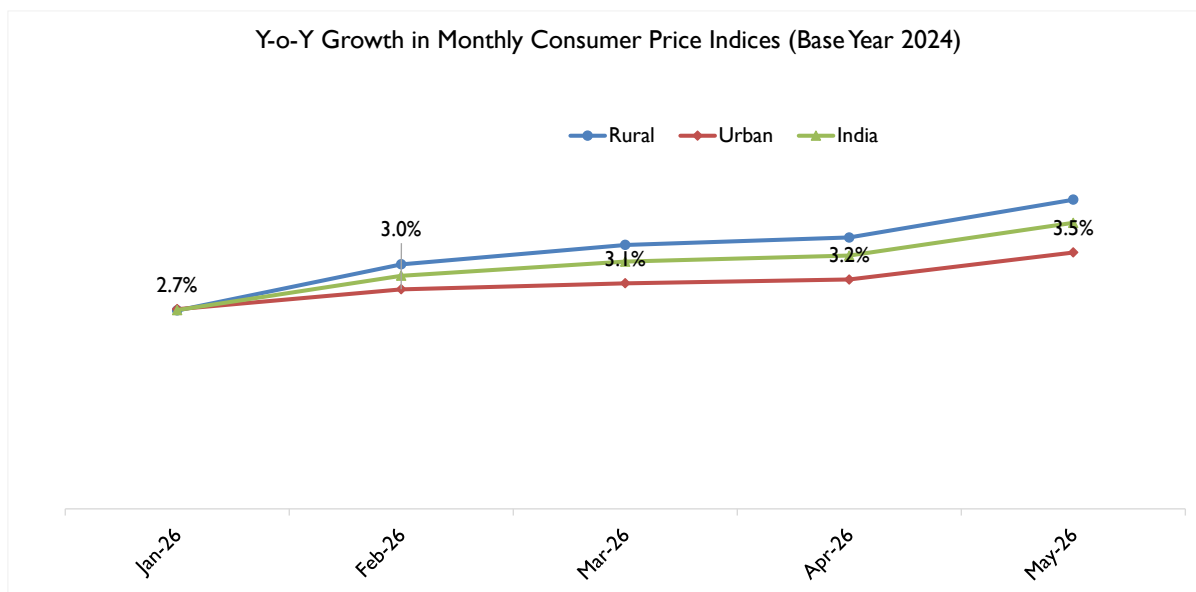


in prices of crude petroleum & natural gas, other manufacturing, non-food articles, manufacture of basic metals and food articles etc.

All India Wholesale Price Index (WPI) inflation for May 2026 is 9.68 per cent on year-on-year (YoY) basis, compared to 8.26 per cent in April 2026. The index for All Commodities for May 2026 stands at 109.9, whereas it was 108.8 in April 2026. Across Groups, 'Mineral Oils (containing Petroleum Products)', 'Crude Petroleum and Natural Gas', 'Manufacture of Chemicals and Chemical Products', and 'Manufacture of Basic Metals', have been major drivers of WPI inflation in April and May 2026.

Across Major Groups, YoY inflation for Primary Articles, Fuel and Power, and Manufactured Products is 4.99 per cent, 30.33 per cent, and 7.48 per cent, respectively in May 2026, whereas it was 3.78 per cent, 24.89 per cent, and 6.68 per cent, respectively, in April 2026. The indices for Primary Articles, Fuel and Power, and Manufactured Products are 113.7, 113, and 107.8, respectively, in May 2026, whereas they were 112.6, 110.9, and 107, respectively, in April 2026.

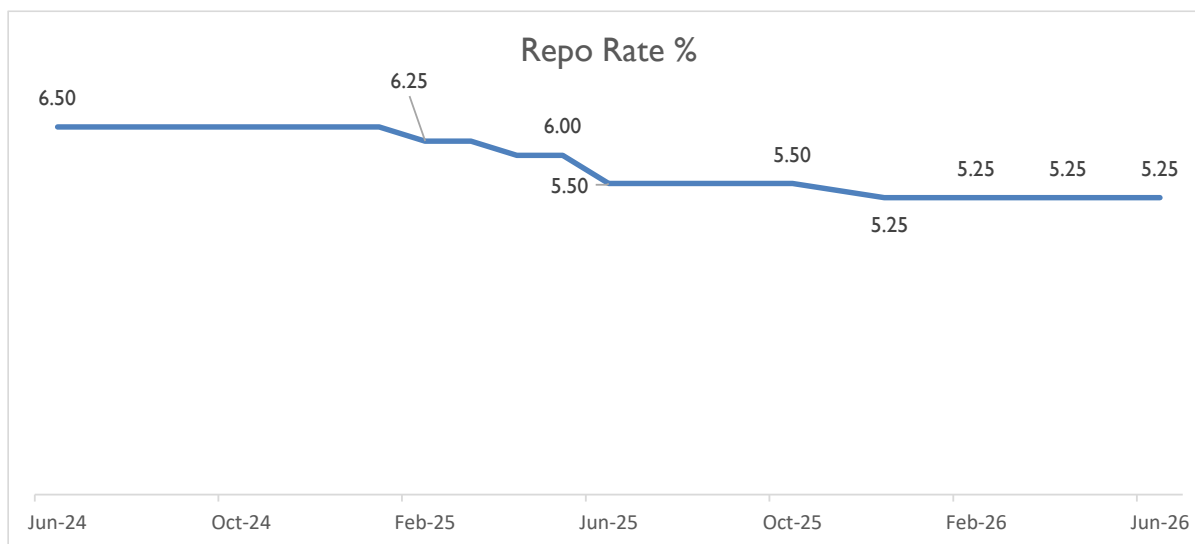




Source: MOSPI, Office of Economic Advisor

With effect from January 2026, the National Statistics Office (NSO) introduced a revised CPI series with base year 2024=100, drawing revised item weights from the Household Consumption Expenditure Survey (HCES) 2023-24. Year-on-year inflation rate based on All India Consumer Price Index (CPI) with base year 2024 for the month of May, 2026 over May, 2025 is 3.93%(Provisional). Corresponding inflation rates for rural and urban are 4.25% and 3.53%, respectively. On the monetary policy front, the RBI had cumulatively raised the repo rate by 250 basis points between May 2022 and February 2023, bringing it to 6.50%, where it was held steady through January 2025 to anchor inflationary expectations. With inflation moderating below target and growth requiring support, the RBI's Monetary Policy Committee (MPC) commenced an easing cycle in February 2025, delivering a cumulative 125 basis points of rate cuts through four reductions — 25 bps each in February 2025, April 2025, and December 2025, and a larger 50 bps cut in June 2025 — interspersed with pauses in August and October 2025. The repo rate currently stands at 5.25%, in June 2026.





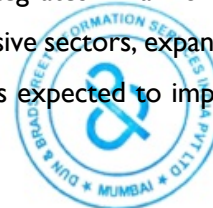
Sources: CMIE Economic Outlook

Growth Outlook

The Union Budget 2026–27 sets out a quantitatively strong push to build resilient supply chains and develop next-generation industrial capacity. The record ₹12.2 trillion capital expenditure outlay is aimed at easing logistics bottlenecks and enhancing India’s cost competitiveness. Employment measures extend across both urban and rural India in one sweep. In cities and large towns, capex is channelled into “connectors” such as the seven proposed high-speed rail corridors and upgraded Tier-2 and Tier-3 infrastructure, thereby creating construction, logistics, and service jobs while cutting commute times. In smaller towns and villages, job creation is expected to be supported by mega textile parks, the Mahatma Gandhi Gram Swaraj Initiative’s push for khadi and handloom, training for tourist guides, and new waterways and coastal shipping. Together, these steps broaden the wage base instead of providing a short-term bump.

This domestic push is complemented by targeted measures to strengthen strategic supply chains. Dedicated rare earth corridors in Odisha, Kerala, Andhra Pradesh, and Tamil Nadu; customs exemptions for capital goods used in critical mineral processing and battery cells; and the India Semiconductor Mission 2.0 aim to pull manufacturing deeper into components and materials. If executed well, these measures could reduce import dependence in magnets, batteries, and chip inputs and lift the share of higher-productivity manufacturing jobs — thereby raising household incomes durably.

Alongside these domestic measures, India is also seeking to strengthen its external trade architecture through major trade agreements. The conclusion of the India–EU FTA negotiation marks a major strategic milestone, as it offers near-universal market access for 99.5% of India’s exports by value and integrates India more deeply into a USD 24 trillion economic bloc. By providing duty-free entry for key labour-intensive sectors, expanding services access, and establishing a mobility framework for Indian professionals, the deal is expected to improve market



access, support export competitiveness and high-value job creation. It is likely to promote a predictable, rules-based environment for long-term trade and investment flows.

In a similar vein, India–Oman Comprehensive Economic Partnership Agreement (CEPA)³ has been framed as a comprehensive arrangement covering trade in goods and services, investment, professional mobility, and regulatory cooperation, with the objective of strengthening bilateral economic integration between India and Oman. Bilateral trade between the two countries stood at USD 10.61 billion in FY 2024–25, providing the economic basis for the agreement. Under the CEPA, India has secured 100% duty-free market access in Oman across 98.08% of tariff lines, covering 99.38% of India's export value, thereby improving export competitiveness across sectors such as engineering goods, pharmaceuticals, agriculture and processed food, electronics, textiles, plastics, and gems and jewellery. At the same time, India has adopted a calibrated liberalisation approach by offering tariff concessions on 77.79% of its tariff lines, covering 94.81% of imports from Oman by value, while retaining safeguards for sensitive domestic sectors. The agreement also provides gains in services, with Oman undertaking commitments across 127 services sub-sectors, alongside improved provisions for professional mobility, including an increase in the Intra-Corporate Transferee ceiling from 20% to 50% and commitments for a defined category of Indian professionals. Overall, the CEPA is presented as a framework intended to support trade expansion, improve market access, and strengthen long-term economic cooperation between India and Oman.

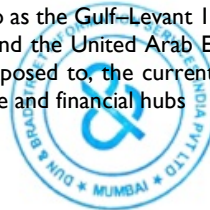
However, these gains remain exposed to external geopolitical risks. The escalation of the Middle East crisis represents an external shock for India, transmitted primarily through energy markets, logistics, and trade-linked business exposure. The Gulf–Levant II⁴ (GL II) economies account for around 15% of India's merchandise exports and 21% of its imports, with trade concentrated in high-value categories such as mineral fuels, precious metals, and electronics; disruptions in this region therefore have an outsized impact despite its modest share of global GDP.

Export exposure is unevenly distributed across India, with risks concentrated in specific districts that serve as production hubs. Discretionary exporters, such as gems and jewellery firms in the districts of Surat, Jaipur, and Mumbai; apparel manufacturers in Tiruppur; automotive producers in Ahmedabad; and electronics assemblers in Kanchipuram and Kolar, are vulnerable to demand slowdown and order deferrals in Gulf markets.

³ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2213203®=3&lang=1>

The Comprehensive Economic Partnership Agreement (CEPA) between India and Oman marks a meaningful step forward in the economic relationship between the two countries. The agreement brings together trade in goods and services, investment, professional mobility, and regulatory cooperation under a single, coherent framework aimed at deepening bilateral economic integration.

⁴ For the purposes of this report, the analysis is confined to a defined group of countries referred to as the Gulf–Levant II (GL-II). This group comprises Bahrain, Iran, Iraq, Israel Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. These economies are treated collectively because they are either directly involved in, or immediately exposed to, the current crisis through geographic proximity, security linkages, energy production and transit, or their role as regional trade and financial hubs



At the same time, Perishable agricultural exporters, including grapes from Nashik, bananas from Solapur, and bovine meat from Ghaziabad, face acute risks from shipping delays and logistics disruptions. Dun & Bradstreet data show that over 4,500 Indian exporters and around 1,800 importers relied on the Strait of Hormuz trade route in 2025, exposing them to working capital stress, payment delays, and production interruptions, while, for import-dependent industries, delays in critical inputs raise the risk of temporary shutdowns and sustained energy price volatility amplifies margin pressure across manufacturing and services.



Key Growth/Demographic Drivers for Economic Growth

Government focus on infrastructure development

The infrastructure sector has received a strong boost in Budget FY'27, marked by a record INR 12.2 trn⁵ public capital expenditure allocation, reinforcing the government's focus on making assets more efficient and sustainable. The introduction of the landmark Infrastructure Risk Guarantee Fund aims to provide partial credit guarantees to lenders and revitalise private sector participation in large-scale projects. By lowering project risk premiums and easing borrowing costs, this mechanism is likely to help crowd in private capital and accelerate construction phase financing across the sector. The transport and logistics sector, in particular, will buoy infrastructure growth. Railways have received a substantial boost in allocation, which will help support the planned development of seven new high-speed rail corridors and a Dankuni-Surat DFC, which aims to cut logistics costs and improve national connectivity. Moreover, the rollout of 20 new National Waterways, new ship repair hubs and a scheme to double the share of coastal and inland water transport from 6.0% to 12.0% by 2047⁶ will together build a greener, more efficient multimodal freight network. Urban transformation continues through targeted development of Tier-2 and Tier-3 cities – with populations over 0.5mn – alongside the creation of City Economic Regions, each supported by multi-year, challenge-based financing to establish new growth hubs and reduce pressure on metros. A broader ecosystem of reforms strengthens medium-term sector prospects. The government aims to scale domestic construction and infrastructure equipment manufacturing, reducing import dependence and improving execution capability in tunnelling, metro construction and road building machinery. The monetisation of CPSE assets will be accelerated through dedicated REIT⁷ structures, helping unlock liquidity for redevelopment and new project pipelines. Additional support flows through region-specific initiatives, such as industrial corridor expansion, and tourism development in cultural and Buddhist heritage zones will further reinforce construction demand.

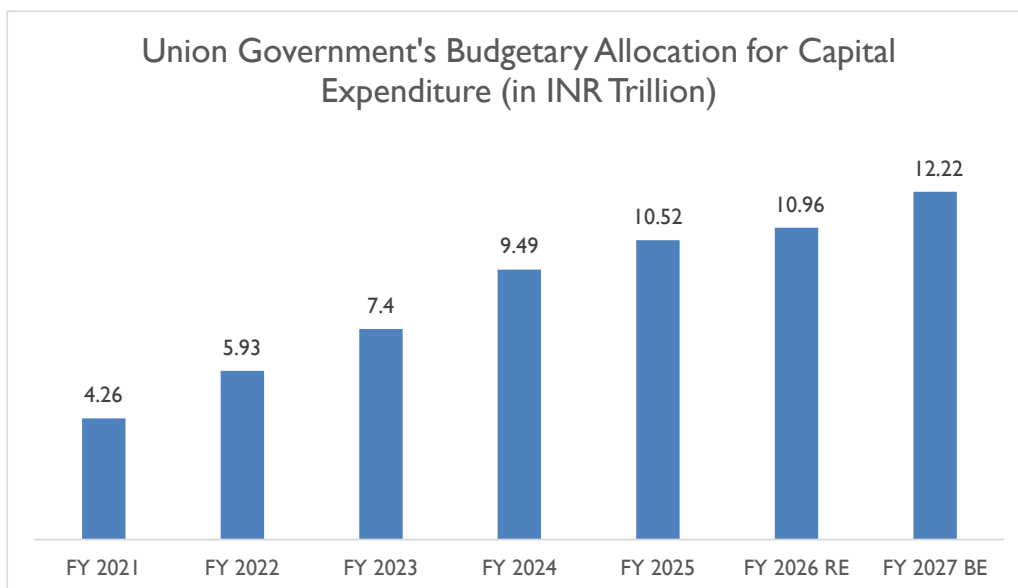
Together, these measures will strengthen India's infrastructure ecosystem through higher public investment, improved risk mitigation tools and wider multimodal connectivity – creating a constructive environment for sustained growth in construction, logistics and urban development.

⁵<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2222521®=3&lang=1#:~:text=Reinforcing%20the%20role%20of%20public,productive%20capacity%20across%20the%20economy.>

⁶ https://www.indiabudget.gov.in/doc/budget_speech.pdf

⁷ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2221817®=3&lang=1>





Union Budget, Government of India
 Note: BE (Budget Estimates) and RE (Revised Estimates)

Development of Domestic Manufacturing Capability

The Government launched the Production Linked Incentive (PLI) scheme in early 2020, initially aimed at improving domestic manufacturing capability in large-scale electronic manufacturing and gradually extended to other sectors. At present it covers 14 sectors, ranging from medical devices to solar PV modules. The PLI scheme provides incentives to companies on incremental sales of products manufactured in India. This incentive structure is aimed at attracting private investment into setting up manufacturing units and thereby strengthening domestic production capabilities. The overall incentive outlay earmarked for the PLI scheme is estimated to be INR 2 trillion. If fully realised, the PLI scheme could add nearly 4% to annual GDP growth, by way of incremental revenue generated from the newly formed manufacturing units.

Strong Domestic Demand

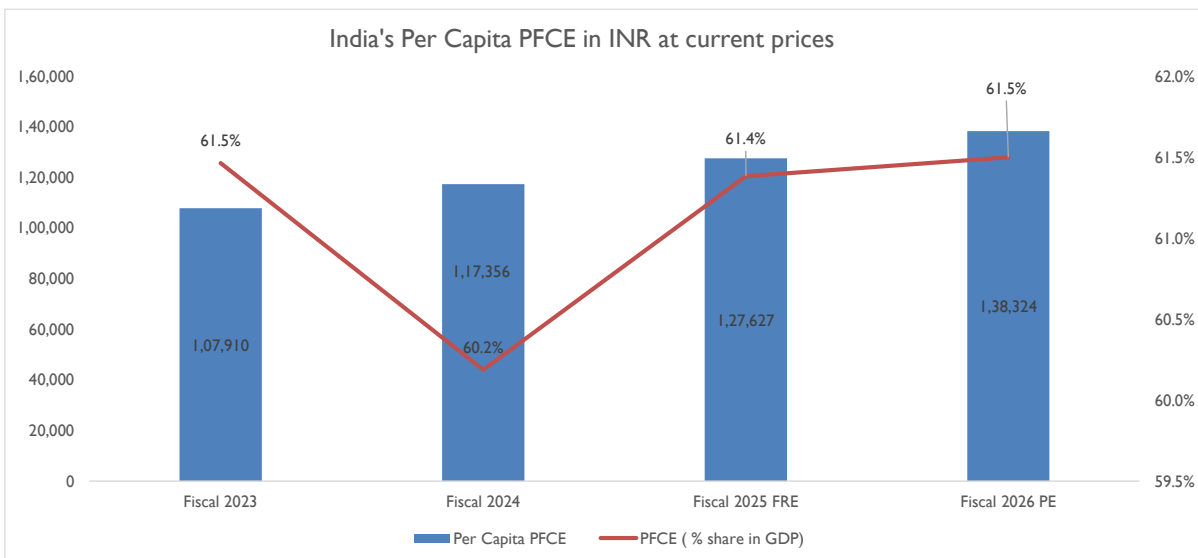
Domestic demand has traditionally been one of the key drivers of the Indian economy. After a brief lull caused by the Covid-19, domestic demand is recovering. Consumer Confidence surveys by the Reserve Bank and other institutions point to an improvement in the Consumer Confidence Index, which is a precursor of improving demand. India has a strong middle-class segment, which has been the major driver of domestic demand. Factors like fast paced urbanization and improving income scenario in rural markets are expected to accelerate domestic demand further. This revival is reflecting in the private final consumption expenditure (PFCE) metric.

India's per capita Private Final Consumption Expenditure (PFCE) at current prices has shown a consistent upward trend, indicating steady improvement in household consumption levels over the years. Per capita PFCE increased from INR 1,07,910 in Fiscal 2023 to INR 1,17,356 in Fiscal 2024, and further rose to INR 1,27,627 in Fiscal 2025



FRE. It is estimated to increase further to INR 1,38,324 in Fiscal 2026 FE, reflecting continued growth in consumer spending and improving consumption capacity.

PFCE as a share of GDP also remained healthy during the period, broadly staying above 60%. The share stood at 61.5% in Fiscal 2023, moderated to 60.2% in Fiscal 2024, before recovering to 61.4% in Fiscal 2025 FRE and further improving to 61.5% in Fiscal 2026 FE. This indicates that private consumption continues to remain a key driver of India's economic growth. Overall, the steady increase in per capita PFCE, along with a stable PFCE share in GDP, reflects resilient household demand and sustained consumption momentum in the economy.



Source: Ministry of Statistics & Programme Implementation (MOSPI)

FRE is First Revised Estimate; PE is Provisional Estimates

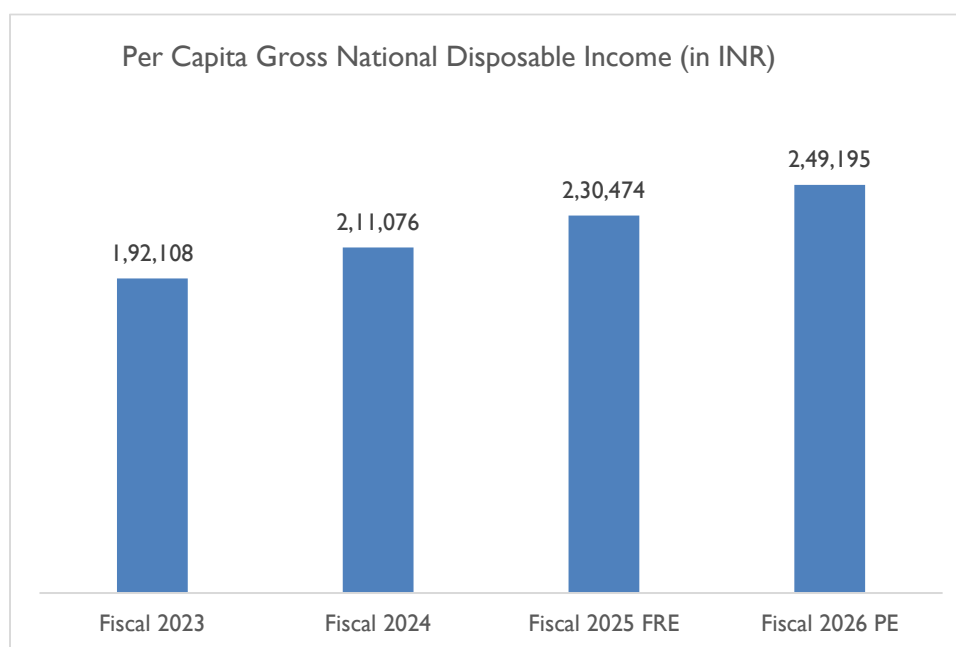
There are two factors driving this domestic demand: first, the large pool of consumers; and second, the improvement in purchasing power.

- The share of middle class increased from nearly 14% in 2005 to nearly 30% in 2021 and is expected to cross 60% by 2047⁸. This expanding middle class household segment is fuelling India's growth story and would continue to play a key role in propelling India's economic growth.
- Consumer-driven domestic demand is majorly fuelled by this growth in per capita income. As per National Statistics Office (NSO), India's per capita Gross National Disposable Income (GNDI) has shown a steady upward trend, reflecting improvement in overall income levels and disposable income capacity. Per capita GNDI increased from INR 1,92,108 in Fiscal 2023 to INR 2,11,076 in Fiscal 2024 and further rose to INR 2,30,474 in Fiscal 2025 FRE. It is estimated to increase further to INR 2,49,195 in Fiscal 2026 PE, indicating

⁸ As per the survey conducted by People Research on India's Consumer Economy. Households with annual income in the range of INR 5 – 30 lakhs are considered as middle-class households.



continued growth in income levels across the economy. The consistent rise in per capita GNDI highlights strengthening purchasing power and improving household income conditions, which can support consumption demand going forward. Overall, the trend reflects a positive income environment, with rising disposable income expected to contribute to sustained private consumption and broader economic growth.



Source: Ministry of Statistics & Programme Implementation (MOSPI)

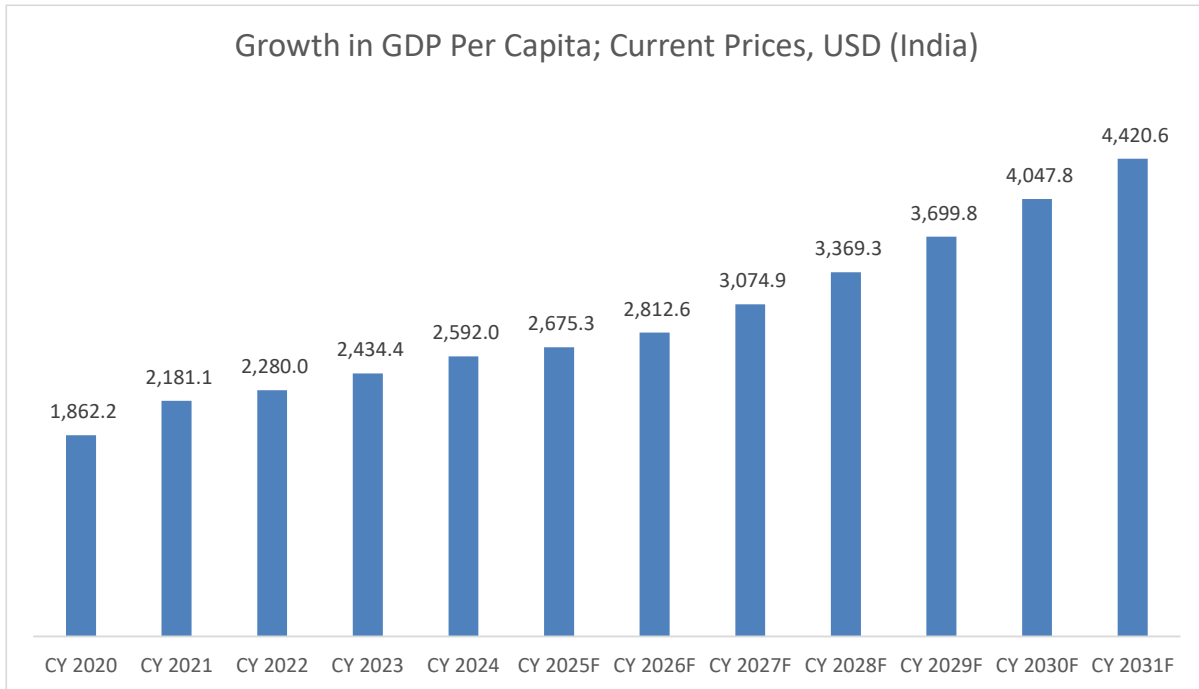
FRE is First Revised Estimate; PE is Provisional Estimates

India's Per Capita GDP Trends

India is poised to become the world's third-largest economy with a projected GDP of USD 5 trillion within the next three years, driven by ongoing reforms. As one of the fastest-growing major economies, India currently holds the position of the fifth-largest economy globally, following the US, China, Japan, and Germany. By 2027-28, it is anticipated that India will surpass both Germany and Japan, reaching the third-largest spot. This growth is bolstered by a surge in foreign investments and a wave of new trade agreements with India's burgeoning market of 1.4 billion people. The aviation industry is witnessing unprecedented orders, global electronics manufacturers are expanding their production capabilities, and suppliers traditionally concentrated in southern China's manufacturing hubs are now shifting towards India.

To achieve its vision of becoming the world's third-largest economy by 2027-28, India will need to implement transformative industrial and governmental policies. These policies will be crucial for sustaining the consistent growth of the nation's per capita GDP over the long term.



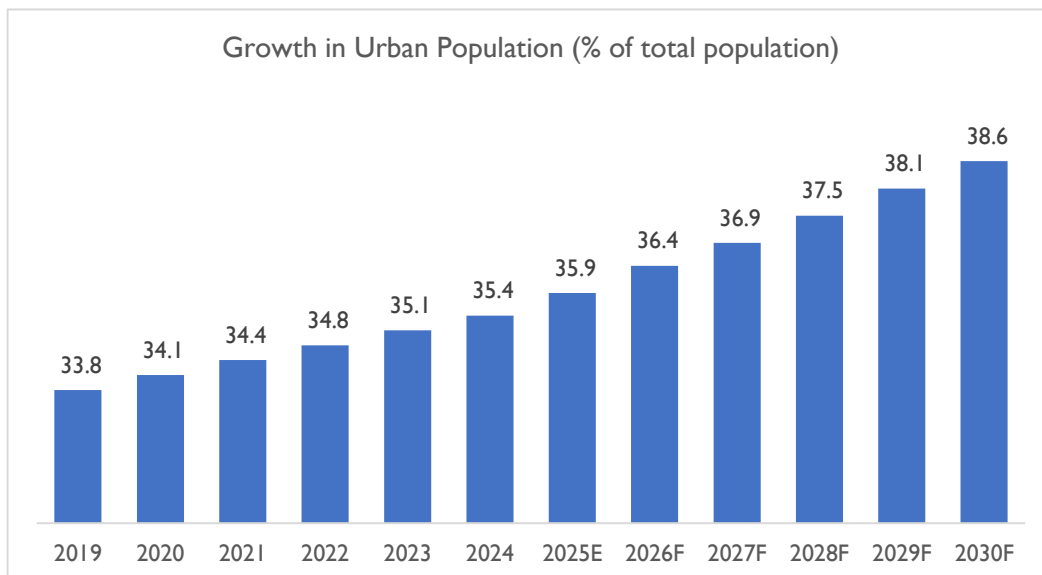


Source: IMF

From CY 2024 to CY 2031, India's per capita GDP is projected to grow at a compound annual growth rate of 7.9%. This growth will be driven by the service sector, which now accounts for over 50% of India's GDP, marking a significant shift from agriculture to services.

Increasing Urbanization

As per the Handbook of Urban Statistics 2022, India's urban population has been on a steady rise. Urban dwellers accounted for over 469 million in 2021 and are projected to rise to over 558 million by 2031 and further exceed 600 million by 2036.



The share of urban population in total population has been rising steadily. In 2019, 33.81% of the total population was urban. By 2025, it had reached 35.9%, showing an increase over a span of five years of about 2.10%. The share of urban population is further forecasted to cross 38.6% by 2030. This increase in urban population is set to demand drastic changes in infrastructure development. Cities are a major driver for the construction industry. With cities expanding rapidly, there will be an increased need for improved housing, water supply, sewage systems, and electricity. Urban planning will need to account for higher population densities, necessitating the development of smart cities with integrated technology for efficient management of resources and services. The Smart Cities Mission targeted at 100 cities is aimed at improving the quality of life through modernised, technology-driven urban planning. This transformation will also require significant investment in public health, education, and recreational facilities to enhance the quality of urban living. The surge in urban population will also propel demand for improvement in multimodal transport infrastructure for freight and passenger travel requirements.

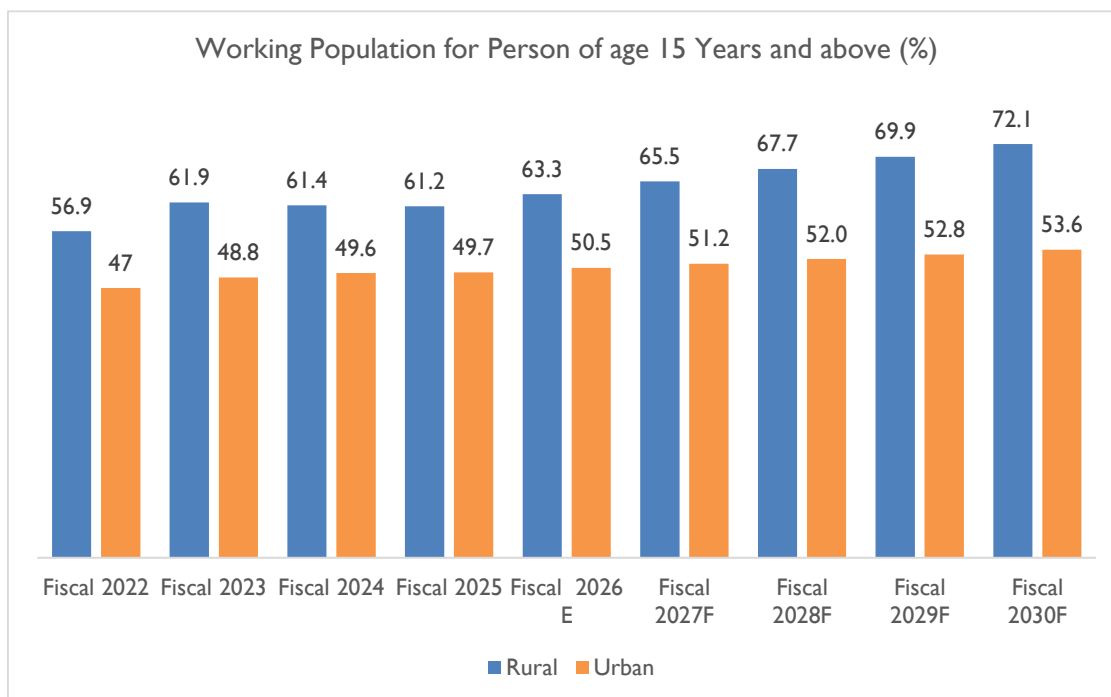
Rural vs. Urban Working Population by Age Group

As India continues to experience economic growth and development, the working population in both rural and urban areas is increasing. In the case of the urban population, this growth is reflected in the increase from a share of 47% in FY22 to 49.7% in FY25, whereas in rural areas, it grew from 56.9% in FY22 to 61.2% in FY25.

This growth is driven by a combination of factors, including demographic changes, economic policies, and the expansion of various industries. The rise in employment opportunities across sectors such as agriculture, manufacturing, services, and information technology has contributed to the overall increase in the working population, thereby fostering economic stability and enhancing the standard of living for many Indians.

⁹<https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?end=2022&locations=IN&skipRedirection=true&start=1960&view=chart>





Source: Periodic Labour Force Survey (PLFS) Annual Report, Dun & Bradstreet Research and Estimates

Note: 2025 refers to the period January 2025 – December 2025 and likewise for 2024, 2023 and 2022

In urban areas, the working population is growing rapidly due to the proliferation of jobs in sectors like IT, finance, retail, and healthcare. Additionally, the development of infrastructure, such as improved transportation networks and housing, has made urban centers more accessible and desirable for the working population. In rural areas, the working population remains substantial, primarily due to the dominance of the agricultural sector. Government initiatives aimed at rural development, such as improved access to education and skill development programs, have also played a crucial role in enhancing employment prospects in these regions.

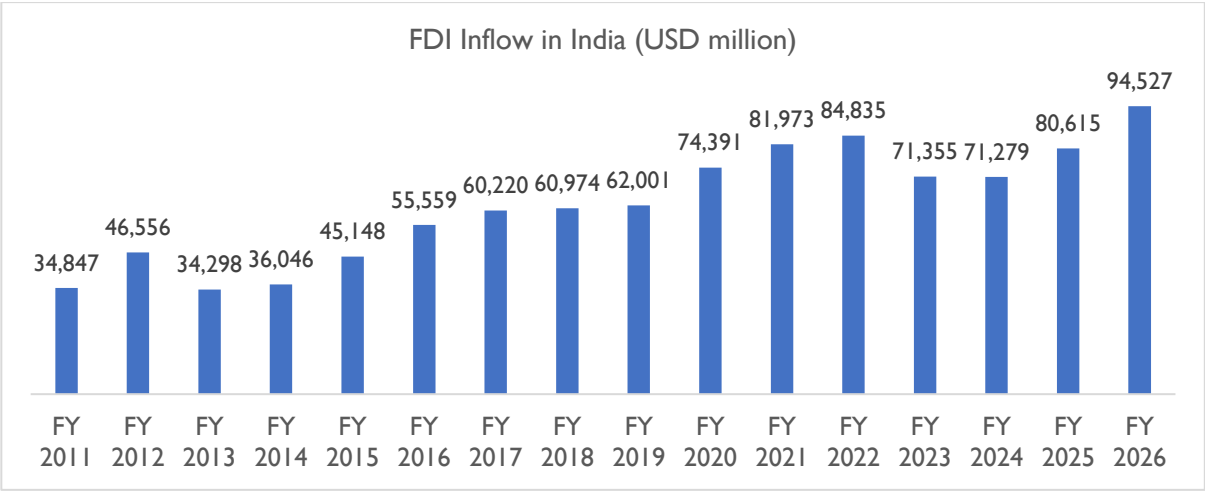
The dominance of the rural working population over its urban counterpart can be attributed to the labour-intensive nature of the agricultural sector, which ensures a consistent demand for human labor despite advancements in mechanization, sustaining employment rates in rural areas.

Foreign Direct Investment Trend in India

FDI inflows in India observed a steady increase from FY 2013 to FY 2022 while it witnessed a decline of 15% in FY 2023 and a decline of 0.1% in FY 2024 due to several factors, including the ongoing conflict between Russia and Ukraine, changes in US monetary policy, and other global uncertainties. However, the country has received substantial FDI inflows from April 2000 to March 2026. This increasing FDI can be attributed to the new investment facilitation measures like the National Single-Window System (NSWS), which streamlines the approval and clearance process for investors, entrepreneurs, and businesses, along with sectoral measures and PLI schemes, supporting growth prospects in tier-2 and tier-3 cities. Further, tax compliance for startups and



foreign investors has been simplified and the Income Tax Act, 1961, was amended in 2024 to abolish angel tax and to reduce income tax rate chargeable on income of a foreign company.



Sources: Department for Promotion of Industry and Internal Trade



Electrical Equipment Industry

Overview

The electrical equipment industry is a critical component of India's industrial and infrastructure ecosystem, supporting the generation, transmission, distribution and utilisation of electricity. The industry comprises a wide range of equipment, including generators, turbines, transformers, switchgear, circuit breakers, relays, control and protection equipment, motors and associated electrical components and accessories. The sector caters to power utilities as well as industrial, infrastructure, commercial and residential applications.

The Ministry of Heavy Industries (MHI) identifies heavy electrical engineering as a critical manufacturing sector serving the energy and other industrial sectors. The performance of the sector is closely linked to India's power capacity addition programme, while the domestic manufacturing base has capabilities across major categories of power-generation and transmission and distribution equipment.

- **Expansion of India's Power Infrastructure**

The growth of India's electricity infrastructure continues to provide a fundamental demand base for electrical equipment. According to the Ministry of Power, India's total installed generation capacity stood at 532.74 GW as of FY2026,¹⁰ reflecting continued capacity addition to meet rising electricity requirements. Electricity generation increased to approximately 1,847.9 billion units (BU) in FY2026, compared with approximately 1,829.7 BU in FY2025.¹¹

- **Renewable Energy Transition Supporting Electrical Equipment Demand**

India's electricity-generation mix is undergoing a structural transition towards renewable sources. As of 31 March 2026, India's renewable energy capacity, including large hydro, reached 274.68 GW, comprising 150.26 GW of solar power, 56.09 GW of wind power, 51.41 GW of large hydro, 11.75 GW of bioenergy and 5.17 GW of small hydro. During FY2025-26, India added a record 55.29 GW of non-fossil fuel capacity, while solar capacity addition reached an all-time high of 44.61 GW.¹²

The rapid expansion of renewable energy is increasing requirements for grid connectivity, substations, power evacuation systems, transformers, switchgear, protection and control equipment. The Government has planned transmission systems to integrate more than 500 GW of renewable energy capacity by 2030, supporting continued investment in grid infrastructure and associated electrical equipment.

¹⁰ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2270740&lang=1®=48&utm>

¹¹ <https://www.powermin.gov.in/static/uploads/2026/05/79a76e18613c2bfed12b37f426da5c39.pdf?utm>

¹² <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2250039&lang=1®=3&utm>



The increasing penetration of variable renewable sources such as solar and wind is also creating greater requirements for grid modernisation, energy-storage systems, advanced protection systems and digital monitoring and control technologies to maintain grid stability and manage variability in power generation.

- **Transmission and Distribution Infrastructure Development**

Expansion and modernisation of India's transmission and distribution (T&D) network is essential to integrate new generation capacity and deliver electricity to consumption centres. The increasing geographical concentration of renewable-energy projects in resource-rich regions is further driving investment in power evacuation infrastructure and inter-regional transmission capacity.

T&D projects require a wide range of electrical equipment and components, including power transformers, switchgear, circuit breakers, isolators, protection and control systems, conductors, cables and related accessories. In addition to new projects, the replacement and modernisation of ageing T&D assets provide a recurring demand base for electrical components and accessories.

- **Industrial and Infrastructure Applications**

Electrical equipment and accessories are used across a diversified range of end-use sectors, including manufacturing, construction, transportation, commercial real estate, healthcare, data centres, institutional buildings and residential developments.

Industrial expansion drives demand for electrical systems supporting power distribution, process control, automation and protection, while construction and infrastructure development require electrical installations across buildings and facilities. This broad application base provides diversified demand for electrical accessories such as switches, sockets, connectors, terminals, wiring devices, cable accessories, protective components and control accessories.

- **Increasing Digitalisation and Technology Adoption**

India's electrical infrastructure is increasingly transitioning from conventional systems towards digitally enabled, automated and intelligent solutions. Modern switchgear and protection systems are incorporating electronic relays, monitoring, signalling and control capabilities to improve system reliability and operational efficiency.

The adoption of digital protection, monitoring and control systems is expected to increase demand for higher-specification electrical components and accessories that enable reliable connections, signalling, control and integration with modern electrical systems.

- **Increasing Focus on Quality and Safety**



The Government of India has strengthened the regulatory framework for electrical equipment through Quality Control Orders (QCOs), technical regulations and applicable product standards, with the objective of improving product quality, reliability and electrical safety.

The Electrical Equipment (Quality Control) Order issued by the Ministry of Heavy Industries covers specified electrical equipment categories and has been supplemented by subsequent amendments and implementation-related notifications. Increasing emphasis on compliance is expected to favour organised manufacturers with established quality-control systems and the capability to meet prescribed technical and safety standards.

- **Domestic Manufacturing Base**

India has an established domestic manufacturing ecosystem covering key categories of electrical equipment, including transformers, switchgear, protection and control systems, power-generation equipment and other electrical products.

The development of domestic manufacturing capabilities, together with continued expansion of electricity infrastructure, provides opportunities for component manufacturers and suppliers across the electrical equipment value chain. Increasing localisation of manufacturing and the emphasis on resilient domestic supply chains are expected to support demand for locally manufactured electrical components and accessories.

Key Industry Growth Drivers:

The electrical equipment industry is expected to be supported by rising electricity demand and generation, which increases the need for power-generation and distribution infrastructure. Expansion of installed power-generation capacity and large-scale renewable-energy additions will drive requirements for electrical equipment associated with generation, grid connectivity and power evacuation. Expansion and modernisation of transmission and distribution networks, along with increasing grid-integration and energy-storage requirements, will create additional demand for transformers, switchgear, protection systems, cables and related components. At the same time, industrialisation, manufacturing-sector expansion, infrastructure development and commercial construction will increase demand for electrical installations across industrial and building applications. Electrification and automation of industrial processes are expected to support demand for more advanced electrical systems, while replacement and modernisation of ageing electrical assets will provide recurring demand. Further, the adoption of digital and smart electrical systems and increasing emphasis on electrical safety, product quality and energy efficiency are expected to support the shift towards higher-specification electrical equipment and components.

Global Electrical Equipment Industry

The global electrical equipment industry is supported by rising electricity consumption, increasing electrification and continued investment in power-generation, transmission and distribution infrastructure. According to the



International Energy Agency (IEA), global electricity demand is forecast to grow at an average annual rate of 3.6% during 2026–2030, reaching approximately 33,600 TWh by 2030, compared with 28,200 TWh in 2025. Growth is being driven by industrial activity, electric vehicles, space cooling, data centres and the broader electrification of end-use sectors.

The transition towards renewable energy is further increasing the requirement for electrical infrastructure. Renewables and nuclear power are expected to account for around 50% of global electricity generation by 2030, while the share of variable renewable sources such as solar PV and wind is expected to increase significantly. This is driving investment in grid expansion, power evacuation, substations, transformers, switchgear, protection systems, cables and other electrical components required to integrate distributed and variable power generation.

Grid development is emerging as a major growth area for the electrical equipment industry. The IEA estimates that annual global grid investment, currently around US\$400 billion, needs to increase by approximately 50% by 2030 to meet rising electricity demand. More than 2,500 GW of renewable, storage and large-load projects are currently stalled in grid connection queues, highlighting the need for accelerated grid expansion and modernisation.¹³

In parallel, rapid growth in data centres, electric mobility, industrial automation, energy storage and digital electrical systems is creating additional demand for reliable and higher-performance electrical infrastructure. The increasing adoption of smart-grid technologies, digital monitoring, advanced protection and automated control systems is also supporting demand for higher-specification electrical equipment and components.

Overall, the global electrical equipment industry is expected to benefit from the combined impact of rising electricity demand, renewable-energy expansion, grid modernisation, electrification, industrialisation and digitalisation. These trends provide a broad and growing demand base for electrical equipment manufacturers and, consequently, for suppliers of electrical accessories and components used in power, industrial, commercial and building applications.

Consumer Electrical Equipment Industry in India

India's consumer electrical equipment industry is supported by increasing household electrification, urbanisation, rising disposable incomes and growing appliance penetration. The industry includes products such as air conditioners, refrigerators, washing machines, electric water heaters, fans, televisions, lighting products and other household electrical appliances. Continued residential construction, improving household electricity access and rising appliance ownership are expected to support both new installations and replacement demand.

¹³ <https://www.iea.org/reports/electricity-2026/demand?utm>



The increasing focus on energy efficiency is also influencing the consumer electrical equipment market. The Bureau of Energy Efficiency (BEE) operates the Standards & Labelling Programme to help consumers compare the energy performance of appliances and encourage the adoption of energy-efficient products. The programme covers 38 appliance categories, with 3,662 registered brands and approximately 58 crore star-labelled appliances, and has resulted in estimated energy savings of 89.80 billion units.

The shift towards energy-efficient and electronically controlled appliances is increasing the requirement for efficient motors, electronic controls, improved wiring systems, protection devices and other higher-performance electrical components. BEE's mandatory and voluntary labelling categories include products such as air conditioners, refrigerators, electric water heaters, LED lamps, ceiling fans, washing machines, computers, pumps and inverters, reflecting the broad application base for electrical components within consumer equipment.

In addition, residential construction, renovation and replacement of ageing household electrical systems provide recurring demand for electrical accessories. New residential developments require electrical accessories during installation, while renovation and replacement activities generate demand from existing households. Rising consumer preference for premium, connected and energy-efficient appliances is also expected to increase the use of higher-quality wiring, connectors, terminals, protection devices and control-related components.

For electrical accessories manufacturers, growth in consumer electrical equipment therefore provides a diversified downstream demand opportunity. Appliances and household electrical installations require products such as switches, sockets, connectors, terminals, wiring devices, cable accessories, protective components and control-related accessories. The combined impact of appliance penetration, residential construction, replacement demand, energy efficiency and increasing electronic functionality is expected to support long-term demand for reliable, safety-compliant and higher-specification electrical accessories.



Fast-Moving Electrical Goods (FMEG)

Fast-Moving Electrical Goods (FMEG) are category of electrical products that are non-durable, frequently purchased, and widely used across residential, commercial, and industrial applications, characterized by high sales volume, shorter replacement cycles, and strong consumer demand. These products form an essential part of everyday electrical usage and infrastructure, making them a key segment within the broader electrical equipment industry.

FMEG represents a broad segment comprising products with high demand and extensive usage across various end-use sectors. These products are largely consumer-driven and retail-oriented, forming an essential part of electrical infrastructure, safety systems, and daily utility. The segment includes a wide range of product categories such as:

Product Category	Overview of Product Category
Power Distribution Products (LV switchgear & protection devices)	MCBs, RCCBs, distribution boards, and related safety equipment used for circuit protection and load management
PVC / Electrical Insulation Tape	These are used for insulation, protection, and bundling of electrical wires and cables
Electrical Wires & Cables (Focus on LT Power Cable)	These include PVC and XLPE insulated cables used for low-voltage power transmission and internal wiring
Switches & Sockets	Comprising conventional and modular switches used for controlling electrical circuits in residential and commercial spaces
LED Lighting	Energy-efficient lighting solutions including bulbs, tubes, panels, and street lighting systems
Fans	Ceiling, table, pedestal, and exhaust fans used for ventilation and cooling
Water Heaters (Geysers)	electric powered storage and instant water heating systems
Pumps	domestic and industrial pumps used for water supply, irrigation, and fluid handling
Modular Switches and Accessories	Aesthetically designed, safety-compliant switch systems with enhanced functionality
Conduits & Fittings	PVC conduits, pipes, and accessories used for cable management and protection
Home Electrical Appliances	small appliances such as irons, mixer grinders, and other household electrical devices
Solar Electrical Products	solar cables, inverters, and related components supporting renewable energy systems



Smart Home Solutions / Automation Products	IoT-enabled switches, lighting, and control systems for automation and energy management
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The FMEG market in India is experiencing strong and sustained growth, driven by factors such as rapid urbanization, increasing disposable incomes, rising housing demand, and expansion of commercial infrastructure. Government initiatives related to electrification, smart cities, housing development, and renewable energy adoption are further accelerating demand across product categories. Additionally, there is a growing shift toward energy-efficient, safe, and technologically advanced products, such as LED lighting, smart switches, and fire-resistant cables, driven by increased awareness of safety standards and energy conservation.

The industry is highly competitive and fragmented, with a mix of large organized players and numerous unorganized manufacturers. While the unorganized sector dominates low-cost, commoditized segments, the organized sector is steadily gaining market share due to better quality assurance, compliance with safety regulations, brand trust, and extensive distribution networks. Companies are increasingly focusing on product innovation, premiumization, and digital integration, particularly in areas such as smart home solutions and energy-efficient appliances.

However, the industry faces challenges such as volatility in raw material prices (copper, aluminium, PVC, and plastics), which impacts production costs and margins, along with intense price competition in commoditized segments. Despite these challenges, the FMEG sector is gradually transitioning from a volume-driven market to a value-driven and brand-led industry, supported by evolving consumer preferences, regulatory focus on safety and efficiency, and increasing adoption of advanced electrical solutions.



LED lighting

Overview

The LED lighting industry in India has evolved significantly from niche, high-cost applications to widespread adoption, playing a key role in energy efficiency and infrastructure development. Prior to 2010, LED usage was limited to indicators and signage due to high costs and low awareness, with the market dominated by incandescent and CFL lighting. Between 2010 and 2015, government support and initiatives such as those by EESL helped promote early adoption, supported by improving technology and growing manufacturer participation.

Post-2020, the industry has entered a maturity phase characterized by high penetration levels (80–90% in residential and street lighting), improved efficiency, and a shift toward domestic manufacturing supported by PLI schemes, with increasing focus on smart, connected, and application-specific lighting solutions aligned with sustainability and smart city initiatives.

Solar Lighting Segment

The solar lighting segment has gained traction with the increasing focus on renewable energy, energy efficiency, and decentralized power solutions. Solar LED street lights, flood lights, garden lights, pathway lights, and solar home lighting systems are increasingly used across roads, public spaces, rural areas, industrial sites, and other locations with limited or costly grid connectivity. As per MNRE, India has installed around 9.45 lakh solar street lights and 17.23 lakh solar home lighting systems¹⁴ under its off-grid solar programmes, highlighting the established deployment base for solar lighting solutions. Improvements in solar panel efficiency, battery storage, LED performance, and integrated controls are further supporting adoption. The broader solar ecosystem is also expanding rapidly, with India's cumulative solar capacity reaching 150.26 GW as of March 2026, providing a favourable policy and infrastructure environment for solar-based applications.

Architectural Lighting Segment:

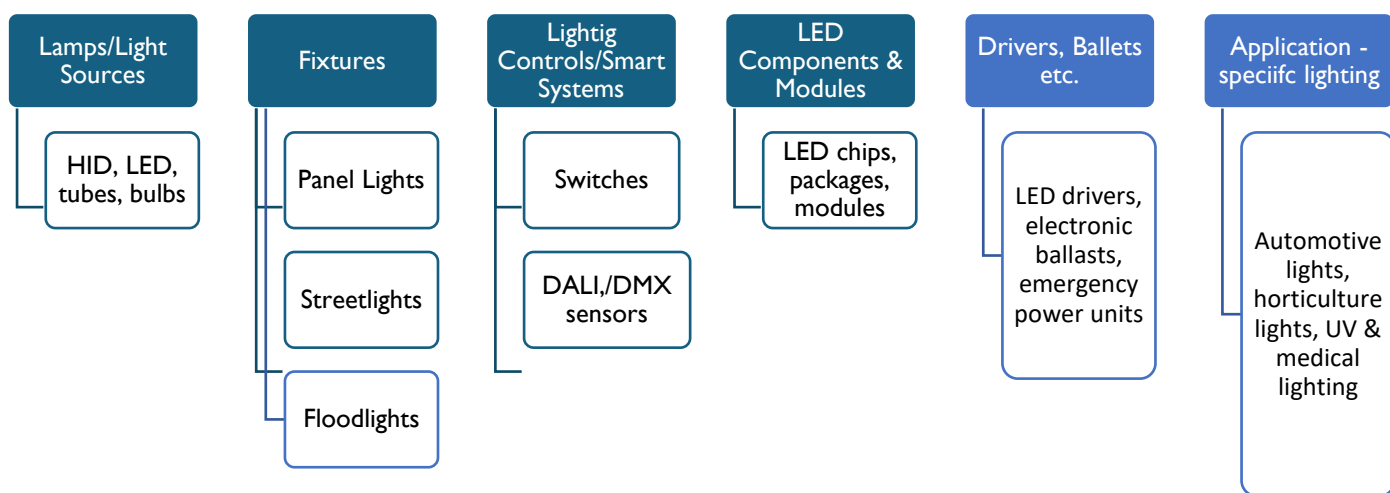
The architectural lighting segment is evolving from conventional illumination toward energy-efficient, aesthetic, and application-specific lighting solutions for residential, commercial, hospitality, retail, and institutional spaces. Products such as recessed lights, downlights, spotlights, linear lights, LED strips, wall washers, façade lighting, and decorative luminaires are increasingly being integrated into building interiors and exteriors to enhance both functionality and visual appeal. The segment is further supported by urbanisation, premium real estate development, modern interior design, and growing adoption of smart lighting, sensors, dimming, and connected

¹⁴ <https://mnre.gov.in/en/solar-off-grid/?utm>



controls, creating opportunities for manufacturers to expand into customised and higher-value lighting applications.

Key Product Segments

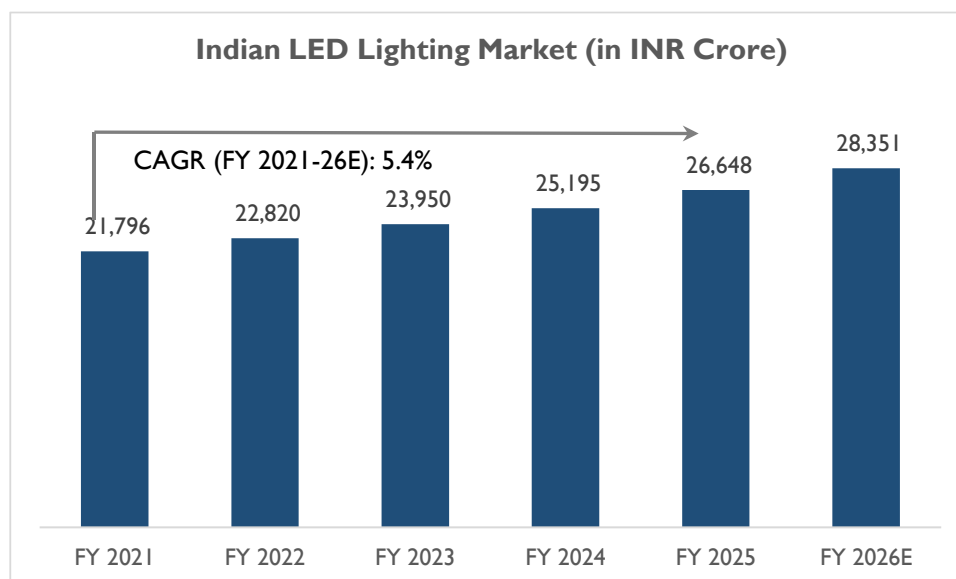


Indian Market Scenario

The Indian LED lighting industry has demonstrated steady and resilient growth, driven by the rapid shift toward energy-efficient lighting solutions and increasing awareness of electricity cost savings. Strong demand across residential, commercial, industrial, and public infrastructure segments, along with continued urbanization and expansion of real estate, has supported sustained market momentum. Government-led initiatives promoting energy efficiency and domestic manufacturing have further strengthened the industry's growth fundamentals.



The market has expanded from INR 21,796 crore in FY 2021 to an estimated INR 28,351 crore by FY 2026, growing by a CAGR of nearly 5.4% during the period. This consistent growth underscores the ongoing replacement of conventional lighting with LEDs, improving product affordability, and advancements in technology leading to higher efficiency and longer lifespans. Going forward, the industry is well-positioned to maintain a steady growth trajectory, supported by structural drivers and continued policy support.

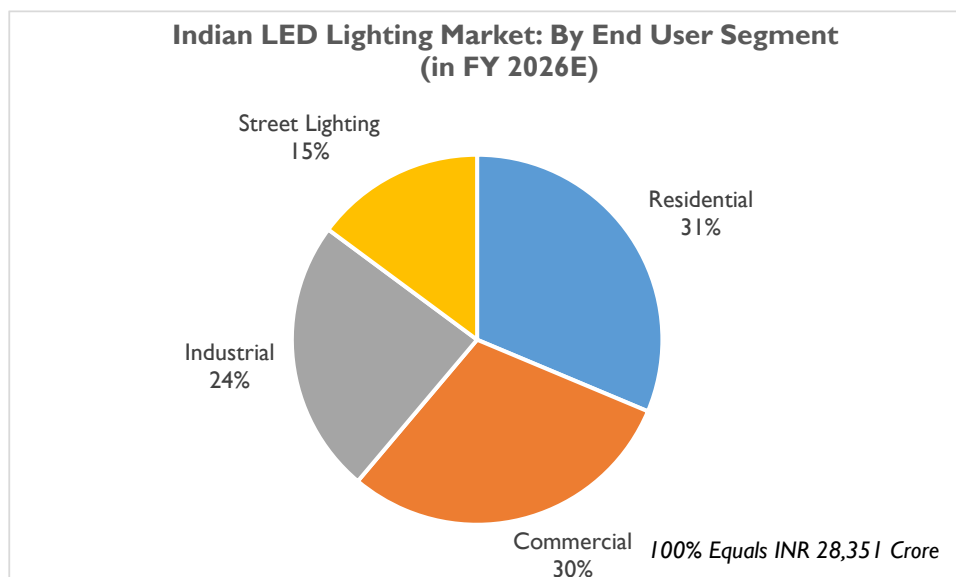


Source: D&B Primary Research Estimates

Market Segmentation: By End User Segment

Based on end user industry demand, the residential segment accounted for the largest share followed by Commercial, industrial and street lighting sector while Industrial sector has been witnessing the fastest growth over the past five fiscal.





Source: D&B Primary Research Estimates

Demand Scenario

Declining LED Prices & Mass Affordability: A sharp decline in LED prices has been a major driver of adoption across segments. Factors such as domestic manufacturing scale, competitive intensity, and government-led bulk procurement (e.g., EESL tenders under UJALA) have significantly reduced costs. Prices of 9W LED bulbs dropped from over INR 300 in 2013 to ~INR 70 currently, making LEDs comparable or cheaper than conventional lighting. This has enabled mass adoption across households, small businesses, and public infrastructure.

Policy Push & UJALA Scheme Impact: Government intervention, particularly through the UJALA scheme, has been transformative in driving LED penetration. Over 36 crore LED bulbs have been distributed, generating significant savings in electricity costs and reducing peak demand. The scheme's competitive procurement model lowered upfront prices while ensuring quality, making LEDs the most cost-effective lighting option when considering lifecycle costs (energy use + maintenance). This policy-led affordability shift has made LEDs the default lighting solution in India.

Superior Energy Efficiency & Lifecycle Advantage: LEDs offer substantial energy savings- consuming ~50% less electricity than CFLs and ~90% less than incandescent lamps- resulting in significantly lower operating costs. Their longer lifespan further reduces replacement and maintenance expenses. This strong lifecycle cost advantage has been a key factor in replacing traditional lighting across residential, commercial, and industrial segments.

Renewable Integration – Solar LEDs: The combination of LED lighting with solar power is emerging as a key growth driver, especially for rural and off-grid applications. Government programs (MNRE's off-grid solar

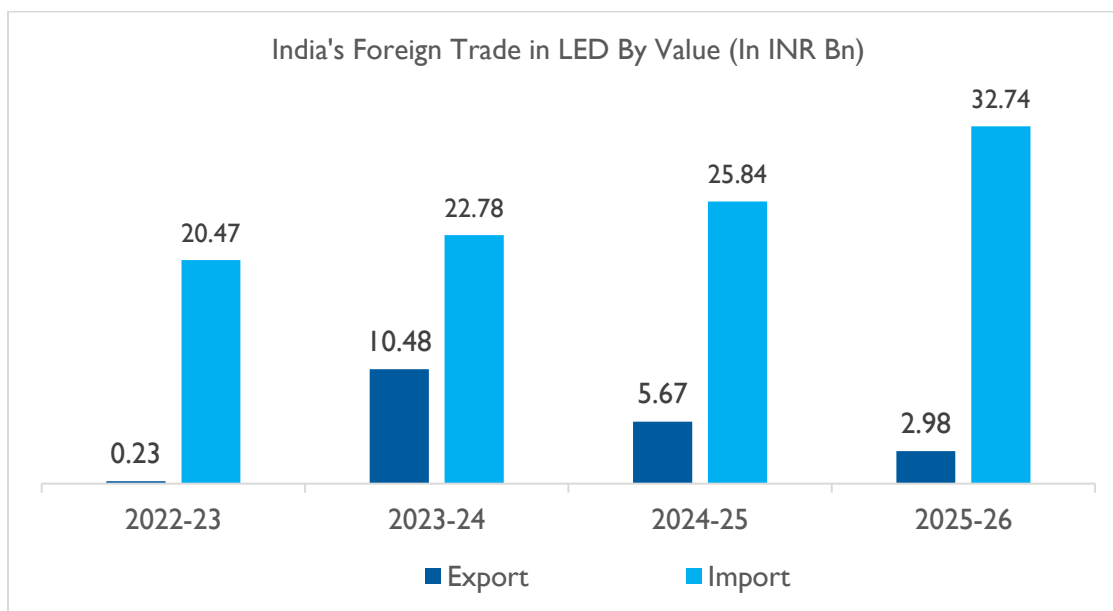


schemes, PM-KUSUM, Smart Cities) and subsidies have accelerated adoption of solar-powered LED streetlights and home lighting systems. Declining solar module prices and improved battery technologies are further enhancing the viability of this segment.

Urbanization & Infrastructure Development: Rapid urbanization and infrastructure expansion are driving large-scale demand for LED lighting. With urban population expected to reach ~600 million, coupled with increased government capex in infrastructure (smart cities, metros, roads, airports), LEDs are being widely adopted due to their energy efficiency and low maintenance. Growth in real estate and public infrastructure continues to reinforce long-term demand.

Export and Import Scenario

India continues to be a net importer of LED lighting products, with imports showing a consistent upward trend over the past four years, reflecting strong domestic demand and continued dependence on external supply. Import values rose steadily from INR 20.47 billion in FY 2022–23 to INR 22.78 billion in FY 2023–24, and further increased to INR 25.84 billion in FY 2024–25 and INR 32.74 billion in FY 2025–26, driven by factors such as rapid urbanization, infrastructure expansion, and growing adoption of energy-efficient lighting. Despite progress in domestic manufacturing, the industry continues to rely on imports for certain components and finished products, with the widening gap between imports and exports underscoring a sustained, demand-led growth phase.



Sources: CMIE Industry Outlook

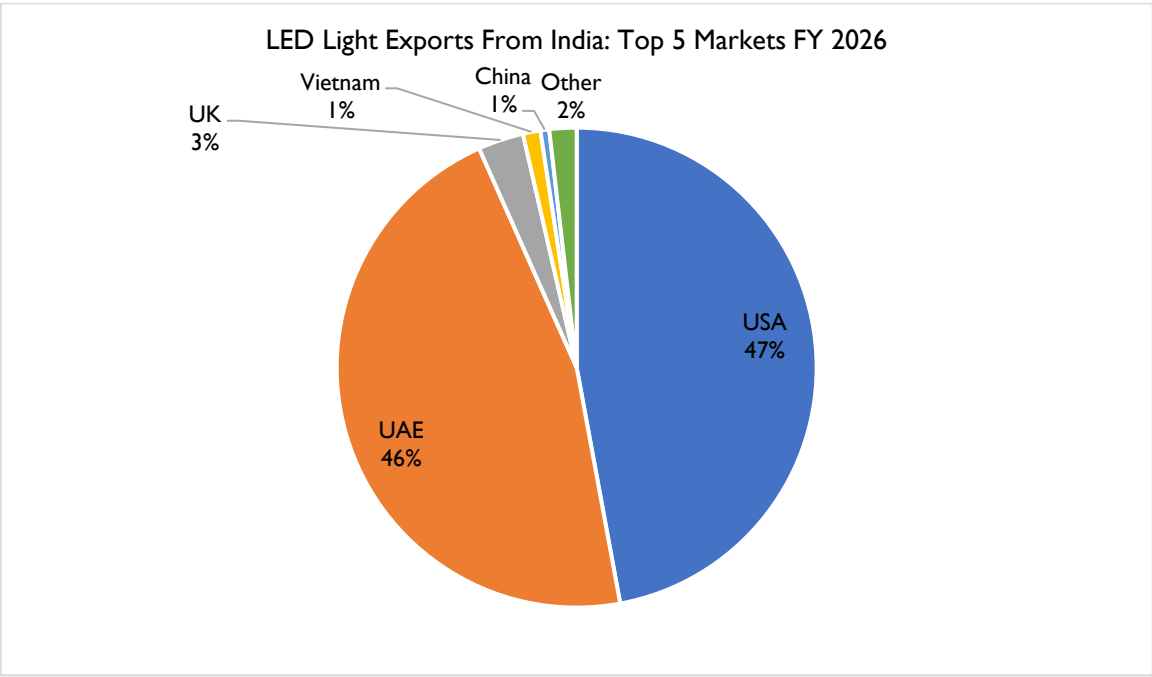
In contrast, export performance has remained relatively volatile. Exports were modest at INR 0.23 billion in FY 2022–23, before witnessing a sharp surge to INR 10.48 billion in FY 2023–24, supported by improved manufacturing capabilities and rising global demand. Exports then moderated to INR 5.67 billion in FY 2024–25



and declined further to INR 2.98 billion in FY 2025–26, pointing to a continued normalization after the FY 2023–24 spike. While export levels remain above the FY 2022–23 base, the widening trade gap imports more than doubling from FY 2023–24 to FY 2025–26 while exports have fallen for two consecutive years highlights a growing need to strengthen the industry's export competitiveness.

Top Export Markets

The country-wise export distribution of India’s LED lighting sector in FY2026 remains highly concentrated among a few key markets. The United States leads with a share of approximately 47%, followed by the UAE (approximately 46%), reflecting the importance of North America and the Middle East as key export destinations. The UK accounts for approximately 3%, while Vietnam and China contribute around 1% each. Together, the United States and UAE account for over 93% of total exports, highlighting the sector’s substantial reliance on these two markets. This concentration underscores the importance of broader geographic diversification to support more balanced and stable export growth.



Source: CMIE Industry Outlook

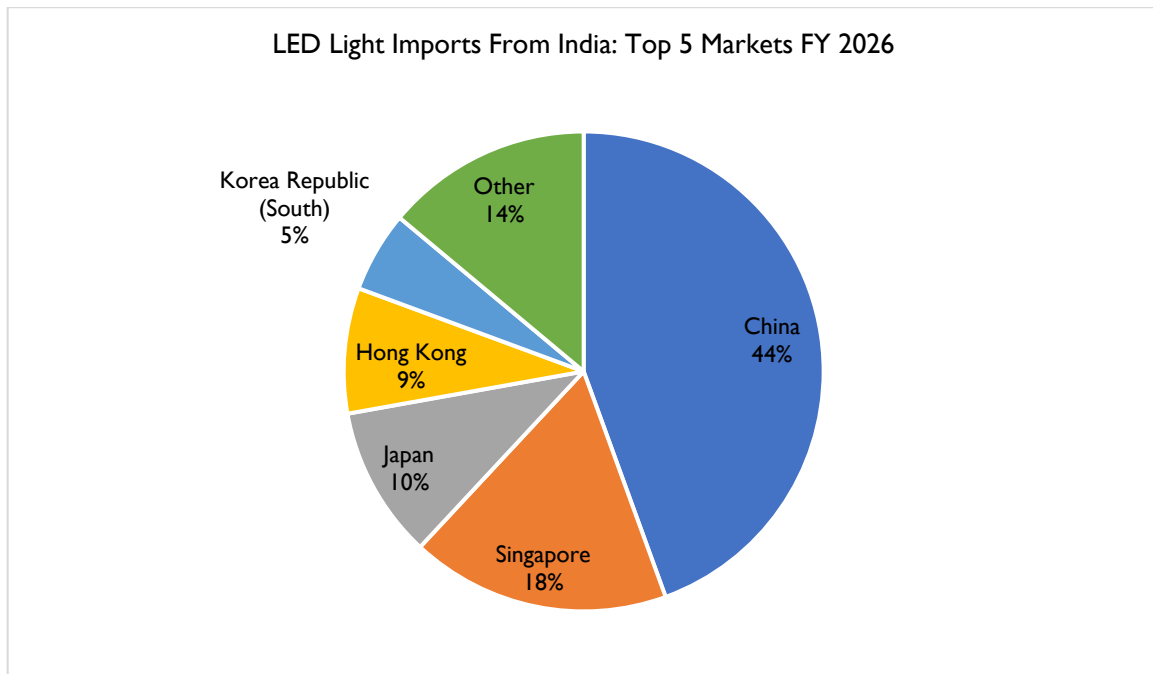
Top Import Partners

The country-wise import distribution of India’s LED lighting sector in FY2026 indicates a relatively diversified sourcing structure, although it remains dominated by a few key suppliers. China leads with a significant share of 44%, highlighting strong dependence on its large-scale manufacturing capabilities. This is followed by Singapore



(18%), Japan (10%), Hong Kong (9%) and South Korea (5%), reflecting the importance of Asian economies in India's LED lighting supply chain.

The “Others” category (14%) reflects a degree of diversification across additional markets. Overall, while the sourcing base is moderately spread, the dominance of China underscores continued reliance on a single major supplier, with other Asian economies playing a complementary role in meeting domestic demand.



Sources: CMIE Industry Outlook

Regulatory Landscape

India's LED lighting industry is governed by an integrated regulatory framework that combines **energy** efficiency policy, product certification, industrial incentives, and trade compliance. Key institutions include the Ministry of Power, Bureau of Energy Efficiency (BEE), and EESL for demand creation, alongside BIS and MeitY for product certification, DPIIT for manufacturing incentives, and DGFT and MoEFCC for trade and environmental compliance. This framework ensures that LEDs are regulated not just as electrical products but also as energy-efficiency enablers and a priority manufacturing sector.

At the core is the Energy Conservation Act, 2001, under which BEE mandates standards & labeling (S&L) for LED products, shifting competition toward performance and efficiency rather than price alone. The UJALA scheme,



implemented by EESL, has been a transformative demand driver—leveraging bulk procurement to reduce LED prices significantly while improving product efficiency and quality standards. This policy-led market creation has accelerated adoption and formalized the industry.

Product-level compliance is governed through the BIS Compulsory Registration Scheme (CRS), covering LED lamps, luminaires, and control gear, with ongoing updates such as the transition to revised standards (e.g., IS 16102(Part 1):2026) increasing compliance requirements. On the supply side, the PLI Scheme for White Goods (LEDs and ACs) is promoting domestic manufacturing and localization across components like drivers, modules, and PCBs, reducing import dependence and enhancing supply chain resilience.

Trade and lifecycle compliance are managed through the Foreign Trade Policy (FTP) 2023, BIS-linked import requirements, and environmental regulations such as the E-Waste Management Rules, 2022, along with packaging norms under Legal Metrology Rules, 2011.

Key Market Trends

Shift Toward Smart and Connected Lighting: The Indian LED industry is witnessing a gradual transition from standalone lighting products to smart and connected lighting systems. Adoption of IoT-enabled LEDs integrated with sensors, wireless controls, and centralized management platforms is gaining traction, particularly in commercial buildings, industrial facilities, and smart city projects. This shift is enhancing energy efficiency, automation, and asset management capabilities, while enabling advanced features such as dimming, daylight harvesting, and predictive maintenance.

Increasing Product Premiumisation and Design-Led Differentiation: As the LED market matures, manufacturers are increasingly focusing on premium and design-oriented offerings to drive differentiation and improve margins. There is a growing demand for architectural lighting, decorative luminaires, and human-centric lighting solutions, especially in retail, hospitality, and commercial spaces. This reflects a broader shift from commoditized bulb sales to value-added lighting solutions and integrated design-focused offerings.

Localization of Manufacturing and Supply Chains: The LED industry is witnessing a strong push toward domestic manufacturing and supply chain localization, supported by government incentives and improving quality standards. Manufacturers are expanding capabilities in LED modules, drivers, electronics, and luminaires, reducing dependence on imports. This localization trend is enhancing cost competitiveness, supply chain resilience, and faster delivery timelines.

Growth of B2B, Institutional, and Project-Based Lighting: There is a clear shift toward project-driven and B2B-led demand, particularly in EPC projects, infrastructure, industrial installations, commercial real estate, and government tenders. This trend favors companies with strong execution capabilities, system integration



expertise, and after-sales support, over players focused solely on product sales. It also indicates increasing demand for integrated lighting solutions rather than standalone products.

Threats & Challenges

The Indian LED lighting industry, while benefiting from strong demand fundamentals and policy support, faces a range of structural and operational challenges that can impact profitability, scalability, and long-term sustainability.

Intense Price Competition & Margin Pressure: The market is highly fragmented, with the presence of numerous domestic brands, regional manufacturers, and unorganized players competing largely on price. A significant portion of demand—particularly from government tenders and bulk procurement programs—is driven by lowest-cost (L1) bidding mechanisms. This leads to continuous price erosion, especially in commoditized segments such as LED bulbs and tube lights, limiting pricing power and compressing margins. As a result, even established players struggle to maintain profitability while remaining competitive.

Dependence on Government and Institutional Demand: A large share of LED demand, particularly in segments such as street lighting, rural electrification, and public infrastructure, is driven by government schemes and institutional buyers. While these programs provide high-volume opportunities, they also introduce risks linked to policy changes, tender cycles, budget allocations, and payment timelines. Companies with a high dependence on such projects may face revenue volatility and working capital pressures due to delays in execution or receivable cycles.

Exposure to Raw Material Volatility & Import Dependence: Despite increasing localization efforts, critical components such as LED chips, semiconductor devices, drivers, and certain electronic parts continue to be largely import-dependent. This exposes manufacturers to global price fluctuations, currency movements, and supply chain disruptions. Any increase in input costs is difficult to pass on due to intense market competition, thereby impacting margins. Additionally, geopolitical uncertainties and logistics constraints can further disrupt component availability and production cycles.

Quality Inconsistencies & Unorganized Market Presence: The continued presence of low-quality and non-compliant LED products in the market remains a key concern. Many unorganized players offer products at significantly lower prices, often bypassing quality standards and certifications. These products may suffer from poor thermal management, inferior drivers, and shorter lifespans, leading to customer dissatisfaction and potential safety risks. Although regulatory frameworks such as BIS standards are being strengthened, enforcement gaps still allow such products to coexist with compliant offerings, affecting overall industry quality perception.

Rapid Technological Evolution & Risk of Obsolescence: The LED industry is characterized by rapid technological advancements, including improvements in luminous efficacy, optics, smart controls, and connected



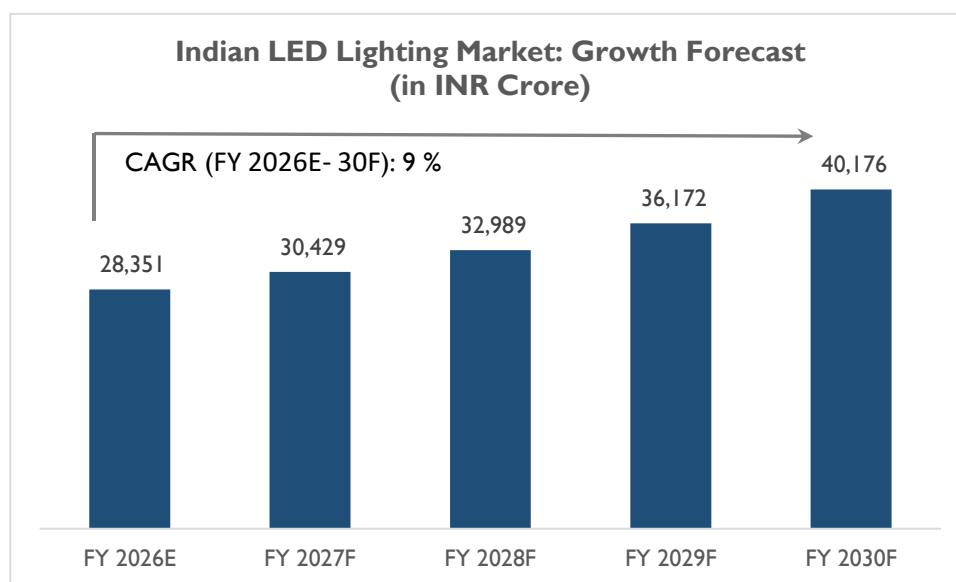
lighting systems. While this drives innovation, it also increases the risk of inventory obsolescence and short product lifecycles. Manufacturers must continuously invest in research and development, testing, and new product capabilities to stay competitive. This requirement places additional financial and operational strain, particularly on smaller players with limited resources.

Increasing Regulatory & Compliance Complexity: The regulatory environment is becoming more stringent, with evolving requirements related to energy efficiency (BEE labeling), product certification (BIS standards), and environmental compliance (e-waste management). While these regulations enhance product quality and consumer safety, they also increase compliance costs, extend approval timelines, and add operational complexity. Any delays in certification or non-compliance can disrupt product launches and supply continuity.

Growth Forecast

The Indian LED lighting market has demonstrated strong and sustained growth, supported by rising awareness of energy efficiency, favorable government policies, and continuous decline in LED prices. Rapid urbanization, expansion of infrastructure, and increasing adoption across residential, commercial, and industrial segments have further strengthened demand, with initiatives such as the UJALA scheme playing a pivotal role in accelerating nationwide penetration.

Going forward, the market is projected to grow from INR 28,251 crore in FY 2026 to approximately INR 40,176 Crore by FY 2030, growing by a CAGR of nearly 9%. This steady growth trajectory highlights increasing replacement of conventional lighting, expanding infrastructure investments, and rising preference for sustainable lighting solutions. Overall, the Indian LED lighting industry is well-positioned for long-term growth, driven by structural demand, policy support, and continued technological advancements.



Competitive Landscape

In contrast, the Indian LED lighting industry is relatively mature and intensely competitive, with a broad mix of multinational brands and strong domestic manufacturers. Competition is driven primarily by pricing, brand recognition, distribution reach, and product customization for residential, commercial, and infrastructure applications. Domestic players hold a strong advantage due to localized manufacturing, extensive dealer networks, and cost efficiency, while global players differentiate through superior design, durability, and smart lighting solutions. The market exhibits fragmentation in mass-market products such as bulbs and battens, while premium and institutional segments remain more consolidated.

Overall, the competitive dynamics of the semiconductor and LED industries in India differ significantly in maturity and structure. The semiconductor industry is capital- and technology-driven, with competition evolving around ecosystem building, policy support, and long-term capability creation, whereas the LED industry is volume-driven, price-sensitive, and market-oriented with immediate competitive pressures. In both sectors, government policy, localization initiatives, and innovation play a central role in shaping competitive advantage, but the semiconductor industry remains a long-gestation strategic play, while the LED industry reflects near-term market competition and consolidation trends.

Top Key Players

Company Name	Overview
IKIO Technologies Limited	IKIO Technologies Limited (formerly known as IKIO Lighting Limited) was incorporated in 2016 and is an Indian manufacturer and Original Design Manufacturer (ODM) of LED lighting, switches, hardware and recreational vehicle (RV) components, with its Corporate Office at Plot-10, Unit 1, Sector 156, Gautam Buddha Nagar (Noida), Uttar Pradesh – 201301. The company designs, develops, manufactures and supplies products that are distributed by its customers under their own brands and caters to customers in India and the USA. Its product portfolio includes LED lighting products, switches, hardware and components, serving residential, industrial and commercial applications. The company operates four manufacturing facilities and has manufacturing capabilities covering product design and development, tool and mould designing, plastic injection moulding, plastic extrusion, component fabrication, SMT and final assembly, and product testing and validation. Its R&D activities include developing ODM designs



	and evaluating OEM designs received from customers, including design improvement, raw-material selection and testing of trial products.
Focus Lighting and Fixtures Limited	Focus Lighting and Fixtures Limited was incorporated in 2005 and is headquartered in Mumbai, Maharashtra , with its Registered and Corporate Office at Goregaon (East), Mumbai – 400063. The company is engaged in the manufacturing and trading of LED lights, fixtures and lighting solutions, with a focus on retail and architectural lighting. Its business operates across Retail Lighting, Home Lighting, Infrastructure Lighting and Railways. The company develops lighting products and solutions incorporating technologies including reflector technology, Human Centric Lighting, Smart Lighting Control and IoT-based technologies. It has a manufacturing facility at New Ahmedabad Industrial Estate, Moraiya, Sanand, Gujarat.
Orient Electric Ltd	Orient Electric Limited , incorporated on 10 October 2016 , is a part of the CK Birla Group and a leading player in India's consumer electricals industry. The company operates across fans, lighting, home appliances, and switchgear segments, with a diversified lighting portfolio comprising LED lamps, luminaires, decorative lighting, outdoor lighting, and professional lighting solutions. Leveraging its established brand, extensive distribution network, and manufacturing capabilities, Orient Electric has built a significant presence in the Indian lighting market and continues to focus on innovation, energy efficiency, and smart lighting solutions.
Bajaj Electricals Ltd	Bajaj Electricals Limited , incorporated on 14 July 1938 , is one of India's established consumer electrical and lighting companies and a part of the reputed Bajaj Group . With a legacy spanning more than eight decades, the company has evolved into a diversified player across consumer appliances, fans, cookware, and lighting solutions. In the lighting segment, Bajaj Electricals offers a comprehensive portfolio of LED lamps, luminaires, street lighting systems, industrial and commercial lighting solutions, as well as specialized illumination products catering to residential, infrastructure, and urban development projects. Over the years, the company has built a strong brand presence and an extensive distribution network across India, enabling it to serve a broad customer base comprising households, businesses, government bodies, and infrastructure developers. Bajaj Electricals has strengthened its position in the lighting industry through its focus on energy-efficient LED technologies, product innovation, and execution of large-scale professional lighting projects. Supported by its longstanding market reputation and



	diversified product portfolio, the company remains a prominent participant in India's lighting market and is well positioned to benefit from the growing adoption of energy-efficient and technologically advanced lighting solutions
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PVC / Electrical Insulation Tapes

Overview

PVC electrical insulation tape is a pressure-sensitive adhesive tape manufactured using a flexible polyvinyl chloride (PVC) film backing coated with rubber or acrylic adhesive, primarily used for insulating, protecting, and bundling electrical wires and cables. It plays a crucial role in ensuring electrical safety and reliability by preventing short circuits, minimizing current leakage, and protecting conductors from moisture, abrasion, chemicals, and environmental exposure. The tape is widely preferred due to its high dielectric strength, flexibility, conformability, flame retardancy, and durability, making it suitable for application on irregular surfaces and in varying operating conditions.

Classification of PVC / Electrical Insulation Tapes

By Material Type	By Application	By End-User Industries
• PVC Electrical Insulation Tapes • Self-Bonding (Self-Amalgamating Tapes • Specialty Insulation Tapes	• Electrical Wiring • Automotive Wiring Harness • Electronics • Industrial Maintenance • HVAC • Utilities	• Electricals • Automotive • Consumer Durables • Electronics • Construction

Key Industry Stakeholders & Their Roles

Raw Material Suppliers: These stakeholders supply key inputs such as PVC resin, plasticizers, stabilizers, fillers, and chemical additives. They are often associated with large petrochemical and chemical companies and play a crucial role in determining the base quality, cost, and consistency of the final product.

Adhesive Manufacturers: Adhesive producers develop pressure-sensitive formulations (rubber-based or acrylic-based) that define the tape's bonding strength, durability, and resistance to environmental factors. Their role is critical in enhancing product performance and differentiation.

Tape Manufacturers / Converters: These are the core producers who convert raw materials into finished PVC insulation tapes through processes such as calendaring, adhesive coating, curing, slitting, and packaging. They ensure product quality, compliance with standards, and scalability of production. Manufacturers may range from large organized players to small and medium regional units.



Distributors & Wholesalers: These intermediaries facilitate the movement of products from manufacturers to various markets. They maintain inventory, manage logistics, and ensure the availability of tapes across retail outlets and industrial buyers.

Retailers: Retailers act as the final link in the supply chain, providing easy access to products for small-scale buyers such as electricians and local contractors. They also influence brand visibility and customer preference.

End Users (Electricians, Contractors, OEMs): The final consumers of PVC insulation tapes include electricians, construction contractors, maintenance teams, and original equipment manufacturers (OEMs). They use these tapes for insulation, bundling, protection, and repair in electrical and industrial applications.

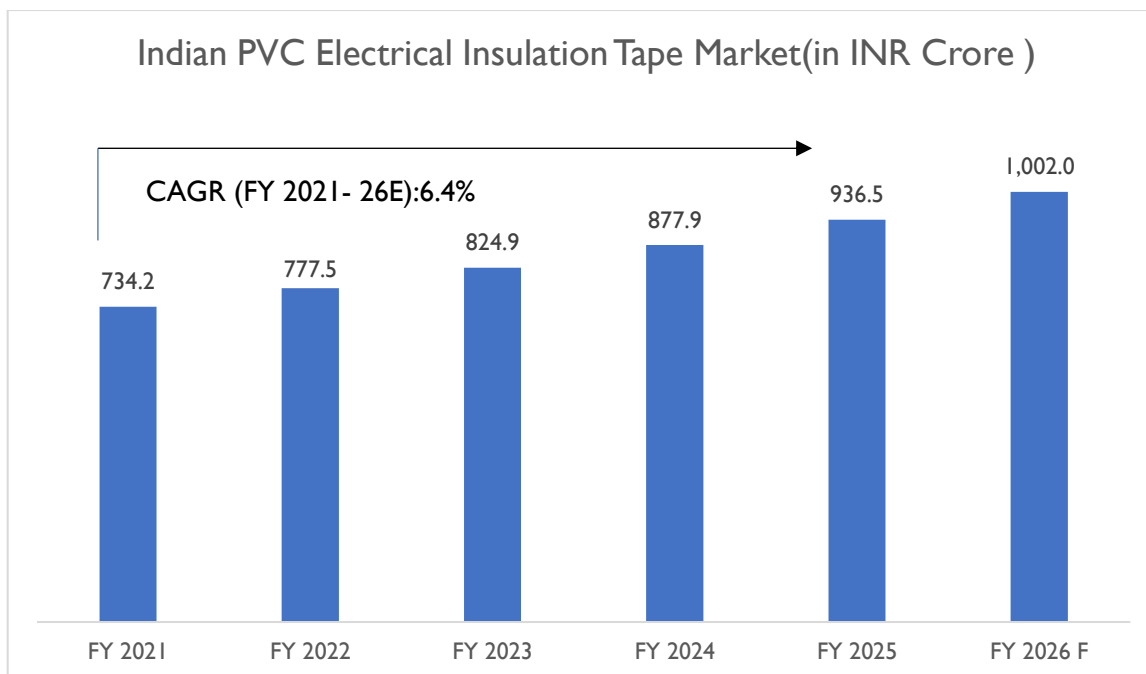
Import Dependency

India has a relatively well-established domestic manufacturing base for PVC electrical insulation tapes; however, there is a degree of import dependency within the value chain. Certain grades of PVC resin, particularly those with specific performance characteristics, may be imported depending on domestic supply-demand dynamics. Additionally, specialty additives and high-performance adhesive formulations are often sourced from international suppliers, especially for premium or specialized products. While standard PVC insulation tapes are largely produced domestically, imports play a role in supporting advanced applications and ensuring consistent quality for higher-end segments.

Indian Market Scenario

Indian market for PVC electrical insulation tapes is estimated to be worth INR 1002 crore in FY 2026. The domestic market has grown by a CAGR of 6.4% between FY 2021 and 2026. This growth trajectory was largely supported by the post-COVID recovery in infrastructure and construction activities, increased investments in electrical networks, and growing demand from sectors such as real estate, automotive, and consumer durables. Additionally, rising urbanization and electrification in semi-urban and rural areas contributed to sustained demand, although pricing pressures from unorganized players and fluctuations in PVC resin prices slightly moderated growth.





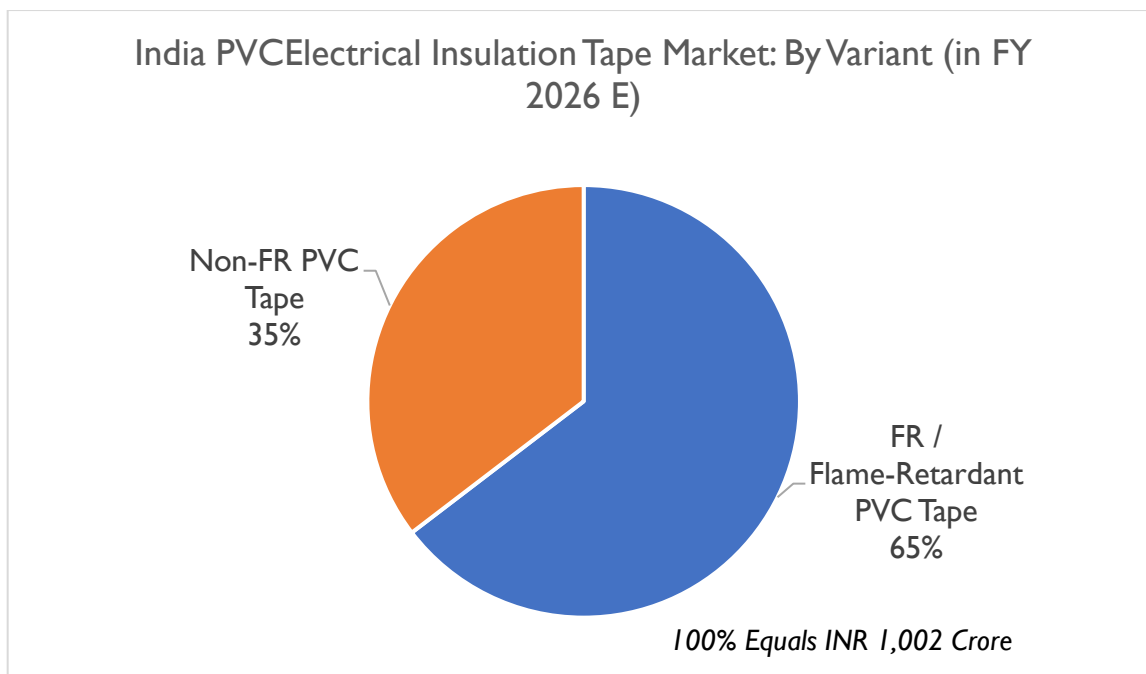
Source: Dun & Bradstreet Research & Estimates

Market Segmentation: By Variant & By End User Segment

By Variant

By product variant, the electrical insulation tape market is segmented into two broad categories: flame retardant (FR) and non-flame retardant (Non-FR) variants. The PVC electrical insulation tapes market is witnessing a clear shift toward flame-retardant (FR) variants, driven by increasing emphasis on electrical safety, regulatory compliance, and higher adoption across infrastructure and industrial applications. FR variant is estimated to account for 65% of the total Indian market in FY 2026 with remaining accounted by Non-FR variant.



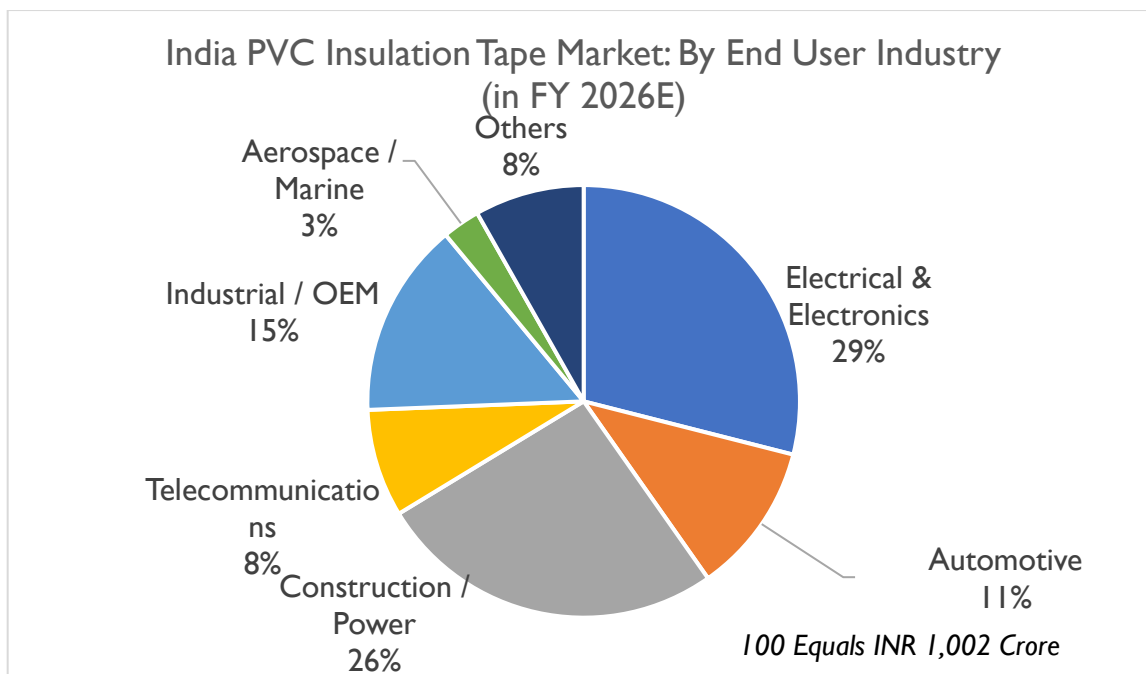


Source: Dun & Bradstreet Research & Estimates

By End User Segment

The demand for PVC electrical insulation tapes is well-diversified across multiple end-user industries, with Electrical & Electronics and Construction/Power segments forming the core of the market, supported by their widespread use in wiring, installations, and infrastructure development. At the same time, automotive and telecommunications segments are emerging as high-growth areas, driven by increasing vehicle electrification, expansion of telecom networks, and rising digital connectivity. The Industrial/OEM segment continues to contribute steadily, supported by manufacturing and automation activities, while niche segments such as Aerospace/Marine and Others maintain a relatively small but stable share.





Source: Dun & Bradstreet Research & Estimates

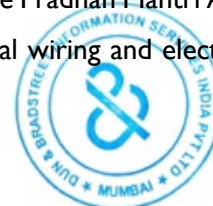
Key Demand Drivers

Growth of Electrical Infrastructure & Residential Construction

The expansion of India's electrical infrastructure and residential construction sector has been a key driver for PVC insulation tape demand, as these products are essential for wiring, cable insulation, and electrical installations. According to the NITI Aayog, India's installed power capacity increased from 305 GW in FY 2016 to 524 GW in FY 2026, while electricity generation rose from 1,168 BU to 1,824 BU, reflecting strong and sustained growth in power infrastructure.

The Government of India has made significant progress in electrification through flagship schemes such as the Pradhan Mantri Sahaj Bijli Har Ghar Yojana, under which over 2.86 crore households were electrified, achieving near-universal household electrification across the country. This massive increase in electricity access has directly translated into higher demand for wires, cables, and associated insulation materials, including PVC tapes.

Further strengthening this trend, the government launched the Revamped Distribution Sector Scheme with sanctioned investments of over INR 2.62 lakh crore, aimed at improving power distribution infrastructure, smart metering, and network efficiency. Additionally, ongoing electrification efforts under RDSS continue to cover over 13 lakh additional households, particularly in remote and underserved regions. Alongside infrastructure expansion, residential construction has also accelerated under initiatives such as the Pradhan Mantri Awas Yojana, with over 1.18 crore houses sanctioned, leading to increased demand for internal wiring and electrical fittings.



This combined growth in electrification and housing development is significantly boosting the consumption of PVC insulation tapes.

Overall, the combined impact of large-scale electrification, grid modernization, and rising housing development is significantly boosting the consumption of PVC electrical insulation tapes across both new installations and maintenance activities, making this one of the most critical long-term demand drivers for the market.

Automotive Wiring Harness Expansion

The automotive sector in India is witnessing a rapid increase in electrical complexity due to the growing integration of electronic components, safety systems, and the shift toward electric mobility, significantly driving demand for wiring harnesses and insulation materials. PVC insulation tapes play a critical role in bundling, protection, and insulation of wires in vehicles, making them essential in modern automotive systems.

As per the Ministry of Heavy Industries, the Indian automobile industry contributes around 6% to India's GDP and nearly 35% to manufacturing GDP, and India ranks as the 2nd largest manufacturer of two-wheelers, largest for three-wheelers, and 3rd largest for passenger vehicles globally, reflecting strong industry growth and scale. As per official data from the Government of India (Ministry of Heavy Industries via VAHAN portal), electric vehicle registrations increased from 16.81 lakh units in FY 2024 to 19.68 lakh units in FY 2025, reflecting strong growth in EV adoption. Additionally, India's automobile production exceeded 332 lakh units in CY 2025, highlighting the large-scale expansion of vehicle manufacturing.

This surge in EV adoption is particularly significant as electric vehicles require substantially higher wiring harness content compared to conventional vehicles, thereby increasing the consumption of insulation tapes. Furthermore, the government is actively supporting this transition through initiatives such as the Production Linked Incentive (PLI) scheme for the automobile and auto components sector with an outlay of INR 25,938 crore, along with schemes like PLI for Advanced Chemistry Cell (ACC) batteries (INR 18,100 crore) and PM E-DRIVE scheme (INR 10,900 crore) aimed at promoting EV adoption and domestic manufacturing.

Overall, the combination of rising EV registrations, increasing vehicle electrification, and strong policy support for domestic manufacturing is significantly boosting the demand for high-performance, heat-resistant PVC insulation tapes in automotive wiring applications.

Adoption of Flame-Retardant & Lead-Free Tapes

With increasing awareness around fire safety and environmental sustainability, there is a strong shift toward flame-retardant (FR) and lead-free insulation tapes across industrial, commercial, and infrastructure applications. Regulatory bodies are tightening norms related to hazardous substances and fire safety, encouraging the adoption of safer and compliant materials. In India, standards set by the **Bureau of Indian Standards for electrical**



insulation materials and wiring practices emphasize fire resistance and safety, particularly in residential buildings, industrial facilities, and public infrastructure.

Additionally, government focus on reducing environmental impact through policies such as the **Plastic Waste Management Rules and Extended Producer Responsibility (EPR)** is pushing manufacturers to adopt **lead-free stabilizers and eco-friendly plasticizers**. This is further reinforced by data from the Central Pollution Control Board, which highlights that India generates over 4 million tonnes of plastic waste annually, increasing regulatory scrutiny on plastic-based products and their chemical composition. As a result, manufacturers are increasingly shifting toward low-toxicity, recyclable, and high-performance insulation tapes.

Overall, the combination of stricter safety standards, environmental regulations, and rising end-user awareness is accelerating the transition from conventional tapes to FR and lead-free variants, particularly in high-risk and high-value applications such as infrastructure, industrial equipment, and electrical installations.

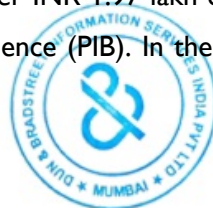
Shift Toward Higher Temperature-Resistant & Premium-Grade Products

Industries in India are increasingly demanding high-performance insulation materials that can withstand elevated temperatures, mechanical stress, and harsh operating environments, leading to a noticeable shift toward premium-grade PVC insulation tapes. This trend is particularly evident in sectors such as automotive, electrical equipment, and heavy industries, where reliability and long service life are critical. As per standards set by the **Bureau of Indian Standards (e.g., IS 7809 for PVC insulating tapes)**, products are required to meet specific performance criteria related to temperature resistance, dielectric strength, and durability, encouraging manufacturers to upgrade product quality.

Additionally, the increasing complexity of applications such as high-load electrical systems, industrial machinery, and EV components has intensified the need for tapes with enhanced adhesive strength, better insulation properties, and resistance to heat and chemicals. This shift is also aligned with the broader industrial push toward quality and efficiency, supported by government initiatives like Make in India, which promote advanced manufacturing and higher product standards. As a result, manufacturers are focusing on innovation and product differentiation, leading to growing adoption of premium, high-temperature-resistant insulation tapes across key end-use sectors.

Government Programs & Policy Support (Make in India, PLI Schemes)

Government initiatives such as Make in India and the Production Linked Incentive (PLI) schemes are playing a crucial role in driving domestic manufacturing and industrial growth across sectors like electronics, automotive, and components. The Government of India has approved PLI schemes worth over INR 1.97 lakh crore across 14 key sectors, aimed at boosting local production and reducing import dependence (PIB). In the automotive

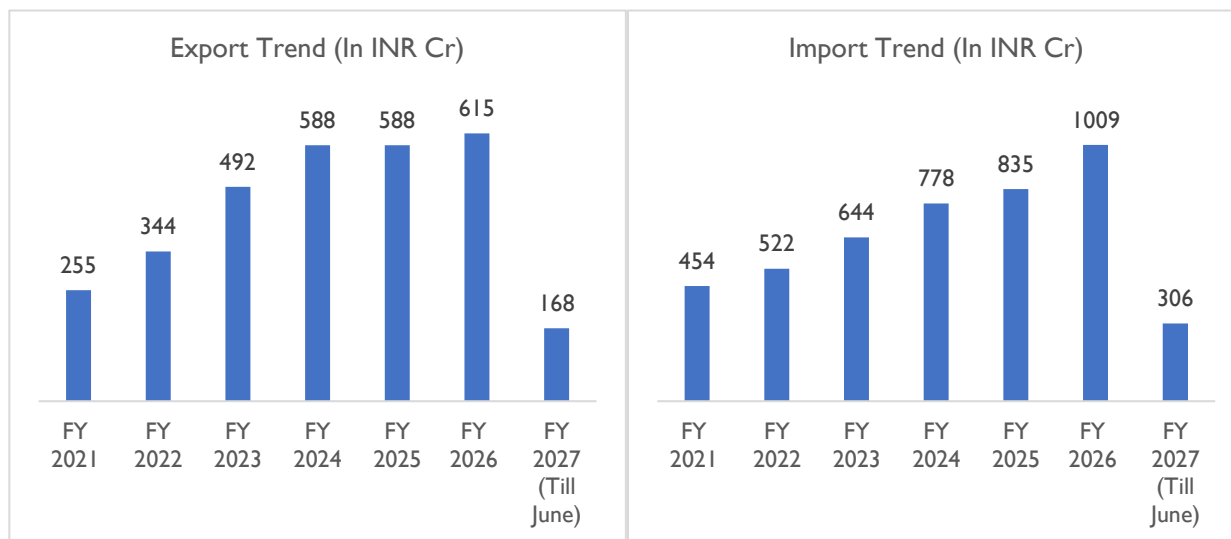


sector, the PLI scheme has an outlay of INR 25,938 crore for advanced automotive technologies and components, while the PLI scheme for Large Scale Electronics Manufacturing has an outlay of around INR 38,645 crore, significantly boosting electronics production (PIB).

These initiatives are accelerating investments in manufacturing facilities, increasing production of electrical equipment, wiring systems, and electronic devices all of which require insulation materials such as PVC tapes. Additionally, the focus on local value addition, supply chain localization, and export competitiveness is encouraging the development of domestic component ecosystems. As a result, the expansion of manufacturing activities under these government programs is indirectly but significantly increasing the demand for PVC electrical insulation tapes, creating long-term growth opportunities for organized players in the market.

Export and Import Scenario

The export and import trend for PVC electrical insulation tape reflects India's gradually strengthening position in the electrical consumables segment, supported by rising demand from power distribution, construction, automotive, and electronics industries. The market dynamics are influenced by increasing infrastructure development, expansion of renewable energy projects, and growing electrification across urban and rural areas. Additionally, improving domestic manufacturing capabilities and cost competitiveness are supporting export growth, while imports continue to meet demand for specialized and high-performance variants. Overall, the trend indicates a steady transition toward value-added, quality-driven products in the global electrical insulation materials market.



Source: Directorate General of Foreign Trade



The export and import trend for PVC electrical insulation tape reflects a steady expansion in India's electrical consumables market, driven by rising demand from power, construction, automotive, and electronics sectors, along with increasing electrification and infrastructure development.

Exports increased significantly from INR 255 crore in FY2021 to INR 588 crore in FY2025, before further rising to INR 615 crore in FY2026, registering a CAGR of approximately 19% during FY2021–FY2026. The continued growth in export value indicates strengthening domestic manufacturing capabilities and improving global competitiveness. Exports stood at INR 168 crore in FY2027 (till June), reflecting the partial-year period.

Imports increased steadily from INR 454 crore in FY2021 to INR 835 crore in FY2025, before rising further to INR 1,009 crore in FY2026, representing a CAGR of approximately 17 % during FY2021–FY2026. The sustained increase reflects continued domestic demand for advanced and specialized products that are not fully met through local production. Imports stood at INR 306 crore in FY2027 (till June), reflecting the partial-year period.

Overall, while the widening import-export gap highlights continued import dependence, the robust export growth signals a gradual shift toward higher-value, quality-driven insulation products, positioning India as an emerging player in the global electrical insulation materials market.

Top 5 Export Destinations

India's exports of PVC electrical insulation tape are relatively concentrated, with the United States emerging as the largest destination, accounting for approximately 41% (INR 254 crore) of total exports in FY2026. This is followed by the United Arab Emirates at 7% (INR 40 crore), highlighting demand from a key re-export hub in the Middle East. European markets such as Poland (6%; INR 35 crore) and Germany (5%; INR 34 crore) also represent notable shares, indicating India's presence in developed and industrial markets, while Canada (3%; INR 20 crore) reflects continued demand from North America.

The remaining 38% (INR 232 crore) under "Others" indicates a reasonably diversified export base across multiple smaller markets. Overall, the export pattern reflects a mix of demand from advanced economies and regional trade hubs, with the United States accounting for the largest share. However, the concentration in a few key destinations also highlights the importance of further market diversification to support more stable and sustained export growth.





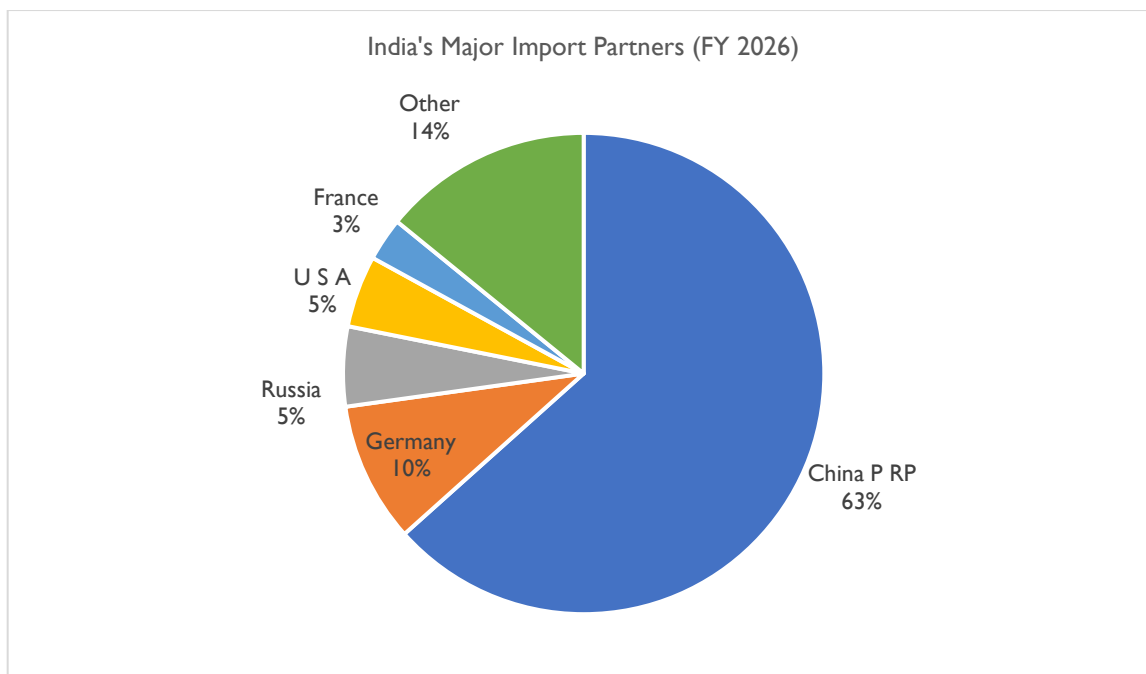
Source: Directorate General of Foreign Trade

Top 5 Import Partners

India's imports of PVC electrical insulation tape are highly concentrated, with China emerging as the dominant supplier, accounting for 63% (INR 639Cr) of total imports in FY2026. This overwhelming share reflects India's strong dependence on China for cost-effective, large-scale manufacturing of electrical insulation materials. Other key contributors include Germany (10%; INR 95 Cr) and Russia (5%; INR 54 Cr), indicating the import of technologically advanced and specialized products from established industrial economies. The United States (5%; INR 49 Cr) and France (3%; INR 29 Cr) also feature among the top suppliers, highlighting demand for high-quality and performance-oriented insulation tapes from developed markets.

The distribution highlights a clear concentration in a few key countries, particularly with China dominating the supply base. The "Others" category at 14% (INR 142 Cr) suggests some diversification beyond the top suppliers, although no individual country matches China's scale. Overall, the import pattern underscores India's reliance on global manufacturing hubs for both standard and specialized insulation products, while also pointing to scope for strengthening domestic production capabilities in higher-value segments of the electrical insulation materials market.





Source: Directorate General of Foreign Trade

Regulatory Landscape

The regulatory landscape for PVC electrical insulation tapes in India is designed to ensure high product quality, electrical safety, and environmental compliance, while also supporting the growth of domestic manufacturing and exports. The framework is anchored by standards issued by the Bureau of Indian Standards, complemented by safety regulations for electrical installations and international compliance requirements for global trade.

BIS Standards & Performance Specifications for PVC Electrical Insulation Tapes

- Role of BIS:** The Bureau of Indian Standards (BIS) establishes technical standards such as IS 7809 (Part 3/Section I) to regulate PVC electrical insulation tapes. These standards define measurable performance benchmarks and testing criteria to ensure product quality, safety, and consistency across manufacturers.
- Electrical Performance (Dielectric Strength):** BIS specifies high dielectric strength requirements, typically in the range of ≥ 40 kV/mm (as per IS standards), ensuring that the tape can withstand high voltage stress without electrical breakdown. This parameter is critical for preventing current leakage and ensuring insulation reliability in electrical systems.
- Mechanical Properties (Tensile Strength & Elongation):** The standard prescribes minimum tensile strength values (generally $\geq 25\text{--}30$ N/cm width) to ensure resistance to tearing during application. Additionally, elongation at break is typically $\geq 150\%$, allowing the tape to stretch and conform tightly around conductors without losing integrity.



- **Dimensional Accuracy (Thickness Tolerance):** PVC insulation tapes are generally manufactured in thickness ranges of 0.10 mm to 0.20 mm, with BIS specifying permissible tolerance limits to maintain uniform insulation performance. Consistent thickness ensures reliable dielectric properties across the tape surface.
- **Aging & Environmental Resistance:** BIS requires tapes to retain performance after exposure to elevated temperatures (up to 80–105°C depending on grade) and humidity conditions. Post-aging tests ensure that dielectric strength and adhesion do not fall below specified limits, confirming durability over time.
- **Testing Methodologies & Sampling:** Standardized testing procedures define sample sizes, conditioning environments (e.g., 23°C ± 2°C, 50% RH), and testing durations to ensure consistent evaluation across batches. Routine batch testing is mandatory to maintain compliance.
- **Inspection & Quality Control Systems:** Manufacturers must implement in-house quality control systems with calibrated equipment and periodic testing. Where applicable, products conforming to BIS standards may carry the ISI mark, indicating compliance with defined quantitative performance parameters.

IS 7809 (Part 3/Section I) for PVC Insulation Tapes:

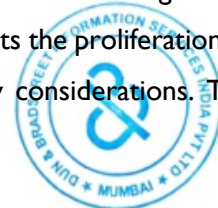
The IS 7809 (Part 3/Section I) standard issued by the Bureau of Indian Standards is the primary regulatory specification governing PVC electrical insulation tapes in India. It covers pressure-sensitive adhesive tapes made from plasticized PVC and defines requirements related to product construction (PVC backing with non-thermosetting adhesive), dimensional specifications such as thickness (typically 0.10–0.20 mm) and width tolerances, and key performance parameters including dielectric strength (≥ 40 kV/mm), tensile strength (≥ 25 –30 N/cm), and elongation ($\geq 150\%$).

The standard also includes requirements for adhesive performance, resistance to environmental factors such as heat, humidity, and aging, and classification based on temperature ratings (generally up to 80°C–105°C). It further prescribes detailed testing methods, sampling procedures, and quality control systems to ensure consistency and safety. Even though mandatory certification has been relaxed under recent policy updates, IS 7809 continues to serve as the core technical benchmark for manufacturers and users in India.

Key Challenges

Competition from Low-Cost Unorganized Players

The Indian PVC electrical insulation tape market is highly fragmented, with a significant presence of small-scale and unorganized manufacturers that operate with lower overheads, limited regulatory compliance, and minimal quality control, enabling them to offer products at significantly cheaper prices and intensify price-based competition for organized players. This often forces branded companies to compromise on margins or risk losing market share, while weak enforcement in certain regional markets further supports the proliferation of low-cost products, leading to commoditization where price outweighs quality and safety considerations. This trend is



closely linked to India's MSME-driven industrial structure, as highlighted by the Ministry of Micro, Small and Medium Enterprises, which states that MSMEs contribute around 30% to GDP, 45% to manufacturing output, and about 40–45% to exports; a large share of these are micro and small enterprises operating in informal setups, particularly in segments like electrical consumables, thereby sustaining price competitiveness but also contributing to challenges such as inconsistent quality, pricing pressure, and slow formalization of the industry.

Quality Inconsistencies & Counterfeit Risks

The widespread presence of counterfeit and substandard insulation tapes poses a major challenge for the industry. Many low-quality products fail to meet standards set by the Bureau of Indian Standards, particularly in terms of dielectric strength, adhesion, and flame resistance. Such products may initially appear similar but tend to degrade quickly, leading to insulation failure, peeling, and increased risk of short circuits or fire hazards. Counterfeit products also misuse branding or packaging of established companies, damaging brand reputation and eroding consumer trust. This challenge is particularly critical in applications such as construction and industrial wiring, where product failure can have serious safety implications.

Raw Material Price Volatility (PVC & Plasticizers)

PVC resin and plasticizers, the primary raw materials used in insulation tapes, are derived from petrochemical feedstocks and are therefore highly sensitive to fluctuations in crude oil prices and global supply-demand dynamics. Over the years, crude oil prices have exhibited significant volatility, increasing from USD 46.17/bbl in FY2016 to USD 69.88/bbl in FY2019, declining to USD 44.82/bbl in FY2021, and then surging sharply to USD 93.15/bbl in FY2023. Prices moderated to USD 78.56/bbl in FY2025 before rising further to USD 136.56/bbl in FY2026.

This volatility is directly reflected in domestic PVC resin prices, which increased from INR 83 ('000/MT) in FY2018 to a peak of INR 120 ('000/MT) in FY2022, followed by a correction to INR 95.5 ('000/MT) in FY2024. Prices remained relatively stable at INR 99.5 ('000/MT) in FY2025 before declining again to INR 86 ('000/MT) in FY2026(Till Jan). The surge in PVC prices during FY2021–FY2022 aligns with the sharp increase in crude oil prices, while the subsequent correction reflects easing feedstock costs and weaker downstream demand.

Plasticizers, which are also derived from petrochemical intermediates, follow a similar pricing trajectory, further amplifying the overall raw material cost volatility for insulation tape manufacturers.

As a result, manufacturers face significant fluctuations in input costs, making it challenging to maintain stable pricing strategies. In a highly competitive and price-sensitive market, companies often struggle to pass on increased costs to customers, leading to margin pressure. Smaller manufacturers are particularly vulnerable due



to limited bargaining power, dependence on spot procurement, and lack of long-term supply contracts, which exposes them more acutely to raw material price fluctuations.

Environmental Concerns & Tightening Regulatory Norms:

PVC-based products are increasingly scrutinized due to concerns related to the toxicity of additives, non-biodegradability, and environmental impact during disposal or incineration. Regulatory bodies, including the Ministry of Environment, Forest and Climate Change, are gradually tightening norms related to chemical usage, emissions, and waste management, particularly in light of rising plastic waste generation in the country.

As per Central Pollution Control Board estimates, India generates approximately 3.4–3.9 million tons of plastic waste annually (based on recent year trends), which has intensified regulatory scrutiny on plastic-based products such as PVC tapes. Consequently, manufacturers are required to adopt eco-friendly plasticizers, lead-free stabilizers, and sustainable production processes, which often involve higher costs and technological upgrades. Additionally, growing awareness among consumers and institutional buyers is pushing demand toward green and compliant products, creating further pressure on manufacturers to align with evolving environmental standards.

Import Disruptions & Adhesive Supply Chain Volatility

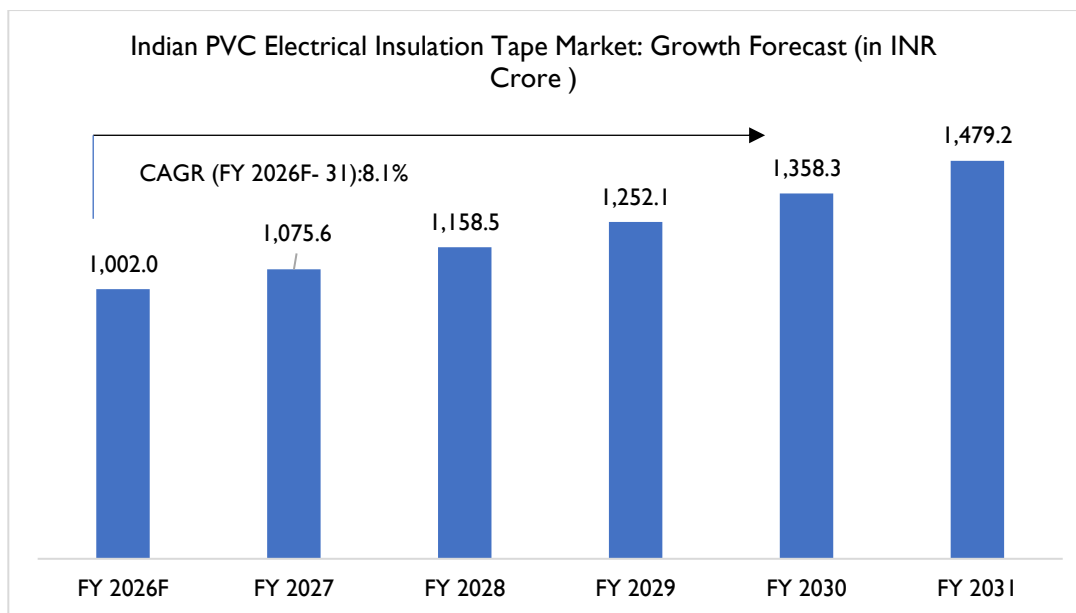
The industry depends on both domestic and imported raw materials, particularly for specialized adhesives, additives, and certain grades of PVC resin. Global supply chain disruptions caused by factors such as geopolitical conflicts, shipping delays, or trade restrictions can lead to raw material shortages, increased lead times, and cost escalations. Adhesives are especially critical, as their quality directly affects the performance of the tape. Any inconsistency in adhesive supply can result in production delays or compromised product quality. This dependency on external sources increases operational risk and reduces supply chain resilience.

Growth Forecast

Looking ahead, the market is expected to witness an acceleration in growth, increasing from INR 1002 Crore in FY 2026 to INR 1479 crore in FY 2031, reflecting a CAGR of 8.1 % during FY 2026–2031. The stronger growth outlook is attributed to continued investments in infrastructure projects, expansion of renewable energy installations, increasing adoption of electric vehicles, and growing awareness regarding electrical safety and quality standards.

Moreover, the shift toward organized retail channels and branded products is expected to enhance value realization in the market. However, tightening environmental regulations related to plastic usage and ongoing competition from low-cost unorganized manufacturers may continue to pose challenges, requiring companies to focus on innovation, compliance, and cost optimization strategies.





Source: Dun & Bradstreet Research & Estimates

Competitive Landscape

The Indian PVC/electrical insulation tapes market is highly competitive and largely fragmented, with the presence of both organized and unorganized players. The unorganized sector dominates the market in terms of volume, primarily catering to price-sensitive customers with low-cost products, while the organized sector is gradually increasing its share by focusing on quality, safety standards, and branded offerings. The market is driven by demand from electrical wiring, construction, maintenance, automotive, and industrial applications, making it a high-volume and price-sensitive segment. Increasing awareness regarding electrical safety and fire hazards is encouraging the shift toward better-quality, flame-retardant, and compliant products, particularly in organized and institutional segments.

Nature of Industry

The PVC insulation tapes industry in India is characterized by high fragmentation, intense price competition, and standardized products. A large number of small and regional manufacturers operate in the market, competing primarily on price, while organized players focus on product quality, durability, and compliance with safety standards. The industry is relatively less technology-intensive compared to other electrical components, but performance characteristics such as adhesion strength, insulation quality, and resistance to heat and fire are key differentiators. Demand is steady and recurring in nature, supported by both new installations and repair and maintenance activities.

Analysis of Factors Shaping Competition



- **Market Structure and Concentration:** The industry is highly fragmented, with a significant presence of unorganized players dominating the low-cost segment, while organized players cater to branded and higher-quality products, especially in industrial and institutional markets.
- **Cost of Raw Materials:** Key raw materials include PVC resin, plasticizers, stabilizers, and adhesives, which are derived from petrochemicals and are subject to price volatility. Fluctuations in these inputs directly impact production costs and profit margins, particularly for smaller manufacturers.
- **Pricing Pressure:** Pricing pressure is intense due to the large number of players and the commoditized nature of the product. The unorganized sector competes aggressively on price, forcing organized players to balance cost competitiveness with quality and brand positioning.
- **Product Differentiation and Innovation:** Differentiation is based on performance features such as insulation strength, adhesion quality, flame retardancy, temperature resistance, and durability. There is growing demand for advanced products such as lead-free, flame-retardant, and high-temperature-resistant tapes, especially in safety-conscious applications.
- **Brand Strength and Reputation:** Brand plays a moderate role in the market. While industrial and institutional buyers prefer reliable and certified brands, retail customers and small contractors are more price-driven and often opt for lower-cost alternatives.
- **Distribution Networks:** A wide and efficient distribution network is critical, as products are sold through electrical dealers, wholesalers, and hardware stores across urban and rural markets. Strong distribution reach ensures higher product availability and market penetration.
- **Switching Cost:** Switching costs are low, as PVC insulation tapes are standardized and easily substitutable. Customers can switch between brands with minimal impact, which intensifies competition.
- **Regulatory Compliance and Quality Standards:** Compliance with IS standards and safety norms is increasingly important, particularly for organized players and institutional buyers. However, inconsistent enforcement allows non-compliant and low-quality products to remain prevalent in the market.
- **End-User Demand Dynamics:** Demand is driven by sectors such as electrical wiring, construction, infrastructure, automotive, and industrial maintenance. Growth in electrification and infrastructure development supports long-term demand, while repair and replacement activities ensure consistent consumption.



Key Players

Company Name	Overview
3M India Ltd.	3M India Ltd., established in 1987, is the Indian subsidiary of 3M Company, headquartered in Bengaluru. The company operates across multiple business segments including Safety & Industrial, Transportation & Electronics, Health Care, and Consumer, offering a diversified portfolio of products and solutions. Its offerings include electrical insulation tapes, abrasives, adhesives, personal protective equipment, healthcare products, automotive solutions, and industrial materials. 3M India has a manufacturing presence in India supported by multiple facilities and innovation centers, along with access to global R&D capabilities of the parent company. The company focuses on innovation-driven product development, supported by science and technology platforms, and serves a wide range of industries including electrical, automotive, healthcare, electronics, and construction.
Panasonic Life Solutions India Pvt. Ltd.	Panasonic Life Solutions India Pvt. Ltd. was established in 1963 as Anchor and became a part of Panasonic Corporation in 2007, strengthening its technological and manufacturing capabilities. Headquartered in Gurgaon, Haryana, the company has a strong pan-India presence with multiple manufacturing facilities and sales offices, including early plants such as Valsad (for wiring devices) and expanded units like Haridwar, supporting large-scale production. As part of its electrical construction materials portfolio, the company also manufactures PVC insulation tapes, which are widely used for electrical insulation, bundling, colour coding, and protection of wires and cables, ensuring safety, durability, and resistance to moisture, heat, and abrasion. With over six decades of experience, the company continues to focus on delivering reliable, energy-efficient, and innovative electrical solutions across residential, commercial, and industrial segments.
Pidilite Industries Limited	Pidilite Industries Limited was established in 1959 and is headquartered in Andheri (East), Mumbai, Maharashtra. The company is a leading manufacturer in the adhesives, sealants, construction chemicals, and specialty chemicals space in India, with a strong presence in both consumer and industrial markets. It offers a wide range of well-known brands such as Fevicol, Dr. Fixit, M-Seal, Fevicryl, and Steelgrip. The company has a strong manufacturing footprint across India supported by an extensive



distribution network. Its product Steelgrip is a high-quality PVC electrical insulation tape designed to provide safe, durable, and reliable insulation for electrical wiring, offering properties such as flame resistance, waterproofing, flexibility, and long service life across residential, commercial, and industrial applications.

Electrical Wire & Cables (Focus on LT Power Cables)

Overview

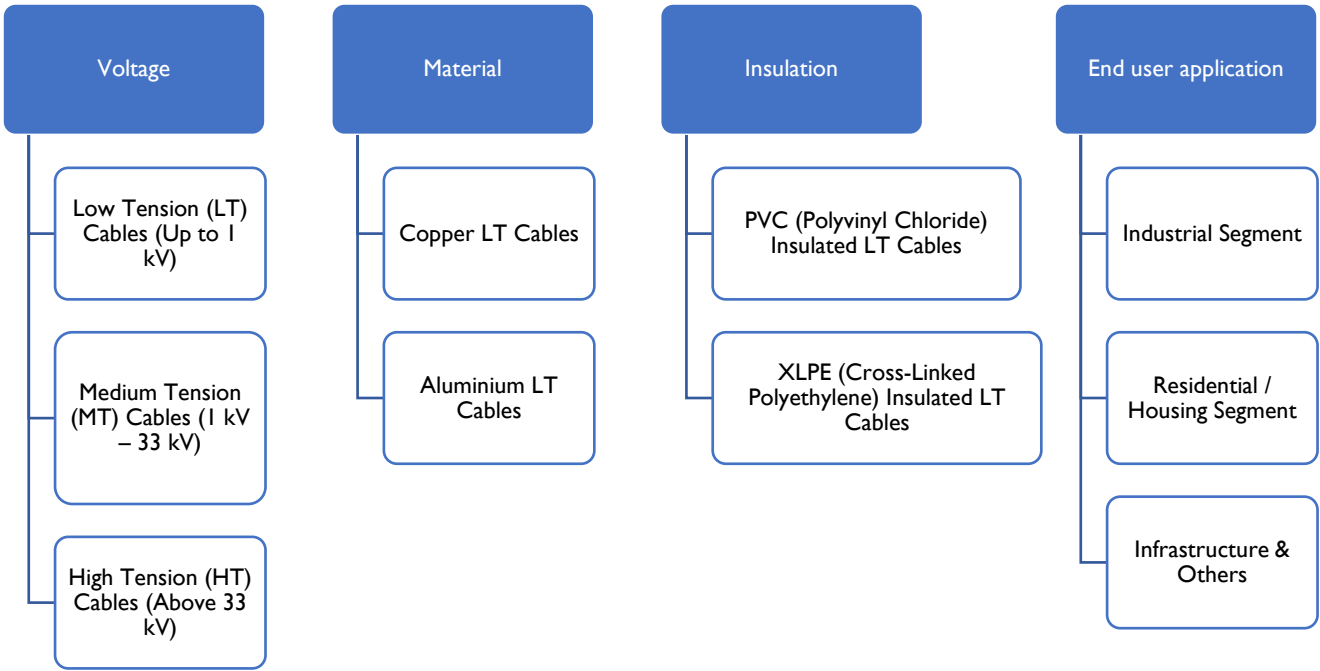
Wire and cable form a critical segment of the electrical ecosystem, enabling transmission & distribution of power across residential, commercial, industrial, and telecom applications. The industry includes LT/MT/HT power cables, control and instrumentation cables, and communication wires, ensuring safe and efficient flow of electricity and data. Growth is driven by urbanization, industrialization, and strong government investments in infrastructure, power networks, and digital connectivity.

The sector is witnessing a shift toward organized players due to stricter BIS standards and rising demand for quality-compliant products. Evolving demand trends include higher use of low-voltage and aluminium cables, along with specialized solutions for renewable energy and automation. While margins remain sensitive to copper and



aluminium prices, the industry is well-positioned for steady growth, supported by ongoing electrification and infrastructure expansion.

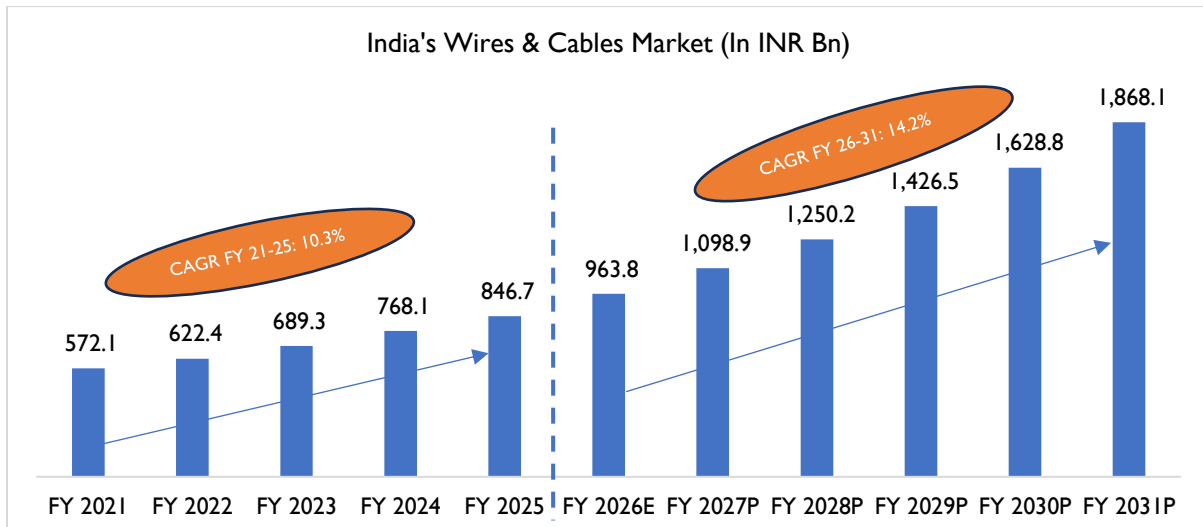
Categorization of Cables



India Wires and Cables Market, Revenues:

India’s wires and cables market has demonstrated steady growth during FY2021- FY2025, driven by increasing investments in power transmission and distribution infrastructure, renewable energy projects, real estate development, industrial expansion, and rising electrification demand. The market revenue increased from INR 572.1 billion in FY2021 to INR 846.7 billion in FY2025, registering a CAGR of 10.3% during the period. Growth during this period was supported by infrastructure development initiatives, expansion of electrical networks, and increasing adoption of advanced wiring solutions across residential, commercial, and industrial applications.





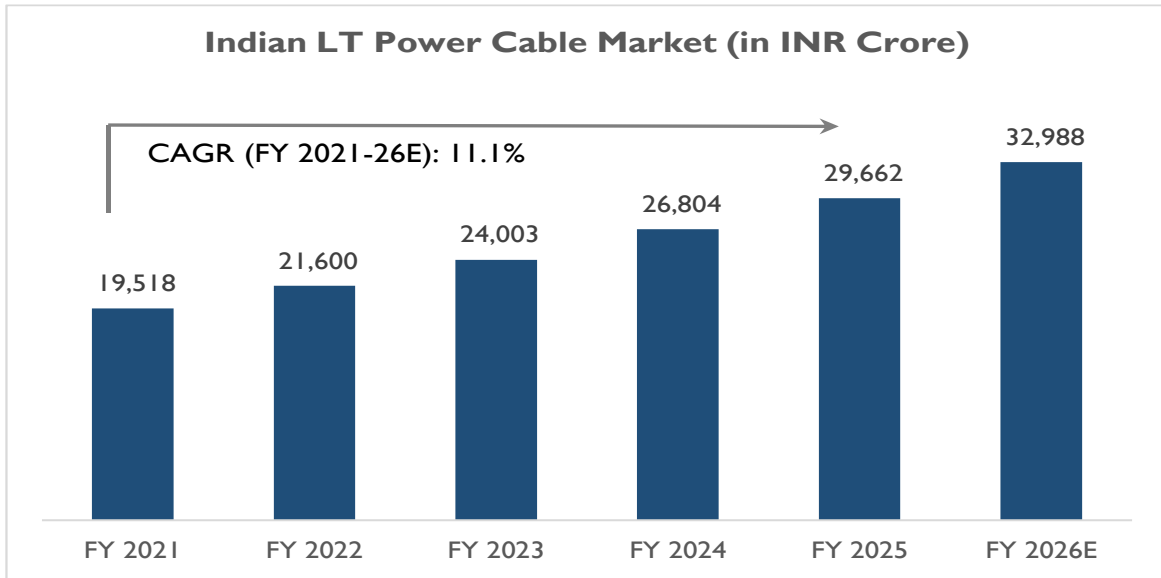
The Indian wires and cables market is projected to maintain a strong growth trajectory during FY2026–FY2031, with revenues expected to increase from INR 963.8 billion in FY2026 to INR 1,868.1 billion by FY2031, reflecting a CAGR of 14.2%. The anticipated growth is expected to be driven by continued investments in renewable energy integration, smart grid development, railway electrification, data centre expansion, urbanization, and increasing demand for high-performance cables across various end-use industries.

The LT (Low Tension) power cable segment forms a significant part of the market, driven by its role in last-mile distribution and internal wiring across end-use sectors. Demand is closely linked to residential construction, commercial real estate, and electrification, along with replacement and refurbishment needs.

The segment is witnessing increasing adoption of high-performance cables such as XLPE - insulated cables, along with PVC-insulated and fire-resistant variants, while organized players continue to gain share through branding and compliance. Going forward, growth will be supported by housing expansion, distributed energy systems, and rising safety awareness, although challenges such as raw material price volatility and competition from low-cost players will persist.

Indian market for LT Power Cables is estimated to be worth INR 32,988 crore in FY 2026. The annual turnover in the domestic market has increased by a CAGR of nearly 11.1% between FY 2021 and 26.





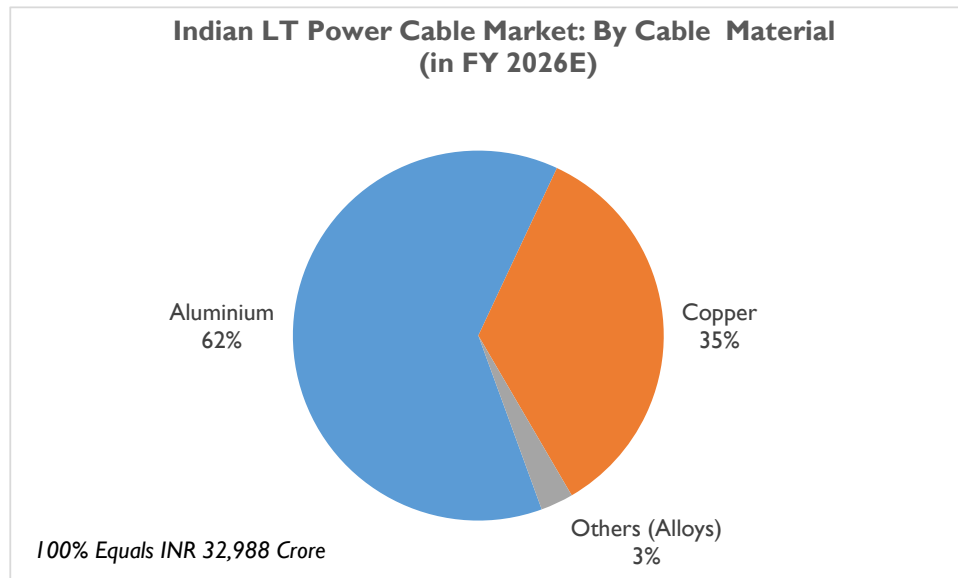
Source: D&B Research and Estimates

Market Segmentation: By Cable Material, Insulating Material, End User Segment, Branded and Unbranded

The LT power cable market can be analysed across material, insulation, and end-user segments, reflecting evolving demand dynamics. Material trends highlight the trade-off between cost efficiency (aluminium) and performance (copper and alloys), while insulation trends indicate a shift toward high-performance, fire-safe solutions such as XLPE and LSZH. Overall, the market is transitioning from volume-driven growth to value-driven, safety-compliant demand patterns.

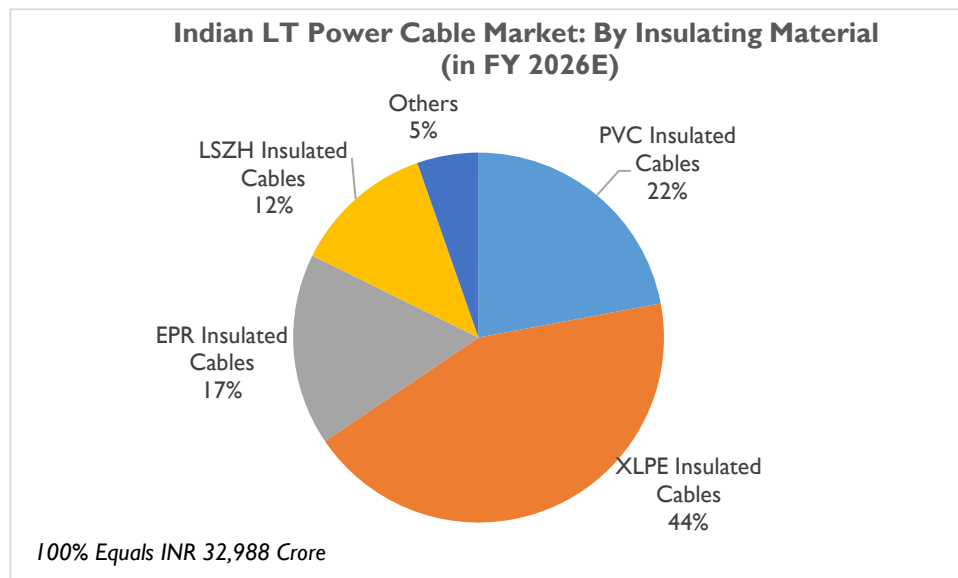
By material, aluminium dominates the segment due to its lower cost and suitability for large-scale distribution, accounting for ~62% of the market (INR 18,363.8 crore). Copper cables hold a ~35% share (INR 10,487.2 crore), driven by higher conductivity and reliability in residential and commercial applications, while alloys account for ~3% (INR 811.1 crore) and are gradually gaining traction in niche uses. Overall, the segment reflects a balance between cost optimization through aluminium and performance-led demand for copper and specialty materials.





Source: D&B Research and Estimates

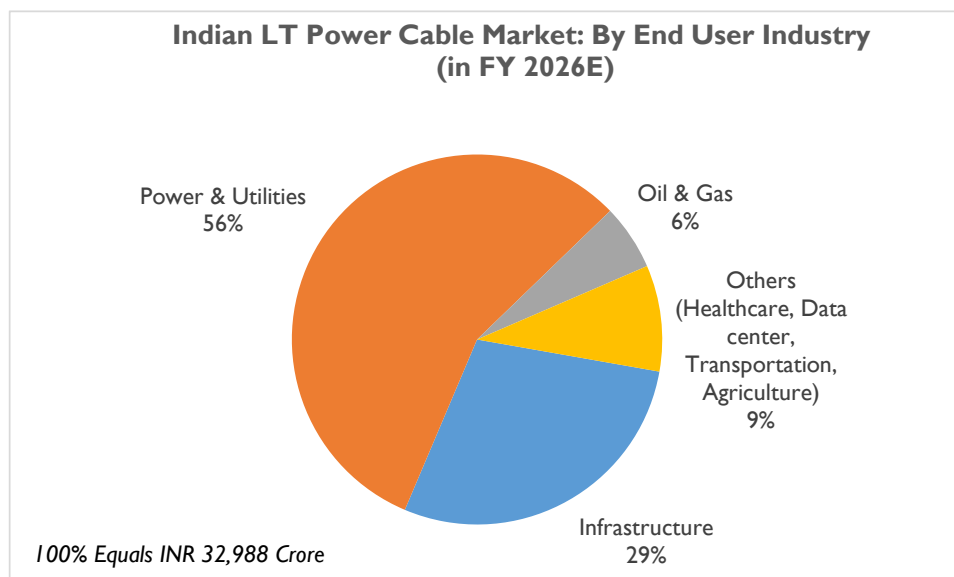
In terms of insulating material used, the domestic market comprises of LT power cables which uses a wide variety of insulating materials including PVC, XLPE, EPR and LSZH, among others. Amongst these it's the XLPE insulated cables that has the dominant share, accounting for approximately 44% of the total domestic LT power cable market in FY 2026. PVC insulated cables form the second largest segment with nearly 22% of the market share.



Source: D&B Research and Estimates

In terms of end user profile, approximately 56% of the domestic LT power cable market is attributed to applications in power & utility segment in FY 2026. This is followed by infrastructure with nearly 29% market.



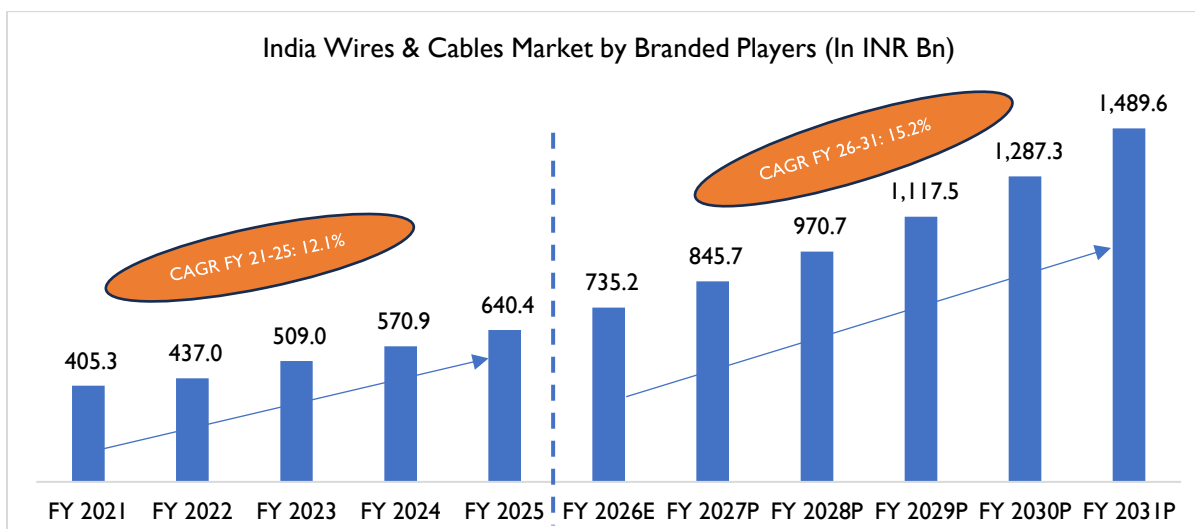


Source: D&B Research and Estimates

India Wires and Cables Market, Revenues, By Branded V/s Unbranded Players:

By Branded Players:

The branded segment dominates the India wires and cables market, supported by strong demand for high-quality, certified, and reliable products across residential, commercial, industrial, and infrastructure applications. Revenue from branded players increased from INR 405.3 billion in FY2021 to INR 640.4 billion in FY2025, registering a CAGR of 12.1%. The segment has benefited from increasing consumer preference for quality-assured products, stricter safety standards, organized distribution networks, and growing brand awareness.



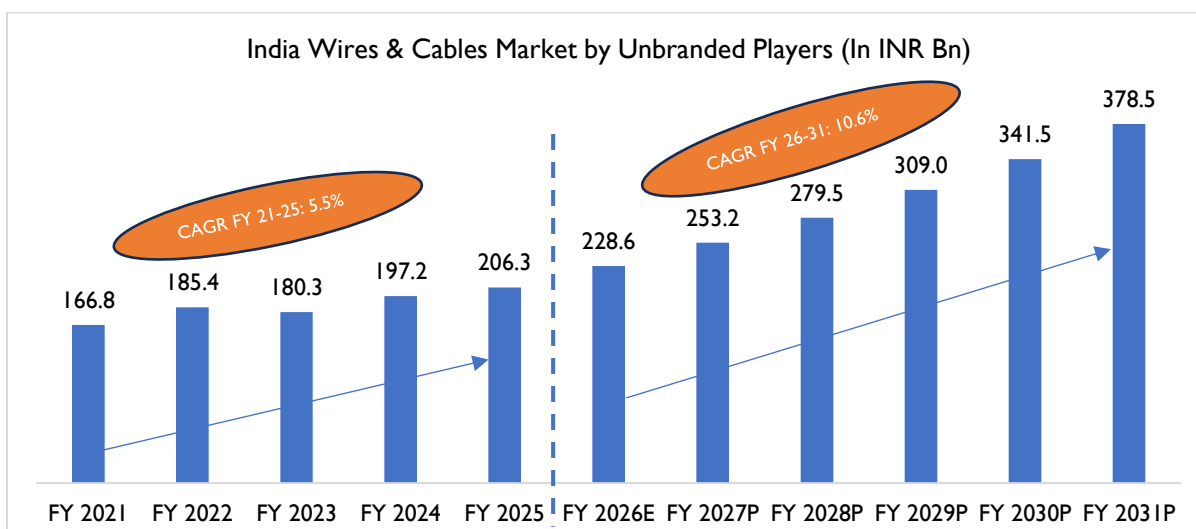
Source: D&B Desk Research



The branded segment is expected to witness robust growth over the forecast period, with revenues projected to increase from INR 735.2 billion in FY2026 to INR 1,489.6 billion by FY2031, reflecting a CAGR of 15.2%. Growth is expected to be driven by rising investments in power infrastructure, renewable energy projects, real estate and industrial development, increasing replacement demand for premium electrical products, and continued market shift from unorganized to organized manufacturers due to greater emphasis on product quality, safety, and regulatory compliance.

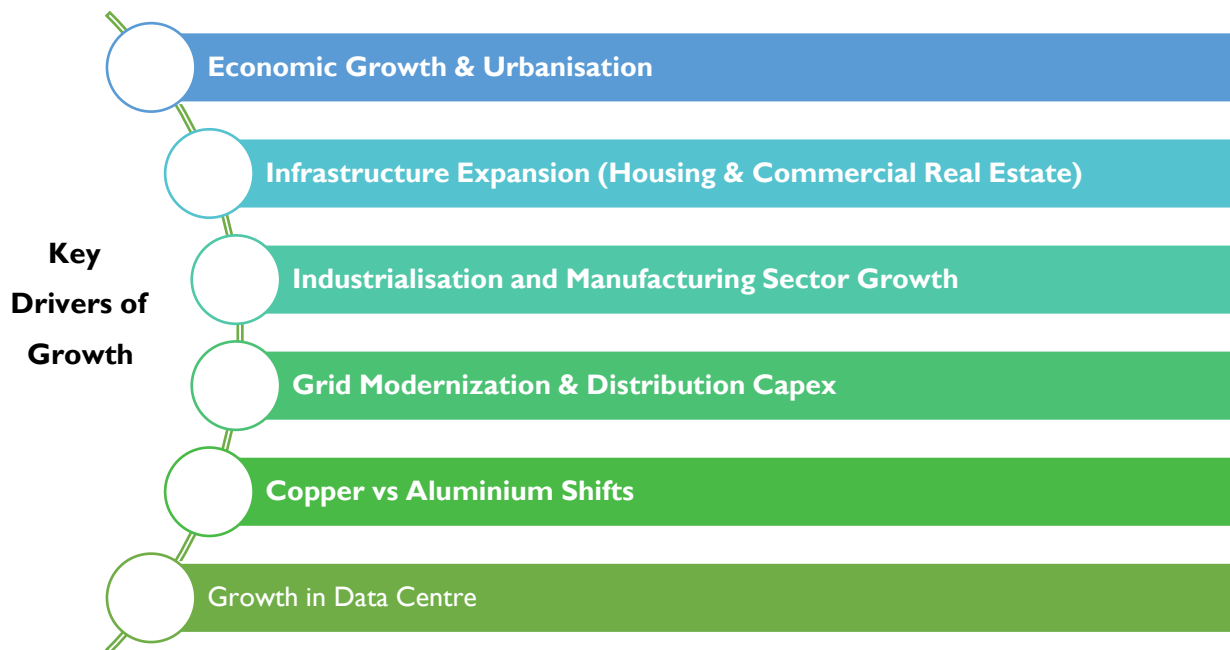
By Unbranded Players:

The unbranded segment continues to cater primarily to price-sensitive customers across residential construction, small-scale commercial projects, and local electrical installations. Revenue from unbranded players increased from INR 166.8 billion in FY2021 to INR 206.3 billion in FY2025, registering a CAGR of 5.5%. However, growth remained comparatively moderate due to increasing consumer preference for branded products, greater emphasis on product quality and safety, and stricter regulatory and certification requirements.



The unbranded segment is projected to grow steadily during FY2026- FY2031, with revenues expected to increase from INR 228.6 billion in FY2026 to INR 378.5 billion by FY2031, reflecting a CAGR of 10.6%. Growth is expected to be supported by continued demand from cost-conscious customers and smaller construction projects, although the segment is likely to face increasing competition from organized manufacturers as the market continues to shift towards branded, certified, and higher-quality electrical products.





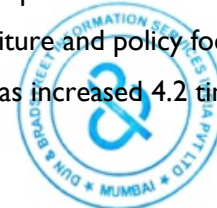
Economic Growth & Urbanisation

India's strong economic growth and rapid urbanisation are key drivers of the LT power and control cable market, as they fuel demand across construction, infrastructure, and industrial sectors. With the urban population expected to reach ~600 million by 2031 and increasing focus on Tier II and Tier III cities, the government's infrastructure-led strategy - through initiatives such as the Smart Cities Mission is accelerating the development of modern urban ecosystems, including transport, utilities, and digital networks.

Urban expansion is leading to a structural shift toward high-rise residential, commercial, and mixed-use developments, all of which require extensive deployment of low-voltage cables for power distribution, lighting, and automation systems. Additionally, rising investments in metro rail, airports, and smart utilities are significantly increasing cable demand. Higher population density and vertical construction are also driving the adoption of fire-safe and high-performance cables (FRLS/LSZH), reinforcing a sustained, long-term demand outlook for reliable and safety-compliant LT cable solutions.

Infrastructure Expansion (Housing & Commercial Real Estate)

Infrastructure development remains one of the strongest structural drivers for LT power and control cable demand in India, supported by a sustained increase in government capital expenditure and policy focus on infrastructure-led growth. As per the Government of India, capital expenditure has increased 4.2 times from



INR 2.63 lakh crore in FY2018 to INR 12.2 lakh crore in FY2027 (BE), reflecting a strong and consistent push toward infrastructure creation and capacity expansion.

These investments are directed across sectors such as roads, railways, urban infrastructure, housing, and commercial real estate, all of which drive significant demand for LT cables used in electrification, lighting, power distribution, and control systems. Large infrastructure projects like highways, metro rail, and airports further strengthen demand for reliable cable networks.

Simultaneously, growth in residential and commercial real estate is reinforcing cable consumption, as infrastructure development catalyses private investments in housing, offices, retail, and mixed-use projects, all requiring extensive building wires and LT cable installations. Additionally, increasing regulatory focus on fire safety and building standards is accelerating the adoption of FR, FRLS, and LSZH cables in modern construction. This is driving a shift toward higher-quality, safety-compliant, and performance-oriented cable solutions, supporting both volume growth and value realization in the LT cable market.

Industrialisation and Manufacturing Sector Growth

Industrialisation and manufacturing expansion play a pivotal role in LT power and control cable demand in India, supported by policy initiatives such as Make in India and PLI schemes. Rising investments in manufacturing units, industrial parks, and automation systems are increasing the need for LT cables for machinery connectivity, control systems, and internal power distribution. Government initiatives like the National Industrial Corridor Programme are further strengthening industrial infrastructure and demand.

At the same time, emerging sectors such as renewable energy and EV infrastructure are creating new growth avenues. Large-scale solar and wind projects, along with expanding EV charging networks, require extensive LT cabling for power distribution and connectivity. Additionally, the broader push toward energy transition, electrification, and supporting infrastructure such as substations and storage systems is sustaining long-term demand for reliable and high-performance cable solutions.

Grid Modernization & Distribution Capex

Government-led investments in power infrastructure and grid modernization are significantly boosting demand for LT power and control cables, particularly in distribution networks and last-mile connectivity. The focus on improving power reliability, reducing T&D losses, and integrating renewable energy is driving large-scale upgrades in substations, feeders, and distribution networks, all of which require extensive deployment of LT cables for power delivery as well as control and monitoring systems.

Key initiatives such as the Green Energy Corridor are strengthening transmission capacity for renewable evacuation, while also creating downstream demand for LT cabling across substations and auxiliary infrastructure.



In parallel, schemes like RDSS are accelerating distribution-level reforms through smart metering, feeder separation, and network strengthening- areas that are inherently cable-intensive. Additionally, the increasing shift toward underground cabling in urban areas, driven by safety, reliability, and aesthetic considerations, is structurally raising demand for higher-quality and durable LT cables.

Copper vs Aluminium Shifts

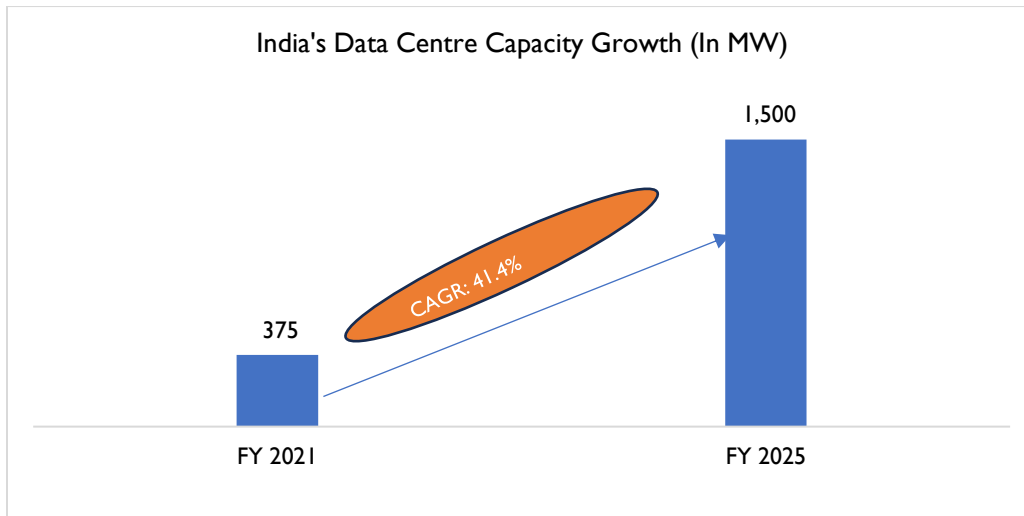
With the government significantly increasing infrastructure spending, cost optimization has become a key priority, driving a shift in material preference within the LT cable market. Aluminium is increasingly being adopted in large-scale infrastructure projects such as power distribution, railways, and urban networks due to its lower cost, lighter weight, and suitability for bulk applications. However, copper continues to retain strong demand in high-performance and safety-critical applications, given its superior conductivity, durability, and reliability. This evolving balance between aluminum and copper is reshaping product mix, pricing strategies, and sourcing decisions across the industry.

In parallel, expansion in electrification and digital infrastructure is further strengthening demand. Government-led initiatives such as BharatNet and Digital India are driving connectivity across rural and semi-urban areas, increasing deployment of optical fibre and associated power and control cable networks. Additionally, broader investments in industrial expansion, renewable energy, and supporting infrastructure are reinforcing cable demand across segments. Overall, with sustained policy support and rising infrastructure capex, the LT cable market is expected to witness stable and long-term growth, driven by both volume demand and gradual premiumization.

Growth of India's Data Centre Industry:

Data centres form the backbone of the digital economy, enabling the storage, processing, and real-time transmission of large volumes of data across cloud computing, artificial intelligence (AI), fintech, e-commerce, telecom, and enterprise digital ecosystems. The rapid growth in digital services, increasing internet penetration, data localisation requirements, and adoption of AI-driven applications have accelerated investments in data centre infrastructure across India. As per CEEW, the number of data centres in India has increased to reached 271 as of January 2026. Industry sources suggest that the number of facilities roughly **doubled between 2022 and 2026**, alongside the rapid increase in installed capacity which has increased fourfold, rising from approximately **375 MW in 2020** to around **1,500 MW by 2025**.





Source: Press Information Bureau (PIB)¹⁵

This growth has been driven by rising data consumption, rapid enterprise digitalisation, cloud adoption, and increasing deployment of hyperscale facilities across major hubs such as **Mumbai, Chennai, Hyderabad, Pune, and NCR**. The sector has also attracted substantial investments, with cumulative investments at approximately **USD 95 billion during FY 2019- FY 2025**. It is expected to **exceed USD 100 billion by FY**

The Government of India is strengthening the supporting ecosystem through initiatives such as the **IndiaAI Compute Capacity framework**, expansion of the national power transmission network, and the **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act**, which aims to facilitate a reliable power supply for emerging sectors such as AI and data centres.

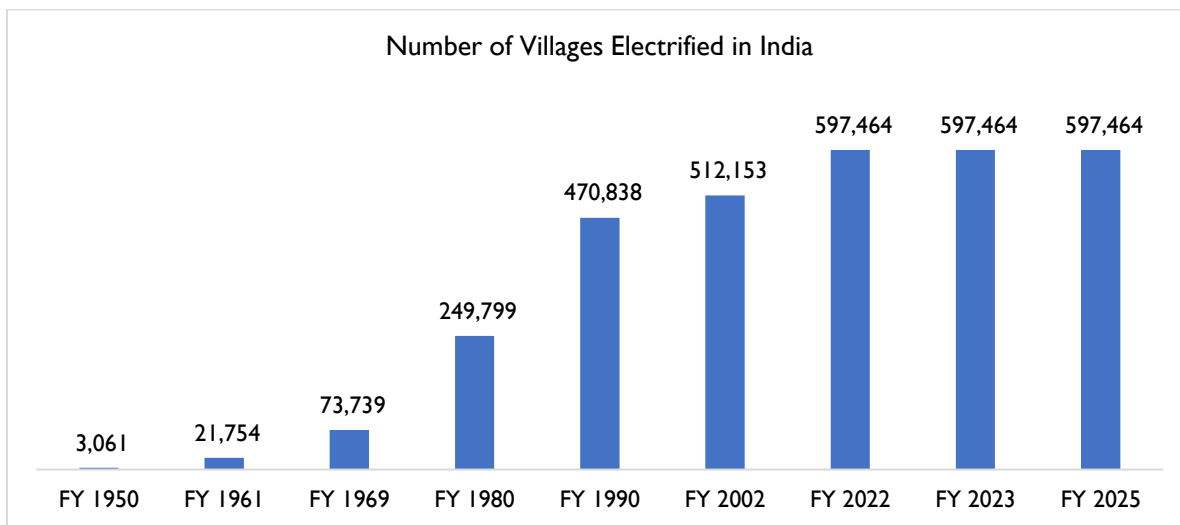
Every data centre requires extensive electrical infrastructure, including power cables, control cables, structured cabling, fibre optic cables, switchgear, and power distribution systems to ensure reliable power supply and high-speed connectivity. Consequently, the expansion of data centre infrastructure is expected to emerge as a key demand driver for the electrical wires and cables industry. Government initiatives such as the Draft Data Centre Policy, Digital India programme, state-level data centre policies, and increasing investments by hyperscale and colocation operators are further supporting the growth of the sector.

¹⁵ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2239616®=3&lang=1>



Rural Electrification:

Rural electrification has been a key focus area of the Government of India to promote inclusive socio-economic development and ensure universal access to electricity. Since Independence, the country has made significant progress in expanding electricity access across rural areas through continuous investments in generation, transmission, and distribution infrastructure. The number of electrified villages increased from **3,061 in 1950** to **597,464 in 2022**, reflecting the Government's sustained efforts under schemes such as the **Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)**, **Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)**, and **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya)**. As India has achieved **100% village electrification**, the total number of electrified villages has remained at **597,464 from 2022 through 2025**, based on the total inhabited villages as per the Census 2011.



Source: Central Electricity Authority (CEA)¹⁶

Following the achievement of universal village electrification, the Government's focus has shifted towards strengthening the rural power distribution network through the **Revamped Distribution Sector Scheme (RDSS)**. Investments are being directed towards feeder separation, augmentation of substations and distribution transformers, replacement of ageing conductors, installation of smart metering infrastructure, and modernization of rural distribution systems to improve the quality, reliability, and efficiency of power supply. These initiatives are expected to generate sustained demand for low-voltage and medium-voltage power cables, aerial bunched cables, house wiring cables, service cables, and other electrical infrastructure products, thereby supporting the long-term growth of the electrical wires and cables industry.

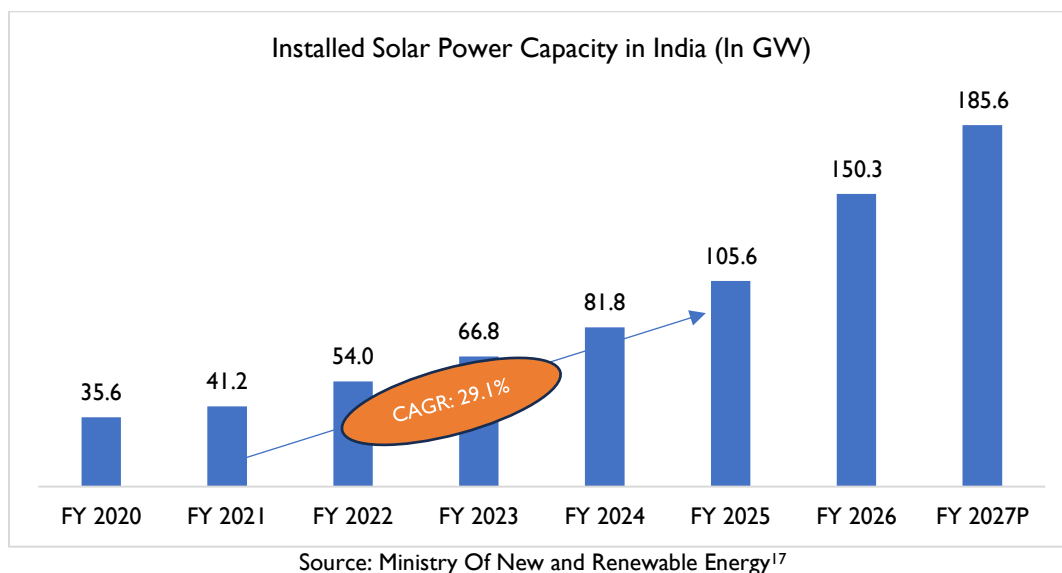
Growth in India's Renewable Energy Sector:

¹⁶ https://cea.nic.in/wp-content/uploads/pdm/2025/11/Growth_Book_2025.pdf



India's transition towards renewable energy is expected to be a significant growth driver for the electrical wires and cables industry. As a signatory to the **Paris Agreement** under the **United Nations Framework Convention on Climate Change (UNFCCC)**, India has committed to increasing the share of clean energy in its electricity mix and reducing greenhouse gas emissions. In line with these commitments, the Government of India has set a target of achieving **500 GW of non-fossil fuel-based installed electricity capacity by 2030** through continued investments in solar, wind, energy storage, and transmission infrastructure.

Government initiatives such as the **National Solar Mission**, **PM Surya Ghar: Muft Bijli Yojana**, **Green Energy Corridor Projects**, and the **Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules** are expected to further accelerate the deployment of renewable energy projects across the country.



India's installed solar power capacity has witnessed robust growth over the past few years, increasing from **35.6 GW in FY2020** to **81.8 GW in FY2024**, driven by the expansion of utility-scale solar parks, rooftop solar installations, and commercial & industrial (C&I) solar projects. Supported by favourable government policies and increasing investments in clean energy infrastructure, installed solar capacity is projected to increase further to **105.6 GW in FY2025**, **150.3 GW in FY2026**, and **185.6 GW by FY2027**. The sustained expansion of solar power generation is expected to create significant opportunities across the renewable energy value chain, including electrical equipment, transmission infrastructure, and balance-of-system components.

¹⁷ <https://mnre.gov.in/en/year-wise-achievement/>
<https://www.pib.gov.in/PressReleaselframePage.aspx?PRID=1928750&utm®=48&lang=2>

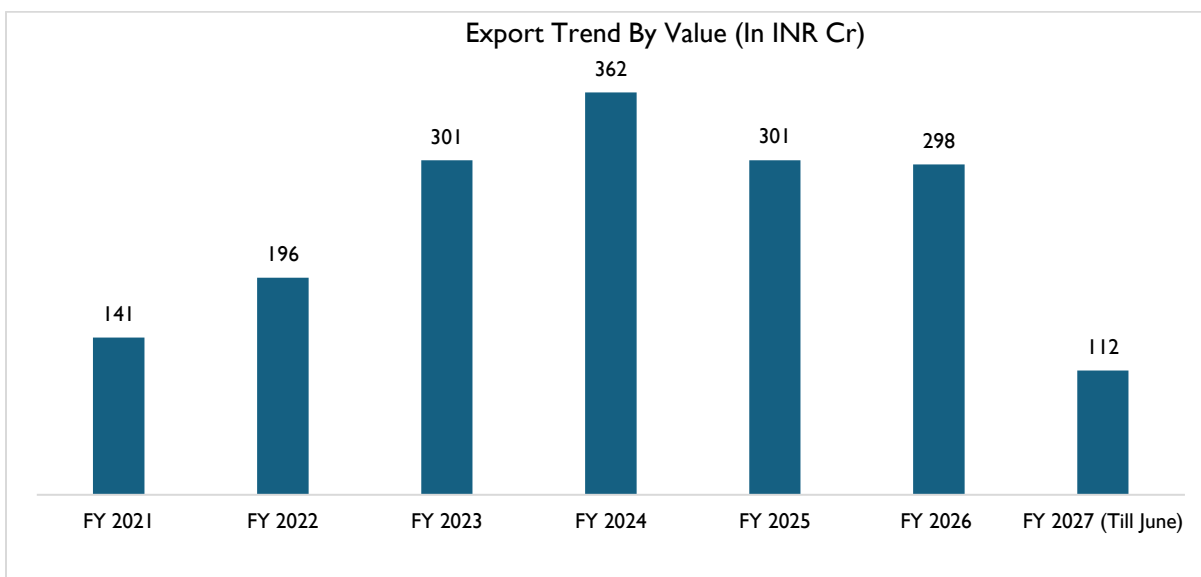


The rapid growth of the solar energy sector is also expected to drive sustained demand for specialized solar wires and cables used in photovoltaic (PV) installations, utility-scale solar parks, rooftop solar systems, floating solar projects, and commercial & industrial renewable energy installations. Solar projects require high-performance DC cables, AC power cables, earthing cables, and other electrical connectivity solutions to ensure efficient and safe transmission of electricity under varying environmental conditions. As India continues to expand its renewable energy capacity, the demand for durable, UV-resistant, and weather-resistant solar cables is expected to increase, creating long-term growth opportunities for manufacturers operating in the electrical wires and cables industry.

Export & Import Scenario ¹⁸

Export Market

India's exports of electrical wires and cables have shown strong and consistent growth, reflecting improving global competitiveness, better product quality, and rising demand across international markets. Export value increased from INR 141 crore in FY2021 to INR 298 crore in FY2026, registering a CAGR of ~16%, indicating sustained growth in India's export market.



Source: Directorate General of Foreign Trade

In FY2027 (Till June), exports stood at INR 112 crore, indicating continued export momentum in the current financial year. Overall, the growth in export value highlights India's increasing global competitiveness and expanding presence in international electrical wires and cables markets.

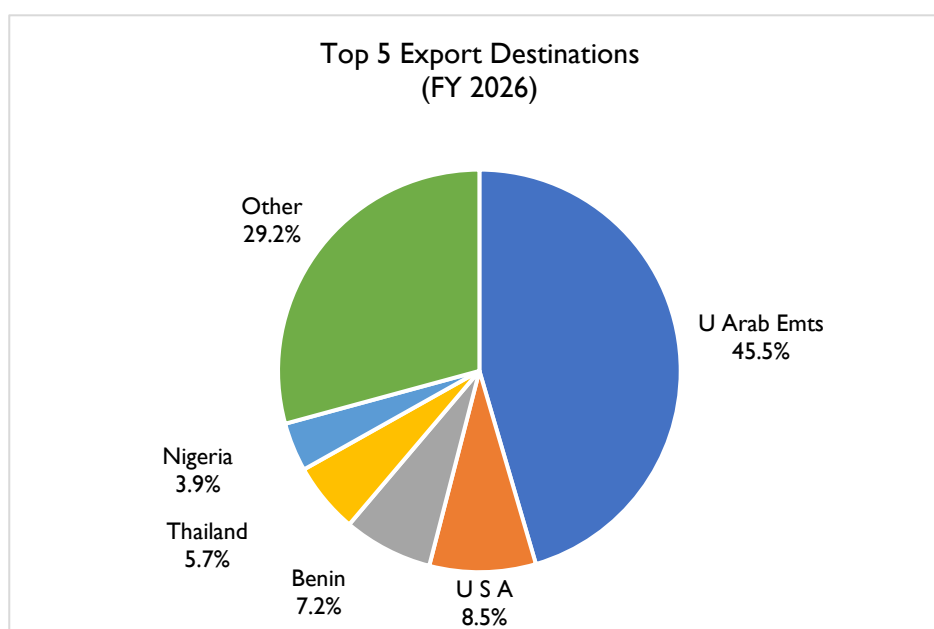
¹⁸ HS Code: 85441920



Key Export Destinations

India's exports of electrical wires and cables remain moderately diversified, with the United Arab Emirates emerging as the largest destination, accounting for 45.5% of total exports in FY 2026. This strong share reflects robust demand from a key global trade hub and highlights India's capability to meet international quality and supply requirements. The United States follows with a share of 8.5%, indicating continued penetration into a mature and high-standard market.

Other key export destinations include Benin (7.2%), Thailand (5.7%), and Nigeria (3.9%), reflecting steady demand across emerging economies, particularly for infrastructure and electrification requirements. Additionally, the "Others" category accounts for 29.2%, highlighting a broad and diversified export base.

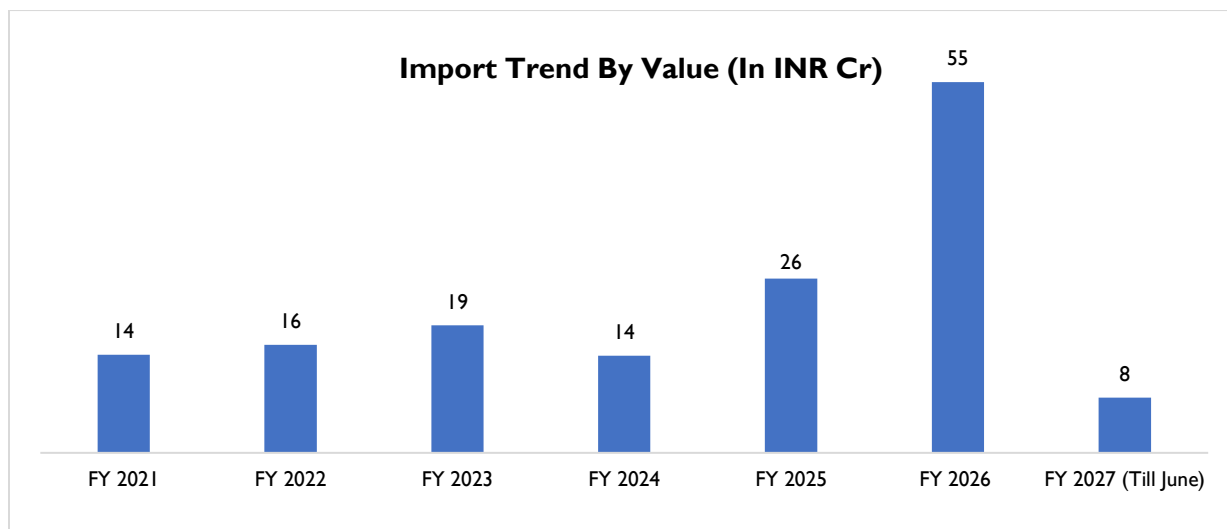


Source: Directorate General of Foreign Trade

Imports Market

Imports have shown a significant upward trend, with import value increasing from INR 14 crore in FY2021 to INR 55 crore in FY2026, representing a CAGR of approximately 30% during FY2021–FY2026. The sharp increase in FY2026 indicates stronger demand for specialized and high-specification products, despite improving domestic manufacturing capabilities. Imports stood at INR 8 crore in FY2027 (till June), reflecting the partial-year nature of the data.

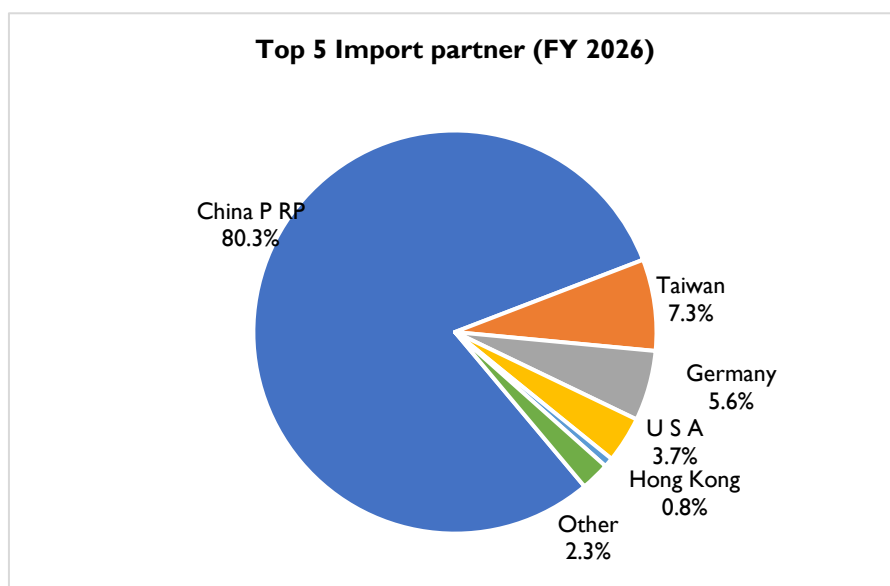




Source: Directorate General of Foreign Trade

Key Import Destinations

India's imports of electrical wires and cables are highly concentrated, with China emerging as the dominant supplier, accounting for approximately 80.3% of total import value in FY2026. Taiwan (7.3%) and Germany (5.6%) follow as key contributors, indicating demand for specialized and technologically advanced cable solutions. The United States (3.7%) also supplies high-specification products, while Hong Kong (0.8%) has a limited share. The "Others" category (2.3%) highlights the limited diversification of India's import sources beyond the major suppliers.



Regulatory Landscape

The regulatory framework for the LT power cable market in India is structured to ensure safety, quality, and standardization across products. It is primarily governed by the Bureau of Indian Standards (BIS) Act, 2016, under which BIS acts as the national authority for setting Indian Standards (IS) and enforcing compliance. The Act mandates adherence to defined standards for cable design, materials, insulation, and performance, ensuring safe usage across residential, commercial, and industrial applications.

Mandatory compliance is further enforced through Quality Control Orders (QCOs), issued by the Department for Promotion of Industry and Internal Trade (DPIIT), which require both domestic manufacturers and importers to obtain BIS certification (ISI mark) before selling products in India. Additionally, the Foreign Manufacturers Certification Scheme (FMCS) ensures that imported cables meet the same quality benchmarks. The Electricity Act, 2003 complements this framework by mandating the use of safe and standards-compliant equipment in electrical installations.

Indian Standards such as IS 7098 (XLPE cables), IS 694 (PVC wires), IS 8130 (conductors), and testing standard IS 10810 define key requirements for performance, safety, and testing, including fire-resistant variants like FR, FRLS, and LSZH. These are increasingly aligned with IEC standards, enabling global compatibility. For exports, manufacturers also comply with international standards (IEC), regional certifications (CE, UL), and environmental norms (RoHS), ensuring access to global markets. Overall, the regulatory ecosystem supports product reliability, operational safety, and the industry's transition toward high-quality, globally competitive offerings.

Key Market Trends

Shift Toward FRLS / LSZH Cables

The LT cable market is witnessing a structural shift toward FRLS and LSZH variants, driven by increasing focus on fire safety and regulatory compliance. Unlike conventional PVC cables, these variants reduce flame spread, smoke density, and toxic emissions, making them ideal for high-density applications such as residential high-rises, commercial buildings, metros, and data centers. This trend is driving product premiumization and benefiting organized players with certified, high-performance offerings.

Rising Adoption of XLPE Insulated Cables

There is a strong shift toward XLPE insulated cables due to their superior thermal, electrical, and mechanical performance. XLPE cables offer higher current carrying capacity, better durability, and longer service life, making them suitable for high-load and critical applications. Despite higher upfront costs, their reliability and lower lifecycle costs are driving adoption across infrastructure, commercial, and industrial segments.



Other Key Market Trends

- Increasing shift toward organized and branded players driven by quality and compliance requirements
- Product premiumization with higher adoption of value-added and specialized cables
- Advancements in materials and manufacturing technologies improving performance and durability
- Rising demand for application-specific cable solutions
- Gradual shift from PVC to advanced insulation (XLPE, LSZH)
- Continued margin sensitivity to copper and aluminium price volatility

Threats & Challenges

The LT power cable industry in India, despite strong demand from infrastructure, real estate, and industrial sectors, operates in a highly cost-sensitive and regulation-driven environment. Manufacturers are required to balance pricing competitiveness with strict quality compliance and operational efficiency, while managing evolving market expectations around safety and performance.

Raw Material Price Volatility

Volatility in key raw materials such as copper, aluminium, and PVC accounting for ~60–70% of total production costs remains a major challenge. Prices are influenced by global factors such as commodity cycles, energy costs, and currency movements, making cost estimation difficult. This is particularly critical in long-term or fixed-price contracts, where sudden price increases can erode margins. While larger players adopt strategies such as dynamic pricing and hedging, smaller manufacturers remain more exposed to these fluctuations.

Regulatory and Compliance Pressure

The regulatory environment is becoming increasingly stringent, with mandatory BIS certification, QCO compliance, and fire safety standards (FR/FRLS/LSZH). While essential for ensuring quality and safety, these requirements increase costs related to testing, certification, and process upgrades. Frequent updates in standards and alignment with IEC norms further add to compliance complexity, particularly for smaller and unorganized players.

Execution and Working Capital Risks

Execution risks are significant in infrastructure and EPC projects, which involve customized specifications, strict timelines, and complex logistics. Delays in raw material procurement, transportation, or project approvals can impact delivery schedules and attract penalties. Additionally, long receivable cycles especially in government projects lead to working capital stress, affecting liquidity and operational efficiency.



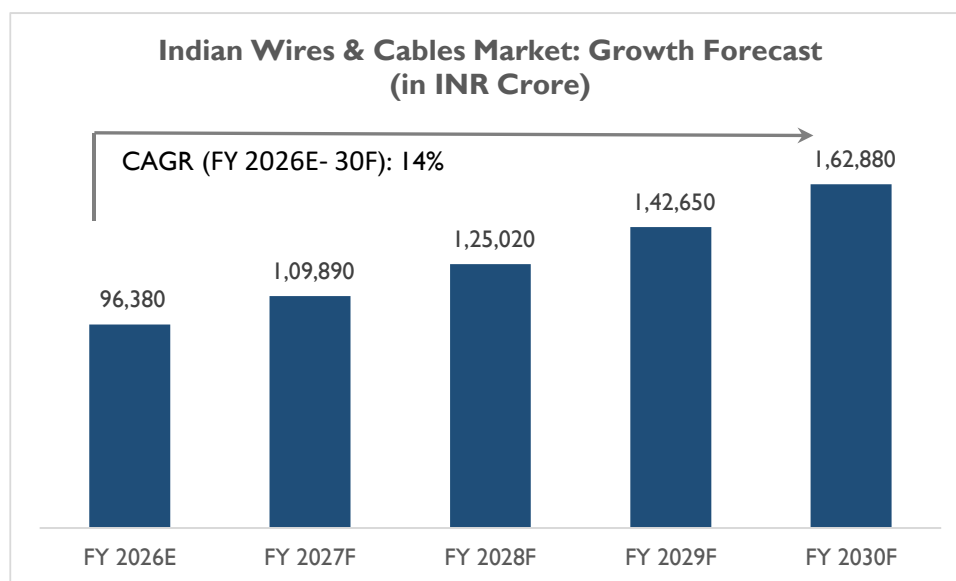
Structural & Operational Challenges

The industry also faces several structural constraints:

- Intense competition from **unorganized players**, leading to pricing pressure and quality inconsistencies
- Limited differentiation in **commodity segments** (especially PVC cables), resulting in price-driven competition
- High **working capital requirements** and dependence on external financing
- **Supply chain disruptions** due to reliance on domestic and imported raw materials
- Continuous need for **technology upgrades** to meet demand for high-performance cables
- Increasing focus on **environmental compliance**, driving transition toward eco-friendly materials such as LSZH

Growth Forecast

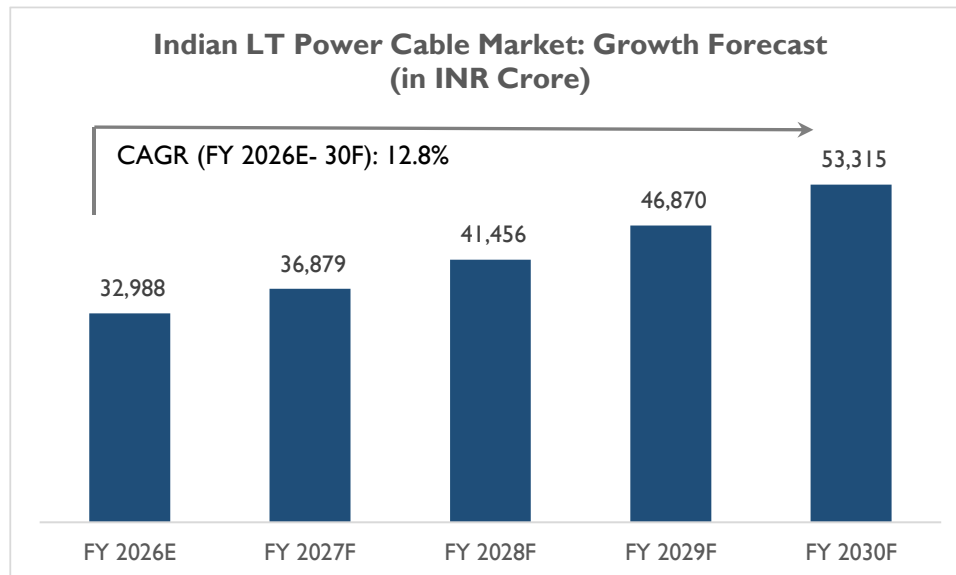
Indian cable & wire industry is expected to continue its strong growth propelled by rising demand from sectors as diverse as infrastructure, real estate, automotive and consumer durables. In addition, urbanization and increased electrification further sustained demand, although raw material volatility and pricing pressure from unorganized players do pose challenges.



Source: Dun & Bradstreet Research & Estimates, E- Estimated, F- Forecast



Meanwhile the overall macro & industry specific factors are also expected to support the future growth of LT power cable industry in India. By 2030, the Indian market for LT power cables is expected to reach around INR 53,315 crore, growing by a CAGR of nearly 12.8% between FY 2026 and 2030.



Source: Dun & Bradstreet Research & Estimates, E- Estimated, F- Forecast

Competitive Landscape

The Indian wire and cable industry is highly competitive, characterized by the presence of both organized and unorganized players. The organized segment is gradually gaining market share due to increasing consumer awareness regarding safety, quality standards, and compliance requirements, along with advancements in technology and strong brand positioning.

The industry exhibits moderate to high entry barriers, primarily due to significant capital investment required for manufacturing infrastructure, quality testing facilities, and regulatory certifications. However, factors such as deregulation in power and telecom sectors, along with improvements in logistics and distribution, have enabled relatively easier market access for smaller players, especially in low-end segments. The sector is also highly sensitive to raw material price volatility, particularly copper, aluminium, PVC, and rubber, which directly impacts pricing strategies and profit margins. Government initiatives such as infrastructure development, electrification programs, and renewable energy expansion continue to drive demand for wires and cables.

Nature of Industry

The Indian wire and cable industry is a fast-growing and demand-driven market, supported by sectors such as power, construction, telecom, and renewable energy. The industry remains highly fragmented. While organized players dominate the premium and branded segments, the unorganized sector competes primarily on cost,



especially in commoditized products like PVC cables. Increasing awareness of fire safety and electrical reliability is driving demand for advanced cable types such as LSZH (Low Smoke Zero Halogen) and fire-resistant cables, leading to gradual premiumization within the industry.

Analysis of Factors Shaping Competition

- **Market Structure and Concentration:**

The industry is highly fragmented, with a dual structure comprising organized and unorganized players. Large companies dominate the branded and high-quality segment, while the unorganized sector competes aggressively on price in low-end categories.

- **Cost of Raw Materials:**

The industry is heavily dependent on raw materials such as copper, aluminium, PVC, and rubber, which are subject to significant price fluctuations, directly impacting production costs and margins.

- **Pricing Pressure:**

Intense competition, particularly from unorganized players, creates pricing pressure across segments. Even organized players must balance quality with competitive pricing amid rising input costs.

- **Product Differentiation and Innovation:**

Companies in the organized sector compete on quality, safety standards, and technological innovation. Demand for specialized cables such as FRLS (Flame Retardant Low Smoke), LSZH (Low Smoke Zero Halogen), and XLPE (Cross-Linked Polyethylene) is increasing, providing differentiation opportunities.

- **Brand Strength and Reputation:**

Established brands enjoy strong customer trust, especially in safety-critical applications, giving them a competitive advantage over smaller players.

- **Distribution Networks:**

Extensive and well-established distribution networks, including dealer and retailer relationships across urban and rural markets, are critical for market penetration and sustained growth.

Key Players

Company Name	Overview
Polycab India Limited	Polycab India Limited, incorporated in 1996, is a Mumbai-headquartered company engaged in wires & cables and fast-moving electrical goods (FMEG) for residential, commercial, and industrial applications. It operates 28 manufacturing facilities across Gujarat, Maharashtra, Uttarakhand, and Daman & Diu, and offers a diversified portfolio including cables, fans, switches,



	switchgear, lighting, solar products, and home automation solutions. The company has a strong distribution network and serves customers in over 70 countries.
Finolex Cables Limited	Finolex Cables Limited, established in 1958 and headquartered in Pune, is a leading manufacturer of electrical and communication cables in India, catering to residential, commercial, and industrial applications. The company operates multiple manufacturing facilities across Pimpri and Urse (Pune), Goa, and Roorkee (Uttarakhand), supported by advanced production and testing capabilities. Its diversified portfolio includes PVC and XLPE cables, FRLS cables, power and control cables, and communication cables such as LAN, coaxial, and optical fiber, along with products like auto cables and solar cables. In addition, the company offers a range of electrical products, including fans, switches, switchgear, lighting, water heaters, and conduits. Backed by a strong pan-India distribution network, Finolex serves a wide range of end-use segments with a focus on quality and reliability.
RR Kabel	RR Kabel Limited, incorporated in 1995 and headquartered in Mumbai, is a leading manufacturer of wires and cables, along with a diversified portfolio of electrical products catering to residential, commercial, industrial, and infrastructure applications. The company operates across multiple segments, including wires & cables and FMEG products such as switches, fans, lighting, switchgear, and appliances. Its product portfolio includes house wires, industrial and power cables, specialty cables, and a range of electrical solutions, supported by in-house design and engineering capabilities. RR Kabel has developed a
KEI Industries	KEI Industries Limited, established in 1968 and headquartered in New Delhi, is a leading manufacturer of wires and cables catering to residential, commercial, industrial, and infrastructure applications. The company operates manufacturing facilities in Bhiwandi and Pathredi (Rajasthan) and Silvassa, supporting strong production capabilities.



Its diversified portfolio includes EHV, MV, and LV power cables, control and instrumentation cables, house wires, solar cables, fire-resistant cables, and stainless-steel wires. KEI also undertakes EPC projects in power transmission and distribution. With a robust domestic distribution network and exports to multiple countries, the company serves a wide range of end-use sector



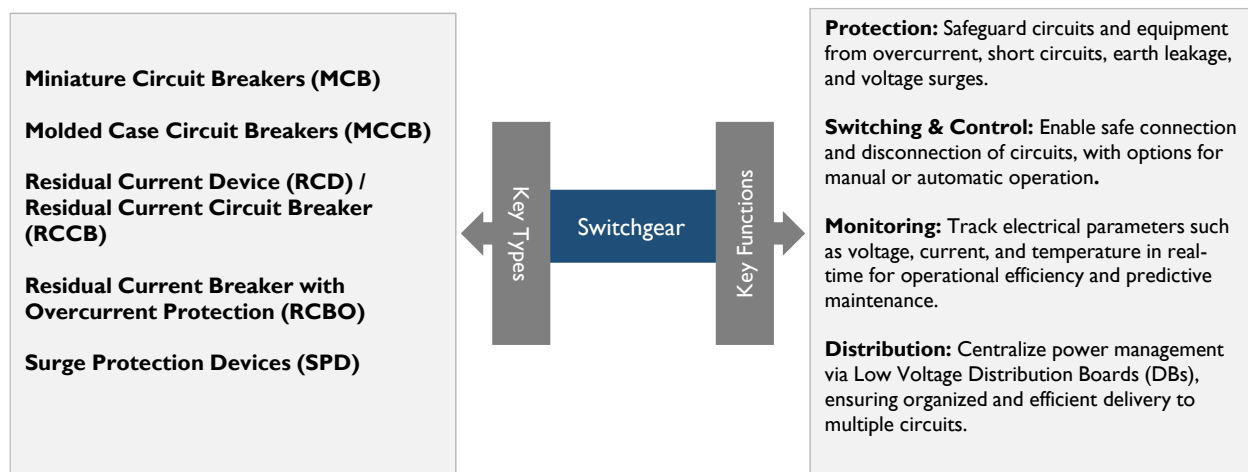
LV Switchgear

Overview

Low Voltage (LV) Switchgear is a class of power protection & distribution devices that play a key role in electrical equipment ecosystem, serving as an interface between the generation / supply layer and the consumption layer. Key role of this class of devices is to ensure electricity supplied is safely managed, controlled and distributed to end-use application, ensuring electrical devices are protected from voltage surges, overloads and other faults.

Modern switchgear systems used in electrical networks are modular, scalable, and complies with both national and international safety standards (including IECs and BIS). These devices find applications in electrical systems deployed in residential, commercial, and industrial premises.

Switchgear: Key Functions & Types



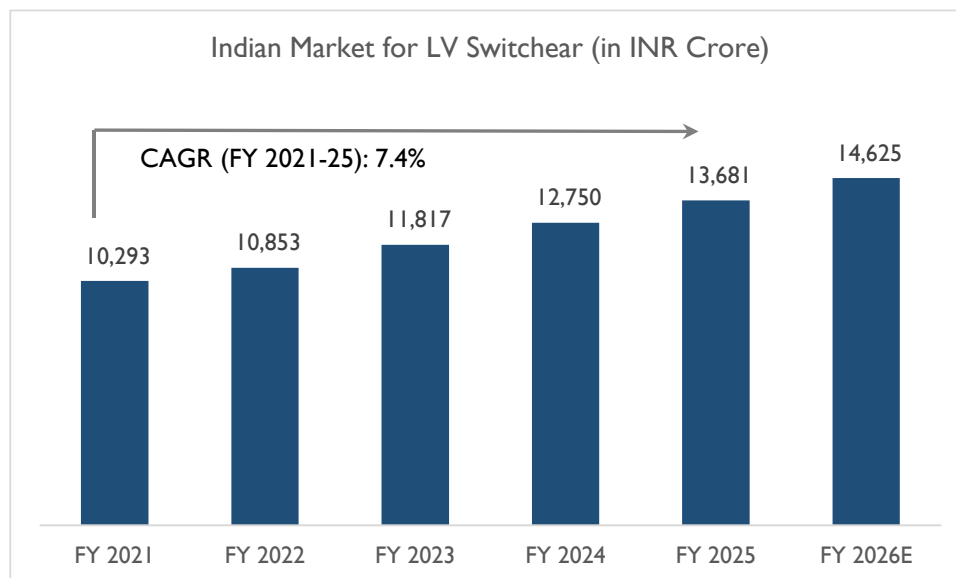
Indian Market Scenario

The India low-voltage (LV) switchgear market has demonstrated steady growth, supported by rising electricity demand, expansion of power distribution infrastructure, and increasing adoption of electrical safety solutions across residential, commercial, and industrial sectors. LV switchgear plays a vital role in ensuring safe and efficient power distribution, particularly in low-voltage applications such as buildings, factories, and infrastructure projects.

The market is benefiting from government initiatives focused on electrification, smart grid development, and infrastructure modernization, along with growing awareness regarding electrical safety and energy efficiency. Additionally, the shift toward organized and branded products is strengthening the market landscape, with manufacturers emphasizing product reliability, compliance with standards, and technological advancements.



Indian market for LV switchgear reached approximately INR 13,681 Crore in FY 2025, growing by a CAGR of 7.4% between FY 2021 and 2025. The industry has continued its strong growth in FY 2026 and is estimated to have reached INR 14,625 crore in FY 2026.



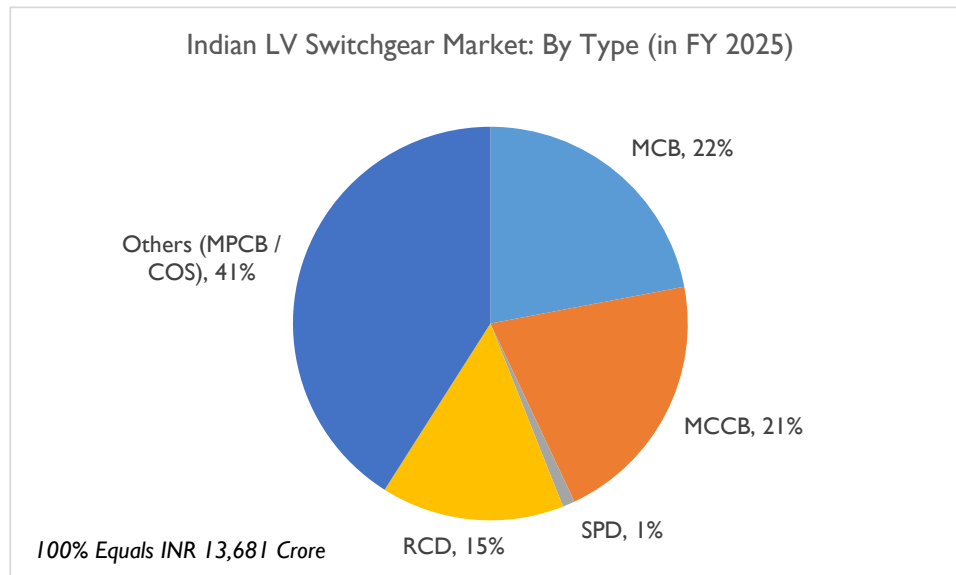
Source: D&B Research and Estimates

Furthermore, the growing emphasis on electrical safety and the replacement of outdated electrical systems supported demand for modern switchgear solutions. However, fluctuations in raw material costs (such as copper and steel), pricing pressures, and competition from unorganized players slightly impacted overall growth momentum.

Market Segmentation: By Types of Switchgear

The LV switchgear market in India is characterized by a diversified product mix, with MCB (Miniature Circuit Breaker) and MCCB (Moulded Case Circuit Breaker) segments holding a dominant share, driven by their widespread usage across residential, commercial, and industrial applications. Together they accounted for 43% of the total Indian LV switchgear market in FY 2025, with MCB accounting for 22% and MCCB the remaining.





Source: D&B Research and Estimates

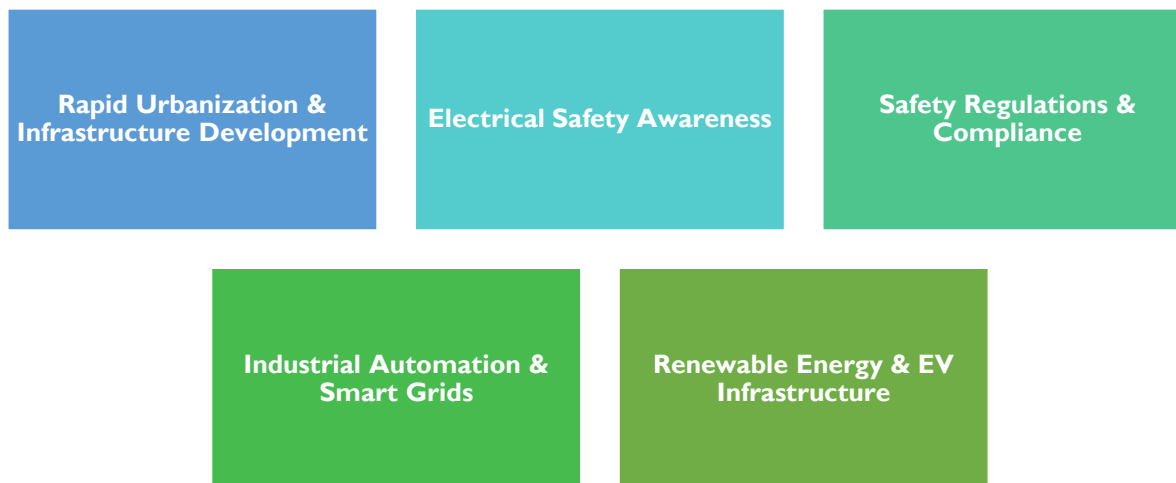
RCD (Residual Current Device) formed the third largest segment in Indian LV switchgear market, accounting for nearly 15% of the total market size in FY 2025. The increasing emphasis on electrical safety & protection have propelled RCD into the third largest segment

Meanwhile, SPDs (Surge Protection Devices), though smaller in size, are witnessing faster growth due to rising awareness regarding protection against voltage surges and sensitive electronic equipment. Others (Motor Protection Circuit Breaker – MPCB, Changeover Switch – COS) also form a substantial portion of the market, primarily driven by industrial and specialized applications. Overall, the market reflects a balance between high-volume standard protection devices and growing demand for advanced safety and protection solutions.



Demand Scenario

Key Demand Drivers



Rapid Urbanization & Infrastructure Development

Rapid urbanization and large-scale infrastructure development in India are among the most significant demand drivers for the LV protection devices market, as they directly increase the scale and complexity of electrical networks. Urban areas already contribute close to 70% of the country's GDP, and with over 40% of the population expected to reside in cities by 2030, the demand for residential housing, commercial establishments, and public infrastructure is rising sharply. This structural shift is leading to continuous expansion of power distribution systems, requiring reliable protection mechanisms to ensure safety, efficiency, and uninterrupted electricity supply across densely populated urban environments.

The government's strong policy push toward urban infrastructure development further amplifies this demand. Under the Smart Cities Mission, more than 8,000 projects worth approximately INR 1.6 lakh crore have been undertaken, focusing on smart grids, intelligent energy management, urban mobility, and digital infrastructure. These projects require advanced electrical systems with integrated protection mechanisms to ensure operational safety and efficiency.

This surge in construction and infrastructure activity is directly driving the demand for LV protection devices such as MCBs, MCCBs, and RCDs, as modern electrical systems require robust protection to prevent faults and ensure reliable operations.

Electrical Safety Awareness

Increasing awareness regarding electrical safety is emerging as a key demand driver for LV protection devices in India, supported by rising incidences of electrical accidents and continuous government-led awareness initiatives.



As per data from the Central Electricity Authority, India witnesses around 2,000 fatal electrical accidents annually, with total (fatal and non-fatal) incidents estimated at nearly 40,000 cases per year, largely caused by issues such as faulty wiring, poor insulation, improper earthing, and overload conditions.

These statistics highlight the significant risks associated with low-voltage electrical systems, particularly in residential and commercial environments, thereby increasing the need for reliable protection devices. Additionally, electrical faults are a leading cause of fire incidents in urban areas, further reinforcing the importance of preventive safety measures.

In response, the government and regulatory bodies have been actively promoting electrical safety awareness through nationwide initiatives such as Electrical Safety Day (26th June) and National Electrical Safety Week, along with the launch of safety handbooks and public awareness campaigns targeting students, industries, and general consumers.

These initiatives emphasize safe installation practices, use of certified equipment, and adoption of protective devices to minimize risks. As awareness improves, both consumers and industries are increasingly prioritizing safety, leading to a shift from conventional systems to advanced LV protection devices such as MCBs, RCCBs, and RCBOs. This growing focus on safety compliance and risk prevention is expected to drive sustained demand for high-quality and technologically advanced protection solutions across sectors.

Safety Regulations & Compliance

Stringent government regulations and safety standards are playing a pivotal role in driving demand for LV protection devices in India, as compliance with electrical safety norms has become mandatory across residential, commercial, and industrial installations. The regulatory framework is primarily governed by standards issued by the Bureau of Indian Standards (BIS), which are aligned with international IEC norms. These standards define performance requirements, breaking capacity, sensitivity levels, and testing conditions, ensuring that only certified and reliable products are deployed in electrical systems.

In addition, the Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations mandate the use of adequate protective devices to safeguard against overloads, short circuits, and earth leakage currents. These regulations emphasize proper system design, earthing, insulation, and fault protection mechanisms, making the installation of circuit breakers and residual current devices essential across all voltage levels.

Electrical safety provisions are also embedded within the National Building Code (NBC) of India, which requires the use of appropriate protection devices in residential and commercial buildings to minimize fire risks and electrical hazards.



Furthermore, regulatory enforcement is strengthening through inspections, approvals, and compliance requirements across infrastructure projects, industrial facilities, and urban developments. Sectors such as real estate, manufacturing, energy, and transportation must adhere to strict safety guidelines before commissioning electrical systems.

With increasing electrification, higher load densities, and integration of modern technologies, compliance with these norms is becoming more critical. As a result, adherence to regulatory standards is not only ensuring safety and reliability but also driving sustained demand for certified, high-performance LV protection devices such as MCBs, MCCBs, and RCDs across the Indian market.

Industrial Automation & Smart Grids

The rapid growth of industrial automation and the development of smart grid infrastructure are significantly driving demand for advanced LV protection devices in India. With industries increasingly adopting automation technologies such as programmable logic controllers (PLCs), robotics, and IoT-enabled systems, the need for precise, reliable, and fast-acting protection mechanisms has become critical.

Automated production environments operate with high equipment density and continuous processes, where even minor electrical faults can lead to costly downtime and operational disruptions. This has led to increased adoption of advanced protection devices such as MCCBs, RCBOs, and intelligent relays that can ensure accurate fault detection, selective tripping, and system reliability.

In parallel, the transition toward smart grids is further strengthening demand for intelligent and connected protection solutions. Smart grid initiatives focus on real-time monitoring, automated fault isolation, and efficient energy distribution, requiring protection devices that can integrate with digital control systems and communication networks.

Government-led programs such as the modernization of power distribution infrastructure and smart metering initiatives are accelerating this transition. These developments require LV protection devices with enhanced capabilities such as remote monitoring, data analytics, and quick response to voltage fluctuations or faults.

As industries and utilities move toward more digital and energy-efficient systems, the demand for smart, responsive, and high-performance LV protection devices is expected to grow steadily, making automation and smart grid development a key long-term driver for the market.

Renewable Energy & EV Infrastructure

The increasing focus on renewable energy and the rapid expansion of electric vehicle (EV) infrastructure are emerging as strong demand drivers for LV protection devices in India. The Government of India has set an ambitious target of achieving 500 GW of non-fossil fuel-based power capacity by 2030, as part of its climate



commitments under the Paris Agreement and national energy transition strategy. As per official data from the Ministry of Power, non-fossil fuel capacity has already reached ~51.9% of total installed capacity (266.79 GW out of 513.73 GW as of Dec 2025), highlighting the rapid pace of renewable integration.

To support this large-scale renewable deployment, the government has introduced multiple initiatives such as waiver of inter-state transmission charges, competitive bidding frameworks, and a renewable energy bidding trajectory of 50 GW annually. This significantly increases the requirement for advanced low-voltage protection systems in renewable installations and battery energy storage systems (BESS).

At the same time, the EV ecosystem is expanding rapidly and is closely linked with renewable energy integration, as electric mobility is a key component of India's clean energy transition. As per recent government data, over 29,151 public EV charging stations¹⁹ have already been installed across the country, including a mix of fast and slow chargers, reflecting the growing scale of infrastructure deployment.

The government has also de-licensed EV charging, allowing private participation, and introduced schemes such as FAME and PM E-DRIVE with dedicated funding support to accelerate charging infrastructure development. EV charging stations operate under high electrical loads, dynamic demand patterns, and continuous usage, requiring robust LV protection devices to manage voltage fluctuations, prevent faults, and ensure user safety.

The convergence of renewable energy and EV infrastructure is further amplifying demand, as EV charging networks are increasingly being integrated with solar power systems and smart grids. This integration creates more complex and interconnected electrical networks, where reliable protection mechanisms are critical for both operational efficiency and safety. As India continues to scale renewable capacity and EV adoption simultaneously, the need for advanced, durable, and intelligent LV protection devices is expected to grow significantly, supporting the transition toward a sustainable, electrified, and digitally managed energy ecosystem.

Export and Import Scenario²⁰

Export Scenario

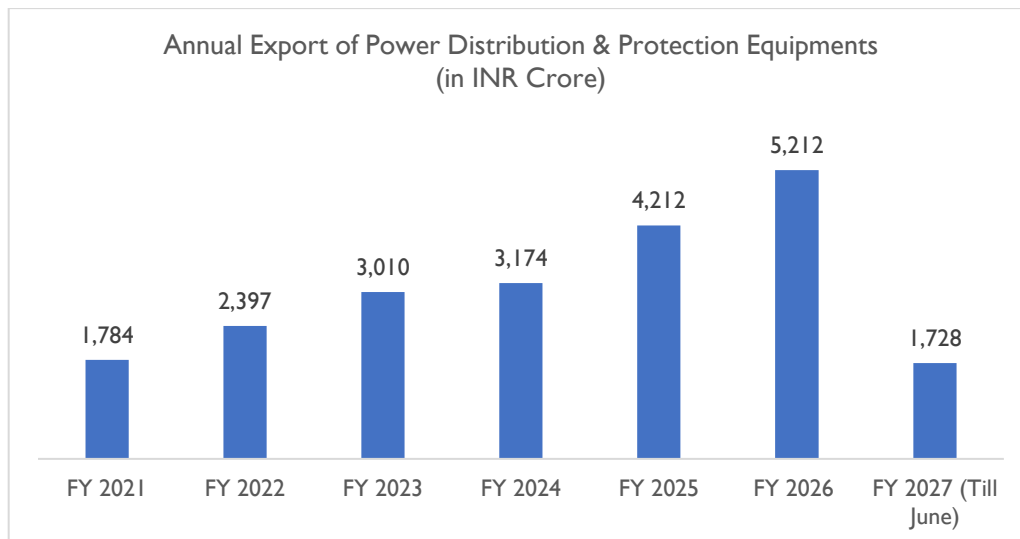
Exports are witnessing strong momentum, supported by improved manufacturing capabilities, competitive pricing and adherence to global quality standards by domestic players. Annual exports of power distribution & protection equipment reached INR 5,212 Crore in FY 2026, increasing at a CAGR of approximately 24% during FY 2021–26, compared with INR 1,784 Crore in FY 2021. This sustained growth highlights increasing global demand for Indian electrical components and the improving competitiveness of domestic manufacturers in international

¹⁹ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2204635®=3&lang=I>

²⁰ HS Code: 85369090. Represents a wide range of power distribution & protection equipment including LV Switchgear



markets. During FY 2027 (Till June), exports stood at INR 1,728 Crore, indicating continued export activity in the current financial year.



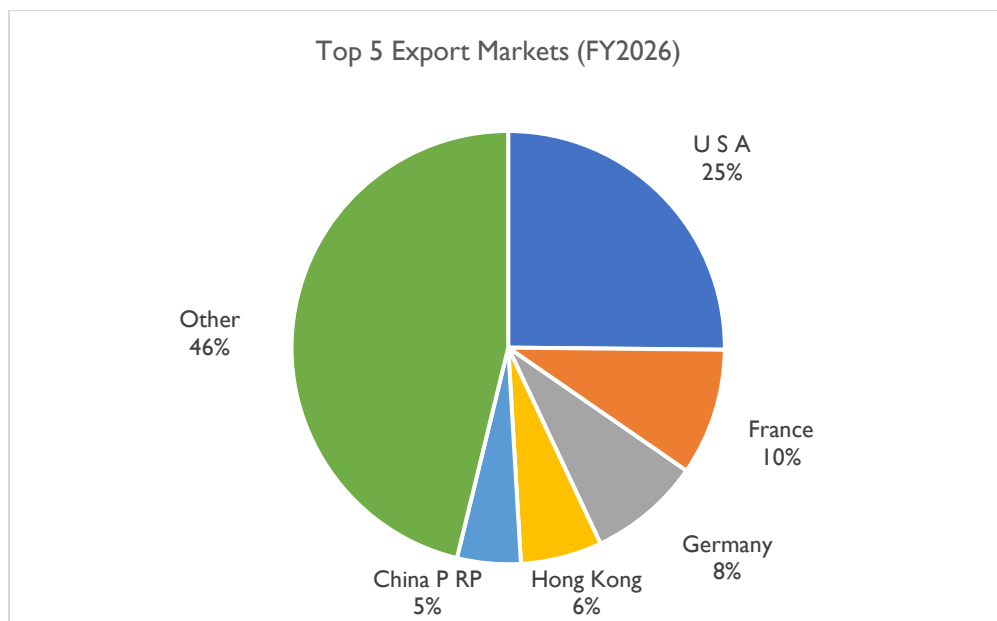
Source: Directorate General of Foreign Trade

Key Export Destinations

India's exports of power distribution products are moderately diversified, with the United States emerging as the largest export destination, accounting for 25% of total exports in FY 2026. The strong presence of the US reflects robust demand from a developed and infrastructure-intensive market and indicates the ability of Indian manufacturers to cater to international quality and safety requirements.

Other key export destinations include France (10%) and Germany (8%), highlighting India's growing presence in technically demanding European markets. Hong Kong (6%) serves as an important trade and re-export hub, providing access to wider Asian markets, while China (5%) represents a smaller but notable export destination. The Other markets collectively accounted for 46% of exports, indicating a broad geographic spread and reducing dependence on any single export market.

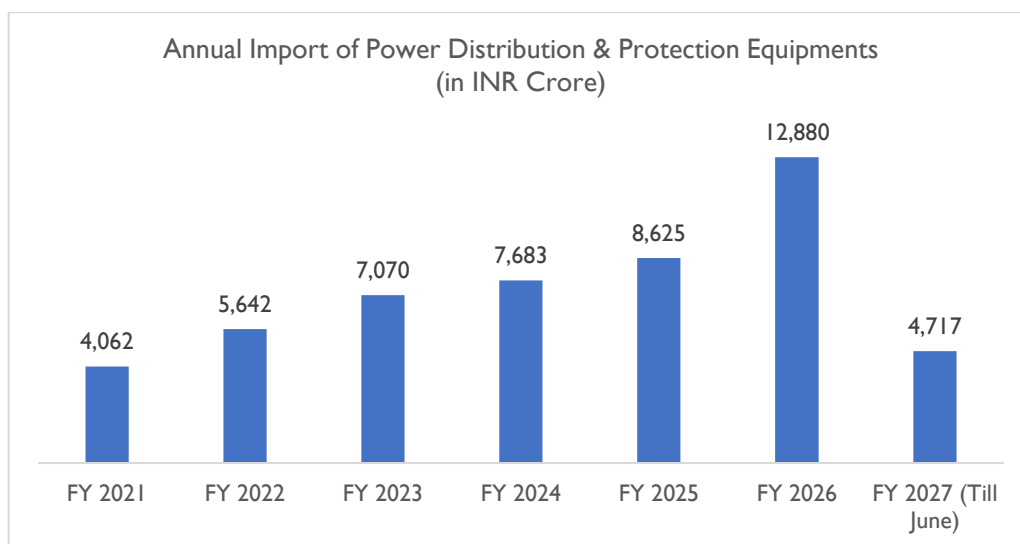




Source: Directorate General of Foreign Trade

Import Scenario

Annual import of power distribution & protection equipment to India reached INR 12,880 Crore in FY 2026, growing by a CAGR of approximately 26% between FY 2021 and FY 2026. During FY 2027 (Till June), imports stood at INR 4,717 Crore, indicating continued strong import activity in the current financial year.

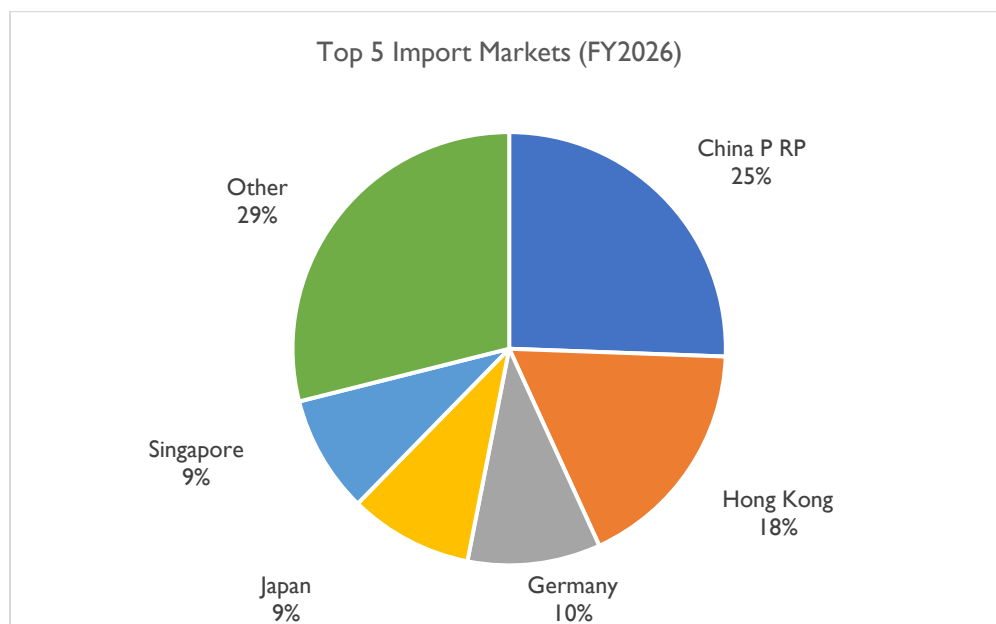


Source: Directorate General of Foreign Trade

Key Import Partners



China is the largest exporter of power distribution & protection components and equipment to India, followed by Hong Kong and Germany. During FY 2026, approximately 26% of the total power distribution & protection equipment imports to India came from China. The corresponding share of Hong Kong and Germany was approximately 18% and 10%, respectively. Japan and Singapore accounted for approximately 9% each, while other countries collectively contributed approximately 29% of total imports.



Source: Directorate General of Foreign Trade

Regulatory Landscape

India LV Switchgears and Protection Devices

India's low-voltage switchgear and protection device market is governed by a layered institutional architecture in which the Ministry of Power sets electricity-sector policy, the Central Electricity Authority (CEA) frames technical and safety regulations under the Electricity Act, state electricity regulatory commissions (SERCs) govern distribution licensing and retail supply conditions within states, the Bureau of Indian Standards (BIS) sets and certifies product standards, and the Ministry of Heavy Industries (MHI) notifies mandatory quality-control orders for electrical equipment.

The Directorate General of Foreign Trade (DGFT) and customs authorities shape cross-border entry conditions through the Foreign Trade Policy and import procedures, while local building authorities use the National Building Code (NBC) and allied standards to influence downstream installation demand in buildings and infrastructure.

This institutional setup matters commercially because market entry is no longer determined only by electrical performance and price. Manufacturers and importers of LV circuit breakers, disconnectors, contactors, starters,



and control devices increasingly require a combined compliance stack consisting of BIS certification, product testing in recognized labs, conformity to CEA safety norms at the installation stage, and tender eligibility aligned with utility modernization programs such as RDSS. Consequently, regulation now acts both as a quality filter and as a demand catalyst for organized manufacturers with test capability, documentation discipline, and scale.

Electrical Equipment (Quality Control) Order, 2020 and BIS Scheme X

The most important product-market regulation for the industry is the Electrical Equipment (Quality Control) Order, 2020 (EEQCO), notified by the Ministry of Heavy Industries on November 11, 2020, and subsequently amended on May 9, 2023 and May 3, 2024. BIS now lists a detailed compliance matrix under Scheme X covering major LV switchgear and control gear categories, including circuit breakers under IS/IEC 60947-2, switches/disconnectors/fuse-combination units under IS/IEC 60947-3, contactors and motor starters under IS/IEC 60947-4, and several control-circuit devices and switching elements under IS/IEC 60947-5.

Operationally, Scheme X materially changes compliance costs and market access. It requires product testing against specified Indian Standards, certification through BIS, and in practice draws manufacturers into an ecosystem of recognized laboratories, including CPRI, ERDA, UL India, and approved manufacturer labs listed by the MHI FAQ. Certificates/test reports issued by these laboratories are maintained as backup documentation to support product testing and compliance with the applicable BIS requirements. BIS also records phased implementation and later deferments for selected categories, which reduces short-term disruption but confirms a clear direction toward mandatory compliance across the LV protection portfolio. For organized firms, this improves entry barriers and reduces low-quality imports; for smaller firms, it raises upfront testing, audit, and documentation costs. The implication is that EEQCO is likely to accelerate formalization and premiumization in India's LV switchgear market.

National Building Code of India 2016 and Building-Side Electrical Standards

Although the National Building Code of India 2016 predates the anchor period, it remains a live regulatory reference during FY2020–FY2026 because local bodies, public works departments, and private developers continue to use it as a model code for building construction. BIS states that NBC 2016 covers administrative rules, fire and life safety, building services, and electrical and allied installations, and in 2022 BIS and PIB highlighted a companion handbook on Safety in Electrical Installations intended to guide safer low-voltage building installations.

For LV switchgear suppliers, the building code matters because residential, commercial, institutional, and mixed-use projects require codified distribution boards, breakers, isolators, and control assemblies at design approval and fit-out stages.



The commercial effect is indirect but important. A stronger codal push for safe electrical design in buildings supports the organized market for standardized boards and protective devices, especially in formal real estate, public infrastructure, and institutional projects where specification compliance is audited more closely than in informal construction. The implication is that code-linked urban construction remains a steady downstream demand engine for LV switchgear even outside utility capex cycles.

Revamped Distribution Sector Scheme (RDSS)

The Revamped Distribution Sector Scheme (RDSS) is the most significant demand-side policy for this market. The scheme funds prepaid smart metering, system metering, and distribution infrastructure upgradation, while linking grants to reform milestones and utility performance.

For LV protection and control suppliers, RDSS is directly relevant because feeder modernization, DT metering, system strengthening, and utility-side reliability upgrades typically require switchgear panels, protection devices, control gear, and allied assemblies. The scheme's reform-linked funding structure also nudges utilities toward better technical specifications, traceability, and lifecycle reliability rather than lowest-initial-cost procurement alone.

No verifiable official source was retrieved in this research set for the FY2025 or FY2026 line-item annual budget allocation of RDSS; further primary data required. The implication is that RDSS is the clearest policy-driven demand multiplier for LV switchgear in India's distribution modernization cycle.

Key Market Trends

The LV protection devices market in India is undergoing a structural transformation, driven by increasing electrification, digitalization, and the growing complexity of electrical systems across industries. As end-use applications evolve from conventional power distribution to smart infrastructure, renewable integration, and automation the role of protection devices is expanding beyond basic fault protection to include intelligent monitoring, predictive capabilities, and system-level integration. This shift is moving the market from a product-centric approach to a solution-oriented ecosystem, where safety, efficiency, and connectivity are becoming key differentiators.

Digitization & Smart Protection

Digitization is emerging as one of the most transformative trends in the LV protection devices market, with a clear shift toward smart, connected, and data-driven protection solutions. Advanced devices such as smart MCBs, MCCBs, and digital relays are increasingly equipped with capabilities like real-time data monitoring, remote operation, fault diagnostics, event logging, and predictive maintenance. These features enable users to continuously track electrical parameters such as current, voltage, load conditions, and fault occurrences, allowing



for faster decision-making and improved system reliability. Integration with communication protocols such as Modbus, IEC 61850, and other industrial standards further enables seamless connectivity with centralized control systems.

This evolution is closely aligned with the broader adoption of Industry 4.0, IoT-enabled systems, and digital infrastructure, where electrical networks are becoming an integral part of intelligent and automated ecosystems. Smart protection devices can be integrated with Building Management Systems (BMS), Energy Management Systems (EMS), and Supervisory Control and Data Acquisition (SCADA) platforms, enabling centralized monitoring, remote troubleshooting, and automated response mechanisms. This is particularly valuable in critical applications such as manufacturing plants, data centers, commercial complexes, and smart buildings, where even minor electrical faults can lead to significant operational and financial losses.

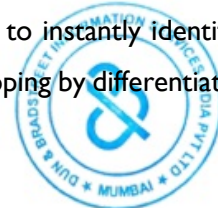
From an operational perspective, these devices help reduce unplanned downtime by enabling predictive and condition-based maintenance, as opposed to traditional reactive approaches. By analyzing historical performance data and identifying early signs of potential failures, users can schedule maintenance proactively, thereby extending equipment life and reducing maintenance costs. Additionally, enhanced visibility into energy consumption patterns allows organizations to optimize load distribution and improve overall energy efficiency.

As India continues to invest in smart grids, digital infrastructure, and connected energy systems, the demand for intelligent LV protection devices is expected to rise significantly. This trend is further supported by increasing awareness of operational efficiency, safety, and the need for real-time system control. Overall, digitization is transforming LV protection devices from passive safety components into active, intelligent assets that play a critical role in modern electrical network management.

Arc-Flash Mitigation

Arc-flash mitigation is emerging as a critical safety-driven trend in the LV protection devices market, driven by the increasing complexity, load intensity, and criticality of modern electrical systems. Arc-flash incidents typically caused by short circuits, insulation failure, equipment malfunction, or human error can result in extremely high temperatures, pressure waves, and intense light, leading to severe equipment damage, operational downtime, and serious safety risks for personnel. With the growing deployment of high-density electrical systems across industries such as manufacturing, data centers, oil & gas, and infrastructure projects, the potential impact of such incidents has increased significantly.

To address these risks, industries are increasingly adopting advanced arc-flash mitigation technologies designed to detect and isolate faults in milliseconds, thereby minimizing damage and improving personnel safety. Key solutions include arc-flash detection relays, which use light and current sensors to instantly identify arc faults; zone-selective interlocking (ZSI) systems, which enable faster and coordinated tripping by differentiating between



upstream and downstream faults; current-limiting circuit breakers, which reduce the magnitude of fault current; and high-speed tripping mechanisms, which rapidly disconnect faulty circuits before the arc escalates. These technologies not only enhance system protection but also help reduce equipment damage and maintenance costs.

In addition, there is a growing emphasis on arc-flash risk assessment, labelling, and compliance with safety standards, which is further driving the adoption of such solutions. Industries are increasingly conducting detailed studies to evaluate potential arc-flash hazards and implementing mitigation strategies as part of their safety protocols. This trend is also influenced by stricter workplace safety requirements, insurance compliance, and the need to protect high-value electrical assets.

Overall, arc-flash mitigation is becoming an essential component of modern electrical system design, particularly in high-risk and high-power applications. As awareness around electrical safety continues to increase and systems become more complex, the demand for advanced arc-flash protection solutions is expected to grow steadily, reinforcing the shift toward safer and more resilient electrical infrastructure.

Integration with Smart Energy Systems

The increasing integration of renewable energy sources, battery energy storage systems (BESS), and EV charging infrastructure is fundamentally transforming the architecture and functioning of electrical networks in India. Unlike traditional centralized grids, modern energy systems are becoming decentralized, dynamic, and bidirectional, where power flows not only from generation to consumption but also back into the grid from distributed sources such as rooftop solar and storage systems. This shift is creating a strong need for advanced, adaptive, and intelligent LV protection devices capable of handling variable loads, reverse power flow, voltage fluctuations, and intermittency associated with renewable energy sources.

As a result, LV protection devices are evolving from conventional fault protection components into integrated, communication-enabled systems. Modern devices now support real-time monitoring, data analytics, and interoperability with smart grids, energy management systems (EMS), and building management systems (BMS). These capabilities allow for better load balancing, fault detection, and system optimization in complex energy environments. For instance, in solar PV installations, protection devices must manage fluctuating generation levels due to weather conditions, while in EV charging stations, they must handle high and variable load demand along with peak load management. Similarly, in battery energy storage systems (BESS), protection devices play a crucial role in managing charge-discharge cycles, preventing thermal runaway, and ensuring safe system operation.

Additionally, the convergence of these technologies is leading to the development of integrated energy ecosystems, where renewable generation, storage, and consumption are interconnected through digital platforms. This requires protection devices that are not only reliable but also capable of real-time communication,



automation, and remote control. The increasing deployment of smart meters, distributed energy resources (DERs), and grid modernization initiatives further reinforces this trend.

Overall, as India accelerates its transition toward a clean, decentralized, and digitally managed energy ecosystem, the integration of LV protection devices with smart energy systems is expected to become a key growth driver. This trend is pushing manufacturers to focus on innovation, interoperability, and intelligent design, positioning advanced protection technologies as a critical enabler of the future energy landscape.

Compact Design, Sustainability & Compliance Trends

In addition to core technological advancements, several emerging trends are reshaping the LV protection devices market, particularly in terms of product design, environmental sustainability, and regulatory compliance. These trends reflect the industry's shift toward more efficient, space-optimized, and high-performance solutions that align with evolving infrastructure requirements and stricter safety norms.

One of the key trends is the growing demand for compact and modular switchgear solutions, especially in urban and high-density environments such as residential complexes, commercial buildings, and data centers. Space constraints in modern infrastructure are driving the need for devices that offer higher performance within smaller footprints. Modular designs enable flexibility, ease of installation, and scalability, allowing users to expand or upgrade systems without significant redesign. This is particularly beneficial in applications where electrical systems need to be adapted to changing load requirements over time.

Another important trend is the increasing focus on energy efficiency and sustainability. Manufacturers are developing products with lower energy losses, improved thermal performance, and eco-friendly materials to align with global and national sustainability goals. Energy-efficient protection devices not only reduce power losses but also contribute to lowering the overall carbon footprint of electrical systems. This is becoming increasingly relevant as organizations and infrastructure projects adopt green building standards and energy conservation practices.

There is also a strong shift toward standardization and compliance-driven product adoption, driven by stricter enforcement of safety regulations and quality standards. Regulatory frameworks such as BIS certification and adherence to IS/IEC standards are encouraging the use of certified and high-quality products across applications. This trend is helping reduce the presence of substandard and counterfeit devices in the market, while also improving overall system reliability and safety. As compliance becomes a key purchasing criterion, organized players with certified product portfolios are gaining a competitive advantage.

Additionally, continuous advancements in materials, thermal management, and product engineering are significantly improving the durability and lifecycle performance of LV protection devices. The use of high-quality



insulation materials, enhanced heat dissipation mechanisms, and improved arc-handling capabilities allows devices to operate efficiently under high-load and fault conditions. These innovations not only enhance safety but also extend product lifespan and reduce maintenance requirements.

Threats & Challenges

The LV protection devices market in India, despite strong growth, faces multiple structural and regulatory challenges that impact product quality, adoption of advanced technologies, and overall industry standardization. These challenges are becoming more critical as the market transitions toward smart, connected, and safety-compliant electrical ecosystems.

Counterfeit / Low-Quality Protection Devices

The presence of counterfeit and substandard electrical protection devices remains one of the most critical challenges in the Indian LV switchgear market, posing significant risks to safety, reliability, and overall industry growth. These products are typically manufactured without adherence to prescribed safety standards and are often sold at significantly lower prices, making them attractive in highly price-sensitive segments such as small contractors, local retailers, and rural or semi-urban markets. However, such devices often lack proper breaking capacity, insulation strength, and fault response characteristics, increasing the risk of electrical failures, short circuits, overheating, and fire hazards.

From a regulatory standpoint, the government has strengthened quality control through the Bureau of Indian Standards (BIS), which mandates certification for electrical products under specific Indian Standards aligned with IEC norms. Key standards applicable to LV protection devices include IS/IEC 60898-1 for Miniature Circuit Breakers (MCBs), IS/IEC 60947-2 for Molded Case Circuit Breakers (MCCBs), IS/IEC 61008-1 for Residual Current Circuit Breakers (RCCBs), and IS/IEC 61009-1 for Residual Current Operated Circuit Breakers with Overcurrent Protection (RCBOs). These standards define stringent requirements related to breaking capacity, tripping characteristics, thermal performance, dielectric strength, endurance, and safety under fault conditions. Additionally, IS 732 (Code of Practice for Electrical Wiring Installations) and provisions under the National Electrical Code (NEC) further mandate the use of certified protection devices to ensure safe installation practices.

To strengthen compliance, the government has introduced Quality Control Orders (QCOs) for various electrical equipment categories, making BIS certification mandatory for manufacturing, import, and sale in India. These measures aim to eliminate substandard products from the market and ensure uniform quality and safety standards across applications, including emerging areas such as EV charging infrastructure and renewable energy systems.



Despite these regulatory frameworks, enforcement challenges persist due to the fragmented nature of the market and the widespread presence of unorganized players. Counterfeit products often closely resemble branded devices but fail to meet the required IS/IEC standards, making it difficult for end users to differentiate between genuine and fake products. This not only compromises safety but also creates unfair competition for organized manufacturers who invest in compliance, testing, and certification. Moreover, the availability of low-cost, non-compliant alternatives exerts pricing pressure, particularly in cost-sensitive segments.

Another key challenge is the limited awareness among end users and small contractors regarding the importance of certified products and adherence to safety standards. Purchasing decisions are often driven by upfront cost rather than long-term reliability and safety compliance, sustaining demand for inferior products.

Integration Complexities with Legacy Systems

Legacy electrical systems across industrial facilities, commercial buildings, and older residential developments were primarily designed for conventional power distribution, with limited scope for digital integration, real-time monitoring, or automation. As the country transitions toward smart grids, digital substations, and connected electrical ecosystems, the gap between existing infrastructure and modern requirements is becoming increasingly evident.

Government-led initiatives are accelerating this transition by promoting interoperability, standardization, and intelligent energy management. For instance, recent EV charging infrastructure guidelines define requirements related to interoperability, communication protocols, load management, and safety standards, encouraging the development of connected and digitally managed electrical networks. Similarly, the push toward smart metering, grid modernization, and renewable energy integration is driving the adoption of advanced protection systems that can communicate, monitor, and respond in real time.

However, integrating modern IoT-enabled protection devices such as smart circuit breakers, digital relays, and sensor-based monitoring systems with legacy switchgear infrastructure remains a significant challenge. Older systems typically lack compatibility with communication protocols (such as Modbus, IEC 61850), data acquisition capabilities, and automation features required for smart operations. As a result, deploying advanced protection solutions often requires extensive retrofitting, additional interface modules, or complete system replacement, increasing both capital expenditure and implementation complexity.

This challenge is particularly pronounced in brownfield projects, where upgrading existing installations must be carried out without disrupting ongoing operations. The need for system redesign, downtime management, and skilled technical expertise further adds to project timelines and costs. Additionally, inconsistencies in legacy system configurations and lack of standardization across installations make integration more complex and less scalable.



High Upfront Cost of Smart Protection Devices

The adoption of advanced LV protection devices such as smart circuit breakers, digital relays, and sensor-integrated systems is often constrained by their relatively high initial cost compared to conventional protection solutions. These devices incorporate advanced features such as real-time monitoring, remote connectivity, predictive maintenance, and integration with building management or industrial automation systems, which significantly increase their upfront pricing. While they offer long-term benefits in terms of reduced downtime, improved energy efficiency, and enhanced safety, the higher capital investment required at the installation stage remains a key barrier, particularly in cost-sensitive markets.

This challenge is especially evident in emerging and high-growth segments such as EV charging infrastructure and smart electrical systems. To address this, the government has introduced financial support mechanisms, including INR 912.5 crore under the FAME-II scheme and INR 2,000 crore under PM E-DRIVE, aimed at accelerating EV ecosystem development and reducing infrastructure-related cost barriers. These initiatives are helping offset a portion of the initial investment required for deploying advanced electrical systems, including protection devices.

However, despite such support, adoption remains limited among small and medium enterprises (SMEs), residential users, and small contractors, where purchasing decisions are heavily influenced by upfront cost considerations rather than lifecycle benefits. In many cases, end users continue to prioritize affordability over advanced functionality, leading to a preference for traditional, lower-cost protection devices. This trend is further reinforced in price-sensitive regions and smaller projects, where budget constraints restrict the use of high-end solutions.

Additionally, the return on investment (ROI) for smart protection devices is often realized over a longer period through operational savings and reduced maintenance costs, which may not be immediately attractive to all users. The lack of awareness regarding these long-term benefits also contributes to slower adoption.

Supply Chain, Import Dependence & Skill Gaps

In addition to core challenges, the LV protection devices market in India is also impacted by supply chain constraints, import dependence for advanced components, and gaps in skilled workforce availability. A significant portion of high-end components such as semiconductor-based control modules, sensing elements, and communication-enabled devices are still imported, exposing manufacturers to global supply chain disruptions, currency fluctuations, and geopolitical risks. To address this, the Government of India has been promoting domestic manufacturing through initiatives such as the Production Linked Incentive (PLI) scheme, particularly in sectors like electronics, EVs, and advanced electrical equipment. While these efforts are expected to strengthen local capabilities over time, dependence on imports for critical technologies remains a short- to medium-term challenge.



At the same time, the rapid expansion of infrastructure especially in emerging segments like EV charging has significantly increased the complexity and scale of electrical systems. As per recent government data, over 29,151 public EV charging stations²¹ have already been deployed across the country, requiring robust, safe, and well-integrated electrical networks. This rapid scale-up is creating strong demand for skilled professionals capable of installing, integrating, and maintaining advanced LV protection systems. However, there is a noticeable shortage of trained technicians and engineers with expertise in modern, digital, and sensor-based electrical systems, particularly in semi-urban and rural regions.

Additionally, the industry is exposed to volatility in raw material prices, especially for key inputs such as copper, aluminium, and polymers, which directly impact production costs and pricing strategies. Supply chain disruptions whether due to global market fluctuations or logistical constraints further add to uncertainty for manufacturers. Moreover, inconsistent enforcement of safety standards across regions allows substandard products to persist in certain markets, affecting overall industry quality and competitiveness.

Growth Forecast

²¹ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2204635®=3&lang=I>



Competitive Landscape

The Indian LV switchgear and protection devices market is highly competitive, characterized by a mix of organized and unorganized players. The organized sector is gradually gaining market share, driven by increasing awareness of electrical safety, compliance with standards, technological advancements, and strong brand positioning. This segment includes key players such as ABB India, Siemens, Schneider Electric, Larsen & Toubro, Havells, Legrand, and CG Power, while the unorganized sector continues to cater to price-sensitive segments with low-cost offerings.

The industry exhibits moderate to high entry barriers in the organized segment due to the need for compliance with BIS and IS/IEC standards, along with significant investments in manufacturing, product testing, and distribution infrastructure. However, entry barriers remain relatively low in the unorganized segment, enabling smaller players to compete primarily on price. Switching costs are moderate while customers can easily switch brands in residential applications, switching becomes more complex in industrial and infrastructure projects due to integration requirements, compatibility issues, and operational risks, leading to higher customer retention for established players.

The bargaining power of customers is moderate to high, particularly in price-sensitive segments, whereas in industrial applications, quality and reliability take precedence. Supplier power is moderate, influenced by volatility in raw materials such as copper, aluminium, and polymers, as well as dependence on imported components for advanced devices.

Nature of Industry

The LV switchgear market in India is a dynamic and steadily growing segment, driven by demand from power distribution, infrastructure, construction, industrial automation, and emerging sectors such as renewable energy and EV infrastructure. The industry is moderately fragmented, with large organized players dominating the high-quality, branded segment, while a significant unorganized sector caters to low-end applications. Price competition is a key characteristic, particularly in mass-market segments, although there is a growing shift toward quality- and safety-driven demand. Increasing awareness of electrical hazards and fire safety is driving the adoption of certified and high-performance products, including advanced protection devices and smart switchgear solutions.

Analysis of Factors Shaping Competition

- **Market Structure and Concentration:** The industry is moderately fragmented, with a mix of global leaders and domestic manufacturers. Organized players dominate the premium and infrastructure segments, while unorganized players compete in low-cost segments, creating pricing pressure.



- **Cost of Raw Materials:** The industry is dependent on raw materials such as copper, aluminium, plastics, and electronic components, which are subject to price volatility. This directly impacts production costs and profit margins, especially for manufacturers with limited pricing power.
- **Pricing Pressure:** While organized players focus on quality, reliability, and compliance, they continue to face pricing pressure due to fluctuating input costs and competition from low-cost unorganized players, particularly in residential and small commercial segments.
- **Product Differentiation and Innovation:** Competition in the organized segment is driven by product innovation, technological advancement, and compliance with safety standards. Companies offering smart, connected, and energy-efficient switchgear, along with advanced protection features such as arc-flash mitigation and digital monitoring, gain a competitive advantage.
- **Brand Strength and Reputation:** Established players benefit from strong brand recognition, trust, and proven product performance, especially in industrial and infrastructure projects where reliability and safety are critical decision factors.
- **Distribution Networks:** A well-established distribution network across urban and rural markets is a key competitive advantage. Companies with strong dealer, retailer, and project-based distribution channels are better positioned to capture market share and ensure product availability across regions.

Key players

Company Name	Profile
Schneider Electric India Pvt. Ltd.	Schneider Electric India Pvt. Ltd., established in 1995, is the Indian subsidiary of Schneider Electric SE (founded in 1836) with its global headquarters in Rueil-Malmaison and India headquarters in Gurugram. The company operates in energy management and industrial automation, serving residential, commercial, industrial, infrastructure, and data centre segments. It has a widespread manufacturing presence in India with facilities in Nashik, Hyderabad, Ahmednagar, Bengaluru, and Vadodara, supporting both domestic and export markets. Its LV switchgear portfolio includes products such as MCBs, MCCBs, RCDs, ACBs, SPDs, contactors, relays, and distribution boards, along with smart and connected protection solutions. The company also offers integrated solutions including energy management systems, industrial automation, smart building technologies, EV charging



	infrastructure, and data center power systems, with a focus on digitalization, sustainability, and connected energy solutions.
ABB India Ltd.	ABB India Ltd., incorporated in 1949, is the Indian arm of ABB, a global technology company in electrification and automation with headquarters in Zurich, while its India headquarters is located in Bengaluru. The company operates across key business segments including Electrification, Motion, Process Automation, and Robotics & Discrete Automation, offering products and system solutions to utilities, industries, OEMs, and infrastructure sectors. Its LV switchgear and power distribution portfolio includes circuit breakers, switchgear systems, distribution solutions, control products, and digital protection systems, along with EV charging infrastructure and automation solutions. ABB India has a strong manufacturing presence with facilities such as its distribution solutions plant in Nashik and multiple manufacturing locations and campuses across the country, supported by a large installed base and domestic supply chain network. The company has been manufacturing in India for several decades and operates as part of ABB's global network, which focuses on digitalization, automation, and energy-efficient solutions, supporting sectors such as power, industry, transport, and infrastructure.
Havells India Limited	Havells India Limited, established in 1958 and headquartered in Noida, is a fast-moving electrical goods (FMEG) company with a global presence. The company operates across multiple segments including switchgear, cables and wires, lighting, electrical consumer durables, and power distribution equipment, offering products such as circuit protection devices, distribution boards, surge protection devices, relays, cables, motors, fans, modular switches, and home appliances. It follows a "Make in India" approach supported by a strong manufacturing base with multiple production facilities in India, producing a significant portion of its portfolio in-house. The company serves residential, commercial, and industrial applications and has



	an extensive distribution network and international presence, supplying products across various global markets.
Legrand India	Legrand India, established in 1996 and headquartered in Mumbai, is part of the Legrand Group and operates in the electrical and digital building infrastructure segment, serving residential, commercial, and industrial applications. The company has a strong presence in India with over 5,000 employees, more than 35 offices, around 870 distribution partners, and a wide retail network. It has 7 manufacturing units and 3 R&D centres in India, supporting localized production and innovation, although a consolidated manufacturing capacity figure is not publicly disclosed. Its product portfolio includes LV switchgear and protection devices such as MCBs, MCCBs, RCCBs, ACBs, SPDs, isolators, contactors, relays, and distribution boards, along with switches, cable management systems, energy management solutions, home automation, and digital infrastructure products, catering to a wide range of electrical and smart building applications.



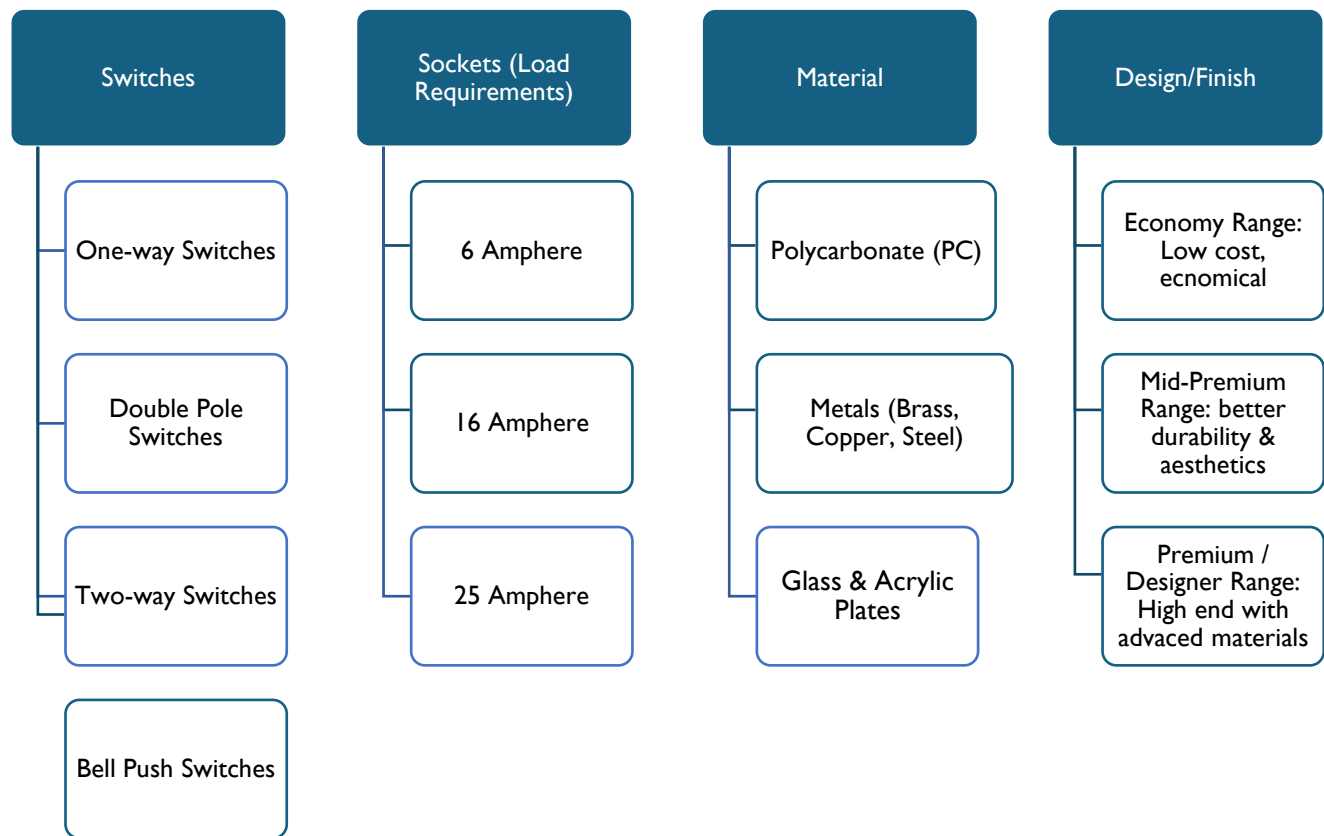
Switches & Sockets

Overview

Switches and sockets are essential components used to control and access electricity across residential, commercial, and industrial applications. They enable safe operation of lighting and electrical appliances, making them a key part of everyday infrastructure.

The industry has evolved significantly, with products becoming safer, more efficient, and technologically advanced. Growth is driven by rising construction activity, industrial expansion, and increasing use of electrical appliances. At the same time, automation in manufacturing and stronger government focus on safety standards are supporting large-scale production and improving product quality, contributing to steady industry growth.

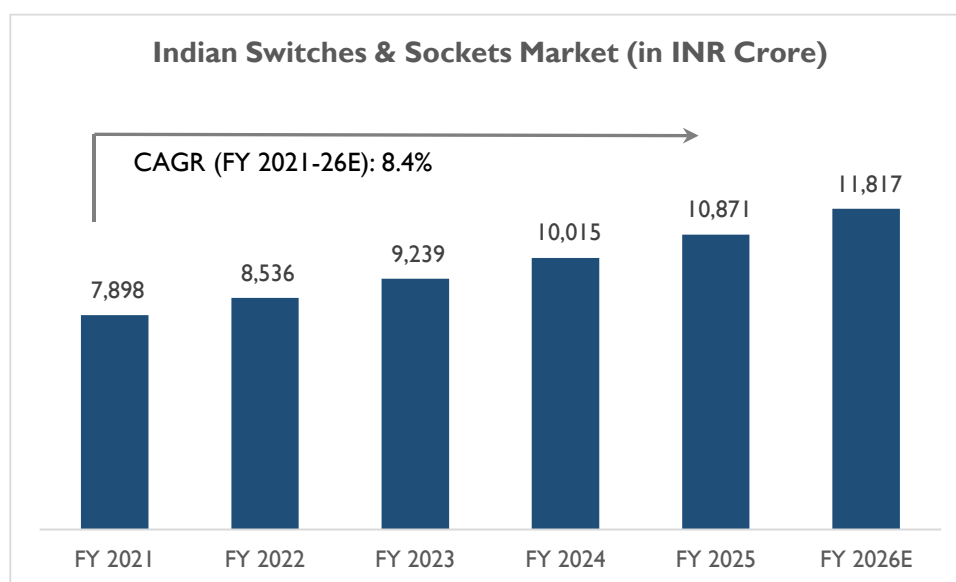
Key Types of Switches & Sockets



Indian Market Scenario

The switches and sockets market in India witnessed a strong recovery post the COVID-related slowdown and has been on a steady growth trajectory since FY2021, supported by revival in real estate, construction activity, and home renovations. During this period, consumer preference has increasingly shifted toward modular and smart electrical solutions, with stronger focus on safety, design, and convenience over purely cost considerations.

By FY 2026, the Indian market for switches and sockets is estimated to be worth INR 11,817 Crore, increasing by a CAGR of 8.4% between FY 2021 and 2026. Growth has been driven by rising adoption of modular and smart fittings across residential and commercial segments, along with rapid urbanization in Tier I, II, and III cities and increasing preference for branded and premium products. Continued expansion in infrastructure and commercial real estate is further supporting demand.



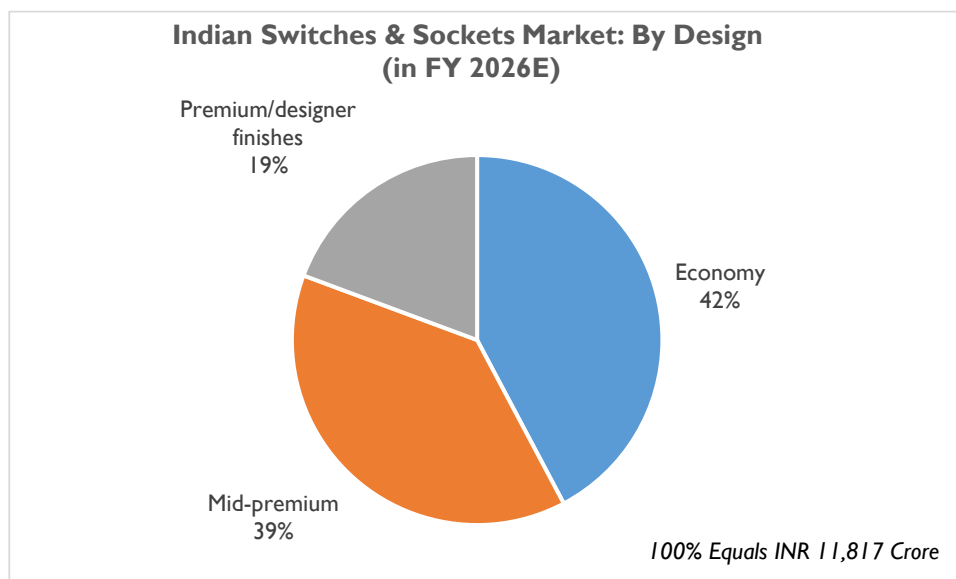
Source: D&B Research and Estimates



Market Segmentation: By Design and By Material

By Design

The switches and sockets market is segmented into economy, mid-premium, and premium categories, reflecting a clear shift in consumer preferences from cost-led to value-led products. The economy segment remains dominant driven by demand from affordable housing and rural electrification. However, it is growing at a modest pace, indicating maturity and strong price sensitivity. Going forward, tighter regulatory compliance and quality standards are expected to reduce the presence of unorganized players, limiting growth despite continued demand.



Source: D&B Research Estimates

The mid-premium segment has emerged as the key growth driver supported by real estate recovery, rising urbanization, and increasing preference for modular, reliable, and aesthetically appealing products. This segment is expected to see the fastest expansion, driven by a shift toward branded products and growing awareness around safety and quality.

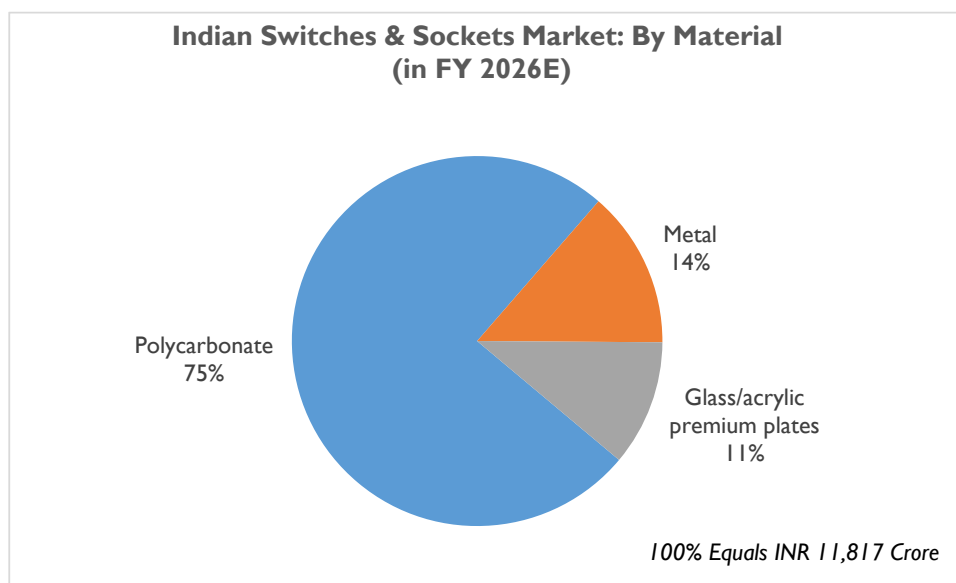
The premium/designer segment is the fastest-growing, fueled by rising disposable incomes, urban lifestyle upgrades, and demand for smart and technologically advanced solutions. Growth is further supported by increasing adoption in high-end residential and commercial projects, with innovations such as smart controls, touch-based systems, and integrated charging solutions. However, the segment remains relatively niche and sensitive to raw material and import cost volatility.



By Material

The switches and sockets market by material is dominated by **polycarbonate**, which accounts for nearly 75% due to its strong insulation, durability, cost-effectiveness, and wide availability. Demand is largely driven by economical housing and mass-market applications.

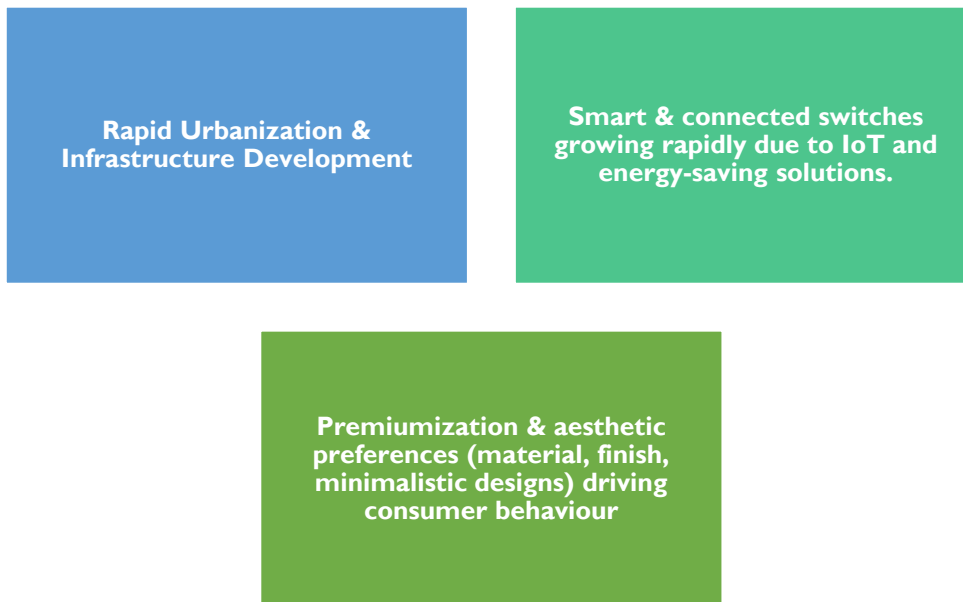
The **metal segment** (14% share) has witnessed strong growth driven by demand for high-strength, heat-resistant, and premium-grade fittings in commercial and high-end residential projects. Meanwhile, **glass and acrylic premium plates** are the fastest-growing segments supported by increasing demand for aesthetic, modular, and smart solutions in urban and luxury housing. Their adoption is further driven by rising preference for modern interiors and smart switch technologies.



Source: D&B Research Estimates



Demand Scenario



Rapid urbanization and infrastructure development

The growth of urban areas and infrastructure has been far and wide. Compounded with population growth the need to cater to grow industries and dependent sectors, the real estate industry is expanding rapidly. Government Initiatives such as Pradhan Mantri Awas Yojana aiming at rural as well as Urban Areas development, is creating demand for essential home electrical furnishings. In addition to these, the private real estate developers are attracting the middle and the upper middle-income households with new projects providing attractive prices and affordable financing options.

Infrastructure development has been linked to the industrial and thus economic development. Better the infrastructure the faster the development of industrial activities, through enabling efficient supply chain. Also, initiatives such as Smart Cities Mission by the Government of India strengthen the key cities and the prospective cities which could promote better economic development.

Smart & connected switches growing rapidly due to IoT and energy-saving solutions.

With rising disposable incomes in households, the inclination is more towards the preference for premium and technologically advanced electrical fittings. Households are now adapting and increasingly looking for a smart and energy saving technologies enabled sockets and switches while the elite and high-end residences, prefer smarter and connected fittings which also symbolize luxury and convenience of controlling appliances virtually.

In addition, these smart connected switches and sockets when part of the smart Home hub or central smart control system, indicates the energy efficiency and automatically control the usage of electricity to optimize the performance of the connected appliance.



Premiumization & aesthetic preferences (material, finish, minimalistic designs) driving consumer behaviour

Advanced manufacturing technologies and use of newer materials for manufacturing sockets and switches have made them more attractive and preferable over the plastic or Polycarbonate switches. The brands associated with premium priced switches often attract the consumers with the advantages of being attractive, sleek and modest at the same time. Even the smart and connected systems are made available in various designs and finishes to suit décor of every corner of the house, thus allowing consumers to balance aesthetic looks and functionality.

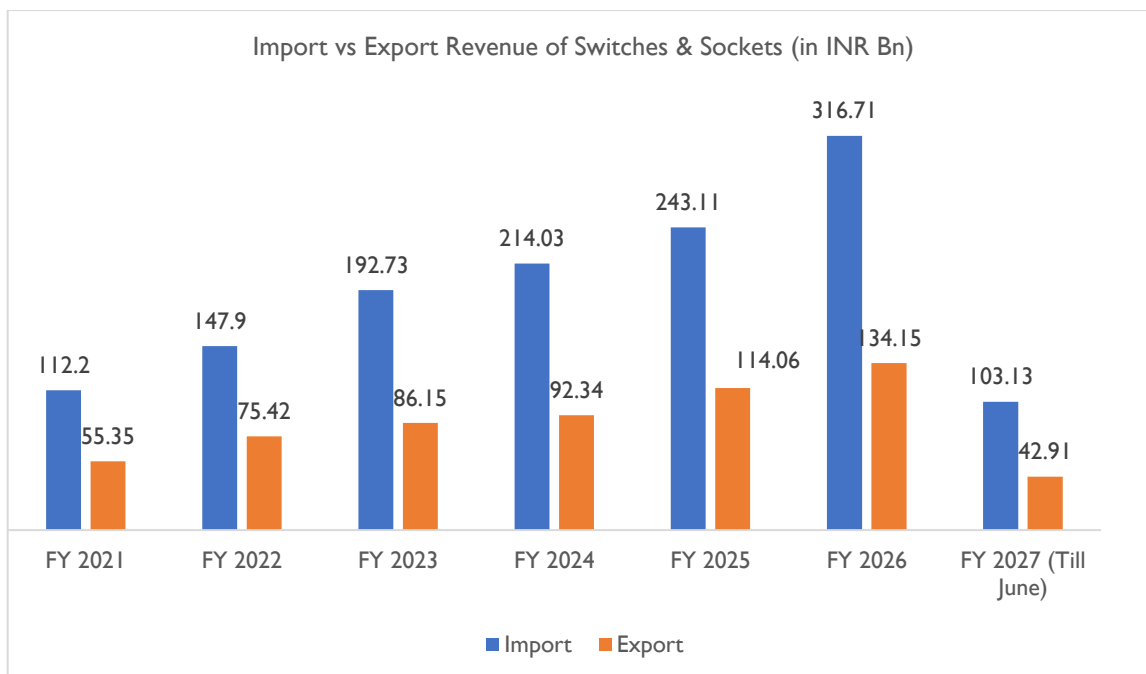
Import & Export Scenario²²

The import–export trend of switches and sockets indicates that India remains a net importer, with both imports and exports recording strong growth. Import value increased significantly from INR 112.20 Bn in FY2021 to INR 243.11 Bn in FY2025, and further to INR 316.71 Bn in FY2026, registering a CAGR of approximately 23.1% during FY2021–FY2026. The strong increase reflects robust domestic demand from real estate, infrastructure and industrial sectors, along with rising preference for premium and specialized products. Imports stood at INR 103.13 Bn in FY2027 (till June).

Exports also recorded steady growth, increasing from INR 55.35 Bn in FY2021 to INR 114.06 Bn in FY2025, before reaching INR 134.15 Bn in FY2026, representing a CAGR of approximately 19.4% during FY2021–FY2026. Export growth is supported by established domestic manufacturers, expanding production capabilities and increasing access to international markets. Exports stood at INR 42.91 Bn in FY2027 (till June). Overall, the widening gap between imports and exports highlights continued dependence on imports, particularly for premium and specialized switches and sockets, despite the steady growth in domestic manufacturing and exports.

²² HS Code: 8536



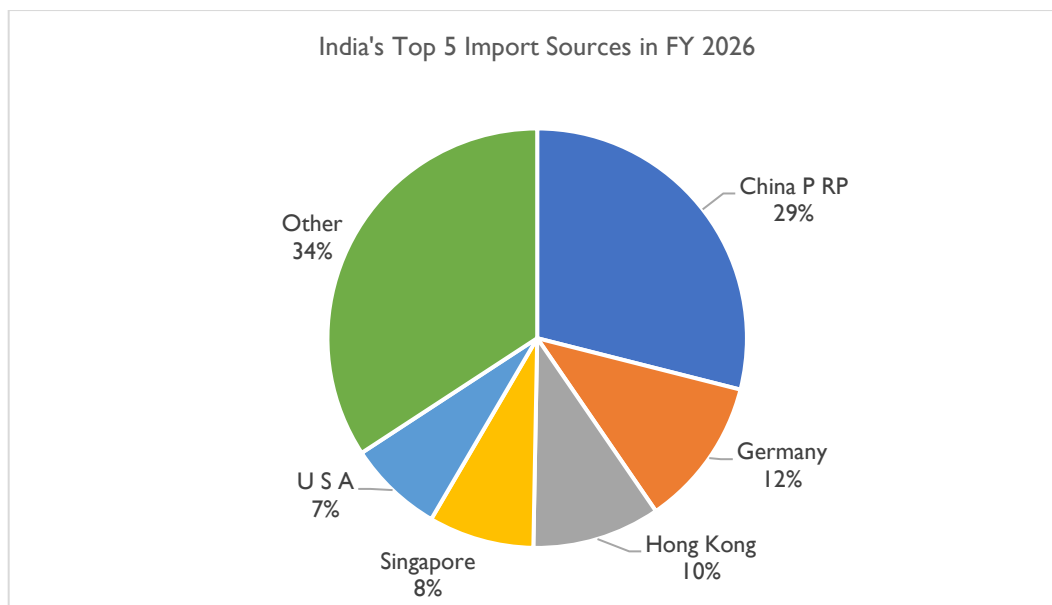


Source: Directorate General of Foreign Trade

Major Trading Partners

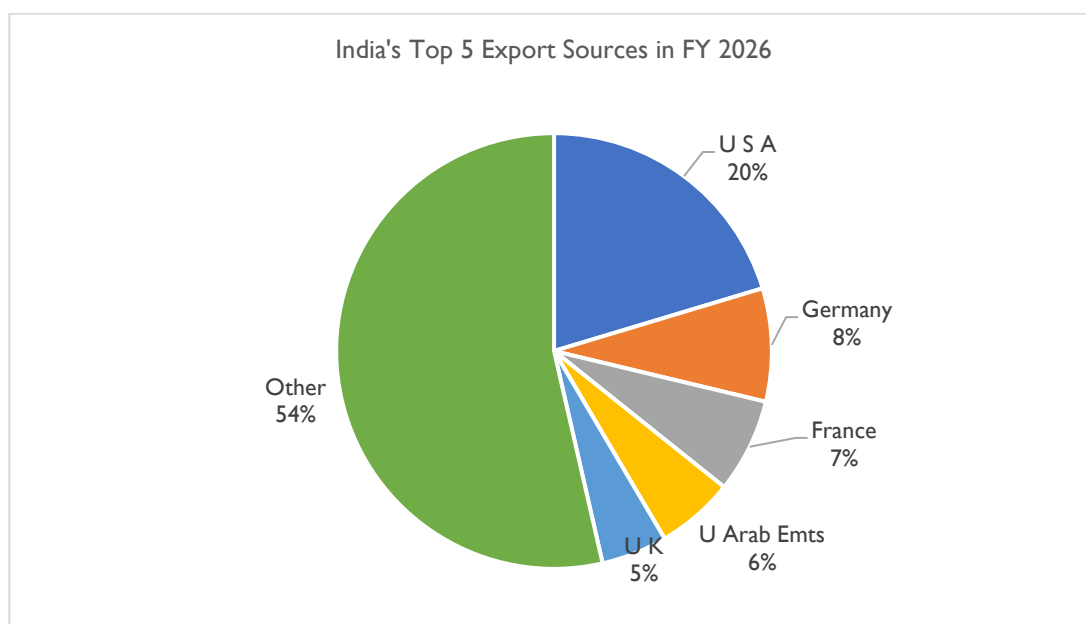
China, Germany, Hong Kong, Singapore, and the United States emerged as India's key import sources for switches and sockets during FY2026. China accounted for the largest share (29%), driven by large-scale supply of cost-effective, mass-produced switches, while Germany (12%) catered primarily to high-quality and industrial-grade products. Other key suppliers included Hong Kong (10%), Singapore (8%), and the U.S.A (7%), reflecting a mix of trading hubs and advanced manufacturing markets. The "Others" category accounted for 34%, indicating a relatively diversified import base beyond the major suppliers.





Source: Directorate General of Foreign Trade (DGFT)

On the export side, India benefits from the presence of established global manufacturers with strong domestic production capabilities. The United States is the largest export destination (20%), followed by Germany (8%), France (7%), UAE (6%), and the UK (5%). Together, these top markets account for 46% of total exports, highlighting India's growing presence across both developed and emerging international markets. The "Others" category accounts for 54%, indicating a relatively diversified export base beyond the leading destinations.



Source: Directorate General of Foreign Trade (DGFT)



Regulatory Landscape

The switches and sockets industry in India operates under a multi-layered regulatory framework focused on product safety, quality standardization, and trade compliance. The ecosystem is primarily governed by the Bureau of Indian Standards (BIS) under the BIS Act, 2016, with enforcement supported by the Department for Promotion of Industry and Internal Trade (DPIIT), Directorate General of Foreign Trade (DGFT), and Department of Consumer Affairs. Compliance is critical, as market entry depends not only on manufacturing capability but also on certification, testing, and regulatory approvals.

The switches and sockets industry in India is governed by the BIS Act, 2016 and BIS Conformity Assessment Regulations, 2018, which form the foundation for product standardization and certification (ISI mark). Compliance becomes mandatory under Quality Control Orders (QCOs), with certification linked to specific products and manufacturing units, creating strong entry barriers.

A key regulation is the Electrical Accessories (Quality Control) Order, 2023, which mandates BIS certification for products such as switch-socket outlets (IS 15787), ensuring safety and formalization across domestic and imported products.

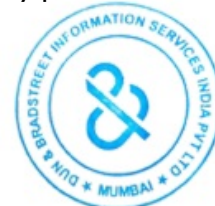
Key Indian Standards include:

- IS 3854:2023 – Household switches
- IS 1293:2019 – Plugs & sockets
- IS 15787:2008 – Switch-socket combinations
- IS/IEC 60669 series – Electronic/smart switches

Safety and compliance are integral, with mandatory ISI marking and adherence to Legal Metrology Rules, 2011 for packaging and labelling. Cross-border trade is regulated under the Foreign Trade Policy (FTP) 2023, with IEC registration required and strict BIS compliance for imports.

Key Market Trends

The switches and sockets market by material highlights a clear divergence between volume-led and value-led growth segments. Polycarbonate continues to dominate, driven by strong demand from Tier II and III urbanization, affordable housing initiatives, and rural electrification. Its cost-effectiveness and suitability for mass applications keep it as the largest segment, expected to grow steadily (~7.2% CAGR) and retain a dominant share (~68–69%) over the forecast period. Growth is largely volume-driven, supported by price-sensitive demand and infrastructure expansion.



In contrast, metal switches represent a high-growth, value-driven segment, expected to grow at ~15% CAGR. Demand is driven by increasing adoption in commercial, industrial, and premium residential applications, where durability and aesthetics are prioritized. Growth is also supported by rising preference for modular designs among mid- and high-income consumers, although sensitivity to metal price volatility remains a key factor.

The glass and acrylic segment is emerging as a fast-growing premium category (~13–14% CAGR), fueled by increasing adoption of smart home systems and demand for designer, aesthetically appealing products. Growth is closely linked to urban lifestyle upgrades, luxury housing, and IoT-enabled switches, reflecting a broader shift toward premiumization and smart technologies.

Threats & Challenges

The switches and sockets industry in India, despite steady growth, faces several structural and operational challenges that could moderate its growth momentum. Addressing these issues through regulatory enforcement and market formalization is critical for sustained expansion.

Large Unorganized Sector

A significant portion of the market is dominated by unorganized players, including small-scale manufacturers and local assemblers, who offer low-cost products with limited adherence to safety and quality standards. These products are widely used in price-sensitive segments such as rural housing, temporary installations, and renovation projects. However, they pose safety risks and create pricing pressure for organized players. Increasing implementation of GST, BIS certification, and e-commerce transparency is gradually formalizing this segment.

Price Competition & Quality Concerns

The industry remains highly price competitive, particularly in rural and semi-urban markets where affordability often outweighs quality considerations. This leads to continued demand for lower-quality products, raising risks related to electrical safety and durability. In contrast, urban markets are increasingly prioritizing safety and reliability, supported by rising incomes. Mandated BIS standards are expected to improve consistency in product quality over time.

Other Key Challenges

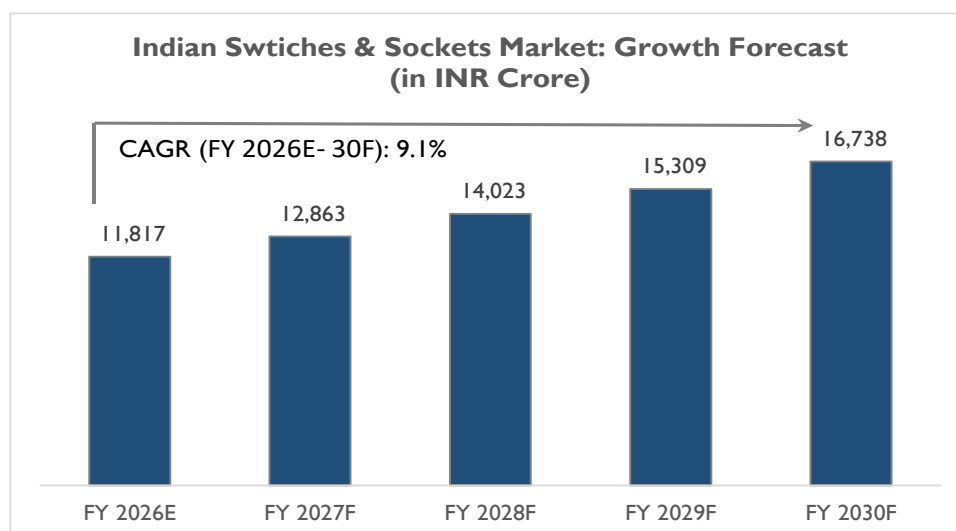
- Regulatory non-compliance by smaller players leading to inconsistent product quality
- Raw material price volatility (copper, brass, polycarbonate, glass, etc.) impacting margins and pricing
- Presence of counterfeit products affecting brand credibility and safety
- Dependence on imports, especially for premium and specialized components



Overall, while demand fundamentals remain strong, managing quality, cost pressures, and market fragmentation remains critical for long-term industry growth.

Growth Forecast

Going ahead, the Indian market for switches & sockets is expected to expand by a CAGR of nearly 9.1% between FY 2026 and 2030, to reach approximately INR 16,738 crore by the end of this decade.



Source: Dun & Bradstreet Research and Estimates

Competitive Landscape

The Indian switches and sockets industry is characterized by the presence of both organized and unorganized players, catering to diverse consumer segments based on pricing, application, and geography. Organized players primarily compete on brand strength, quality, and technological innovation, targeting premium residential and commercial projects. In contrast, unorganized players focus on cost-sensitive rural and semi-urban markets, offering lower-priced products with limited emphasis on quality and compliance.

Competition in the industry is largely driven by pricing, particularly in the economy segment, where purchasing decisions are often influenced by contractors and electricians. At the same time, quality and safety have emerged as key differentiators, with organized players emphasizing BIS compliance and certified products, while unorganized players continue to compete through lower costs. Technological advancements further shape competition, as leading brands introduce smart, energy-efficient, and automated solutions that appeal to urban and premium segments.

The industry also presents notable entry barriers, driven by the dominance of established players such as Havells, and Legrand, which benefit from strong brand recall and extensive product portfolios. A well-established distribution network—spanning dealers, electricians, and contractors—is critical for market penetration, making



it difficult for new entrants to scale quickly. Additionally, high capital requirements for manufacturing, automation, and quality testing, along with the need to achieve economies of scale, create further challenges. Intense price competition, especially in government and economy segments, adds pressure on margins, requiring new entrants to either adopt cost leadership or focus on differentiation strategies.

Overall, the switches and sockets industry in India remains highly competitive, with success dependent on achieving an optimal balance between cost efficiency, quality compliance, strong distribution reach, and continuous technological innovation.

Key Players

Key Player Profile	
Panasonic Life Solutions India Pvt Ltd.	Initially known as Anchor Electricals, the switches and sockets company offers products across various product ranges names with different price ranges widely catering to residential and industrial consumers. It was acquired by Panasonic in the year 2007 by holding control of 80% of stake in the company. The company later was rebranded as Panasonic Life Solutions India Pvt Ltd and also has created a brand Panasonic in switches and sockets offering high end modular switches and sockets. Along with the switches & sockets, the company offers other electrical products such as wires, cables, switchgear and protection devices, PVC Conduits and Accessories etc. The company is headquartered in Gurugram, Haryana. Industrial Products: • Professional Lightings • Solar Products – Module, EPC, O&M, Streetlights • Conductor Bars Consumer Products : • Switches & Sockets • Wires, Cables & Tapes • Switchgear & Protection Devices • PVC Conduits & Accessories • Smart Homes & Buildings • Fans & Ventilation Products • Home Appliances



	• LED Lighting & Solar Products • EV Charger & Accessories
Legrand India	An established player based and headquartered in Mumbai since 1996 now caters to electrical solutions of Residential, Industrial, Hospitality and 27Is. It owns 7 manufacturing facilities and 3 research & development centres across the country while employing more than 35000 employees. Its product offerings include advanced technologies such as smart homes connected through IoT. Consumer Products: • Switches & Accessories • Electrical Infrastructure – Distribution Boards, MCB, Isolators • Cable Management Systems Products for Professionals: • Switches & Accessories • Electrical Infrastructure • Cable Management Systems • IoT • Home Automation • Door Entry System • Lighting Management Systems • Digital Building Infrastructure • UX for Upscale Hotels
Havells India Limited	One of the well-established companies which manufactures and provides various electrical products and solutions, was incorporated in 1983. It is headquartered in New Delhi and operate in India and across the world in more than 70 countries. It owns and operates through 15 manufacturing plants across India and exports these products other than catering to the domestic market. It majorly operates through 6 brands namely Havells, Havells Studio, Lloyd, Havells Crabtree,



Standard Electricals and REO providing electrical solutions to Residential, Industrial and Commercial Sectors.

Product Categories:

- Fans
- LED Lighting
- Switches & Accessories
- Home Appliances
- Home Electricals
- Switchgears
- Solar & EV Products
- Smart Home Products & Solutions



Peer Profiling

Company Name	Overview
V-MARC India Limited	V-MARC India Limited was established in 2006 and is headquartered in Haridwar, Uttarakhand, with its Registered/Head Office at Sector-IIDC, SIDCUL, Haridwar, Uttarakhand – 249403. The company is engaged in the manufacturing of wires, cables and electrical products and operates manufacturing facilities in Haridwar, Uttarakhand. Its product portfolio includes building wires, submersible cables, light-duty cables, LT/HT power and control cables, aerial bunched cables, MVCC cables and accessories, communication cables, solar DC cables and solar solutions, switchgears, switches and fans. The company's cables and wires cater to residential, commercial, industrial, infrastructure, power distribution, communication and solar applications. V-MARC has offices in Noida, Mumbai, Cochin and Chennai and supplies its products across multiple states in India.
Plaza Wires Limited	Plaza Wires Limited was incorporated in 2006 and has its registered office at Okhla Industrial Area, Phase-2, New Delhi. The company is engaged in the manufacturing and supply of wires and cables and other electrical products, with a focus on products conforming to national and international standards. Plaza operates a manufacturing unit in Baddi, Himachal Pradesh, and has 7+ branch offices and 100+ channel partners. Its product portfolio includes Plaza Cables, Action Cables, ceiling fans, wall fans, pedestal fans, exhaust fans, table fans, immersion heaters and irons, along with other electrical products. The company also has capabilities in solar energy solutions, including solar photovoltaic panels, inverters, batteries, water heating systems, solar lanterns, home-lighting and street-lighting systems. Plaza states that its manufacturing facilities follow quality-control and safety practices and are supported by a dedicated R&D unit for product and technology development.
Focus Lighting and Fixtures Limited	Focus Lighting and Fixtures Limited was incorporated in 2005 and is headquartered in Mumbai, Maharashtra, with its Registered and Corporate Office at Goregaon (East), Mumbai – 400063. The company is engaged in the manufacturing and trading of LED lights, fixtures and lighting solutions, with a focus on retail and architectural lighting. Its business operates across Retail Lighting, Home Lighting, Infrastructure Lighting and Railways. The company's product portfolio broadly includes spotlights, downlights, track lighting, wall washers, magnetic lighting systems, linear lighting systems, general lighting products and



outdoor and landscape lighting products. The company develops lighting products and solutions incorporating technologies including reflector technology, Human Centric Lighting, Smart Lighting Control and IoT-based technologies. Its lighting products cater to applications across retail, residential, commercial, hospitality, infrastructure, outdoor and landscape areas, and railway applications. The company has a manufacturing facility at New Ahmedabad Industrial Estate, Moraiya, Sanand, Gujarat.



Company Profile

Biocon Electric Limited was incorporated in **2019** and is engaged in the **manufacturing, processing, assembly, marketing and distribution of electrical and electronic products** under the **“BIOCON”** brand. Since incorporation, the company has expanded across electrical insulation, lighting, wiring, switching, electrical protection and power distribution categories. It operates **three principal production facilities located in Delhi, Ghaziabad (Uttar Pradesh) and Vasai (Maharashtra)**, supplemented by assembly, testing, packaging and ancillary operations at Vasai.

As of March 31, 2026, the company had **1,915 non-exclusive channel partners**, comprising **1,531 dealers and 384 distributors**, across **25 states and four union territories**. Its distribution infrastructure comprised **15 storage facilities and depots, four C&F partners and four Commission Stockist Agents (CSAs)**, and its channel ecosystem was supported by **more than 10,000 registered electricians**.

➤ Product Profile

- The Company has developed a portfolio of over **1,500 SKUs** across different specifications, sizes, configurations, and applications. Its product portfolio caters to **residential, commercial, industrial and infrastructure applications**.

Product Category	Products / Coverage
Lighting Solutions	LED and other lighting solutions, including general-purpose, recessed, road and street lighting luminaires, floodlights, LED control gear and self-ballasted LED lamps
Wires & Cables	PVC insulated wires and cables
Electrical Insulation	PVC electrical insulation tapes
Switchgear	MCBs, RCCBs and other switchgear products
Switches & Accessories	Electrical switches, sockets and related accessories
Other Electrical Appliances	Other electrical appliances and electrical products marketed under the BIOCON brand



➤ **Manufacturing Infrastructure**

The Company's manufacturing infrastructure includes automatic and manual tape slicing and tape end-cutting machines for PVC electrical insulation tapes; a PVC insulated wire and cable production line, and bunching and coiling equipment for wires and cables; chip mounting equipment, reflow ovens, automatic dip soldering equipment, soldering stations, ageing conveyors and LED testing equipment for lighting products; and product-specific moulds and tooling, thermal calibration test benches, endurance testing equipment, impulse high-voltage testers and circuit-trip testing equipment for switchgear products.

➤ **Regional Presence & Distribution Network**

The company has channel presence across 29 states and union territories. However, its distribution network is concentrated in South India.

Region	Dealers	Distributors	Total Channel Partners
South	1,377	50	1,427
East	0	133	133
West	77	34	111
North-East	57	46	103
Central	0	71	71
North	20	50	70
Total	1,531	384	1,915

➤ **Key Customer Segments**

The company primarily sells through dealers and distributors, which facilitate availability through downstream retail markets. It also directly caters to commercial and institutional customers. Its products serve residential, commercial, industrial and infrastructure applications.

The company is also seeking greater participation in project-led business involving contractors, project customers, government departments, public works authorities and other institutional customers. Certain products have been included in product lists of public works authorities in Goa and Uttar Pradesh, including LED lighting, wires and cables, switchgear, switches and sockets and other electrical products.



➤ **Key Strength**

- **Diversified, multi-category electrical product portfolio:** The Company offers over 1,500 SKUs across PVC electrical insulation tapes, lighting solutions, switches and accessories, MCBs, RCCBs and other switchgear products, wires and cables, other electrical appliances and other electrical products. The portfolio caters to residential, commercial, industrial and infrastructure applications
- **Multi-location manufacturing and operational capabilities:** The company operates three principal production facilities in Delhi, Ghaziabad and Vasai, with product-specific manufacturing, processing, assembly and testing capabilities across wires and cables, switchgear, lighting solutions and PVC electrical insulation tapes.
- **Distribution network across India:** As of March 31, 2026, the company had 1,915 non-exclusive channel partners, comprising 1,531 dealers and 384 distributors across 25 states and four union territories, supported by 15 storage facilities and depots, four C&F partners and four CSAs.
- **Product quality and compliance framework:** The company has 12 BIS registrations covering lighting and other electrical products, along with ISO 9001:2015 certification and a RoHS conformity certificate. Its quality-control processes include incoming inspection, in-process checks, functional and electrical testing, calibration and pre-dispatch verification.
- **Established channel relationships and electrician engagement:** As of March 31, 2026, the Company had 1,915 non-exclusive channel partners. Its channel ecosystem was also supported by more than 10,000 electricians registered through its electrician engagement application, Biocon E-Pay.
- **Management experience across key business functions:** The Promoters have experience across manufacturing and production, quality control, marketing and business development, customer relationships, dealer-network development and finance, supported by KMPs, senior management and a workforce of 490 personnel as of June 30, 2026.



Financial KPI

Particular	Unit	Biocon Electric Limited			V-MARC India Limited			Focus Lighting and Fixtures Limited			Plaza Wires Limited		
		As at end of the Fiscal			As at end of the Fiscal			As at end of the Fiscal			As at end of the Fiscal		
		Fiscal 2026	Fiscal 2025	Fiscal 2024	Fiscal 2026	Fiscal 2025	Fiscal 2024	Fiscal 2026	Fiscal 2025	Fiscal 2024	Fiscal 2026	Fiscal 2025	Fiscal 2024
Total Income	INR Lakhs	19,817.24	14,463.89	13,750.31	1,80,047.98	90,624.14	56,578.88	19,074.90	18,619.43	23,003.62	31,840.40	21,900.70	19,990.60
Revenue From Operations	INR Lakhs	19,673.37	14,262.42	13,645.24	1,79,730.97	90,487.46	56,472.92	18,777.97	18,333.12	22,381.10	31,805.80	21,817.50	19,880.50
Other Income	INR Lakhs	143.87	201.47	105.07	317.01	136.68	105.96	296.93	286.31	622.52	34.60	83.20	110.10
Growth in Revenue from Operations	in %	37.94%	4.52%	9.34%	98.63%	60.23%	128.37%	2.43%	-18.09%	32.76%	45.78%	9.74%	8.94%
EBITDA	INR Lakhs	2,563.82	2,180.45	1,953.28	20,400.08	9,850.27	6,682.05	1,888.49	2,903.57	5,268.09	1,602.50	872.10	1,101.30
EBITDA Margin	in %	12.94%	15.08%	14.21%	11.33%	10.87%	11.81%	9.90%	15.59%	22.90%	5.03%	3.98%	5.51%
PAT	INR Lakhs	1,414.05	1,150.00	1,099.86	10,005.17	3,609.46	2,685.30	507.07	1,516.16	3,871.95	730.30	288.40	367.70
PAT Margin	in %	7.19%	8.06%	8.06%	5.50%	3.99%	4.76%	2.70%	8.27%	17.30%	2.30%	1.32%	1.85%
Net Worth	INR Lakhs	6,591.59	5,168.13	4,008.91	28,949.98	18,944.81	10,652.06	14,634.10	14,020.06	12,867.13	12,957.20	12,220.60	11,951.70
Cash Flow from Operating Activities	INR Lakhs	998.66	-526.45	-1,012.28	10,914.88	2,252.71	5,717.80	2,585.85	3,244.96	616.23	416.90	1,095.80	17,279.80
Cash Flow from Investing Activities	INR Lakhs	-3.25	-133.49	-185.1	-9666.31	-6101.4	-6906.86	-1958.52	-2543.73	-2022.44	-795.7	-2157.8	-318.4
Cash Flow from Financing Activities	INR Lakhs	-1009.53	286.91	1138.73	-519.13	3975.05	1207.24	-232.84	-390.22	928.27	379.5	-1903	6005.7
Debt to Equity Ratio	in Times	1.11	1.47	1.64	0.74	0.92	1.32	0.13	0.12	0.10	0.25	0.21	0.35
Return on Equity	in %	24.05%	25.06%	31.82%	41.78%	24.39%	28.84%	3.54%	11.28%	35.42%	5.80%	2.39%	4.26%
Return On Capital Employed	in %	12.19%	11.41%	13.65%	35.64%	22.04%	23.41%	5.46%	13.32%	32.45%	8.01%	4.61%	5.92%
Return on Assets	in %	8.73%	8.03%	9.31%	4.32%	4.92%	0.83%	7.29%	19.76%	2.83%	1.67%	2.19%	2.58%
Interest Coverage Ratio	in Times	3.49	3.17	3.40	3.95	2.62	2.65	6.63	20.98	37.81	4.23	2.34	2.21

Fixed Asset Turnover Ratio	in Times	31.69	21.76	23.62	10.78	7.67	7.41	5.14	6.63	12.77	6.18	5.86	8.21
Working Capital Days	in Days	112.14	126.51	90.54	30.41	35.67	27.26	157.20	174.84	154.30	88.39	127.20	173.33
Net Asset Value per Share	in INR	43.94	34.45	26.73	118.55	77.58	46.75	21.77	21.02	19.51	29.62	27.93	27.32
Trade Receivable Days	in Days	97.82	100.85	86.28	71.53	86.38	64.62	123.55	154.45	78.46	79.23	101.97	102.71
Inventory Days	in Days	166.48	213.94	176.68	41.17	53.51	68.02	97.40	90.72	66.91	45.57	59.01	58.27
Trade Payable Days	in Days	49.11	58.09	54.80	74.70	90.37	85.09	87.17	97.01	69.42	14.74	16.16	18.60

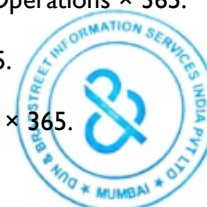
Note: We used consolidated financial statements.

The financial KPIs for Biocon have been provided by the Company. The financial KPIs for the peer companies have been computed by us using the same formulae,



Formulas Used

1. Total Income means the total income as appearing in the Audited Financial Statements.
2. Revenue from Operations means the revenue from operations as appearing in the Audited Statement of Profit and Loss for the relevant year/period.
3. Other Income means the other income as appearing in the Audited Financial Statements.
4. Growth in Revenue from Operations means $(\text{Current Year Revenue from Operations} - \text{Previous Year Revenue from Operations}) / \text{Previous Year Revenue from Operations} \times 100$.
5. EBITDA is calculated as Profit Before Tax for the year/period, plus finance costs and depreciation and amortisation expenses.
6. EBITDA Margin means $\text{EBITDA} / \text{Total income} \times 100$.
7. Profit After Tax (PAT) refers to Restated Profit/(Loss) for the year/period from Continuing Operations as appearing in the Audited Financial Information.
8. PAT Margin means $\text{Profit After Tax} / \text{Revenue from Operations} \times 100$.
9. Net Worth means Total Equity as appearing in the Audited Financial Statements.
10. Cash Flow from Operating Activities means the cash flow from operating activities as appearing in the Audited Cash Flow Statement.
11. Cash Flow from Investing Activities means the cash flow from investing activities as appearing in the Audited Cash Flow Statement.
12. Cash Flow from Financing Activities means the cash flow from financing activities as appearing in the Audited Cash Flow Statement.
13. Debt to Equity Ratio is calculated as Total Borrowings divided by Shareholders' Equity as at the end of the year/period.
14. ROE is calculated as PAT divided by average Total Equity, multiplied by 100. Average Total Equity is the simple average of Total Equity at the beginning and end of the year/period.
15. ROCE is calculated as EBIT divided by Capital Employed, multiplied by 100. Capital Employed is calculated as Total Equity plus Non-current Borrowings, plus Current Borrowings, plus Deferred Tax Liabilities, less Intangible Assets.
16. ROA is calculated as PAT divided by average Total Assets, multiplied by 100. Average Total Assets is the simple average of Total Assets at the beginning and end of the year/period.
17. Interest Coverage Ratio is calculated as EBIT divided by Finance Costs, where EBIT is calculated as Restated Profit Before Tax plus Finance Costs.
18. Fixed Asset Turnover Ratio is calculated as $\text{Revenue from Operations} / \text{Average Net Fixed Assets}$. Net fixed assets comprise property, plant and equipment, other intangible assets and capital work-in-progress.
19. Net Asset Value per Share is calculated as $\text{Net Worth} / \text{Total number of Equity Shares outstanding}$.
20. Working Capital Days is calculated as $\text{Working Capital} / \text{Revenue from Operations} \times 365$. Working capital is total current assets less total current liabilities.
21. Trade Receivable Days is calculated as $\text{Average Trade Receivables} / \text{Revenue from Operations} \times 365$.
22. Inventory Days is calculated as $\text{Average Inventory} / \text{Revenue from Operations} \times 365$.
23. Trade Payable Days is calculated as $\text{Average Trade Payables} / \text{Purchases \& Expenses} \times 365$.



Abbreviations

Abbreviation	Full Form
AC	Alternating Current
ACBs	Air Circuit Breakers
ACC	Advanced Chemistry Cell
ACs	Air Conditioners
AI	Artificial Intelligence
BE	Budget Estimates
BEE	Bureau of Energy Efficiency
BESS	Battery Energy Storage Systems
BIS	Bureau of Indian Standards
BMS	Building Management Systems
BU	Billion Units
C&F	Carrying and Forwarding
C&I	Commercial & Industrial
CAGR	Compound Annual Growth Rate
CE	Conformité Européenne
CEA	Central Electricity Authority
CEEW	Council on Energy, Environment and Water
CEPA	Comprehensive Economic Partnership Agreement
CFL	Compact Fluorescent Lamp
CMIE	Centre for Monitoring Indian Economy
COS	Changeover Switch
COVID	Coronavirus Disease
CPI	Consumer Price Index
CPRI	Central Power Research Institute
CPSE	Central Public Sector Enterprise
CRS	Compulsory Registration Scheme
CSAs	Commission Stockist Agents
CY	Calendar Year
DC	Direct Current
DDUGJY	Deen Dayal Upadhyaya Gram Jyoti Yojana
DERs	Distributed Energy Resources
DFC	Dedicated Freight Corridor



DGFT	Directorate General of Foreign Trade
DPIIT	Department for Promotion of Industry and Internal Trade
DT	Distribution Transformer
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
EEQCO	Electrical Equipment (Quality Control) Order
EESL	Energy Efficiency Services Limited
EHV	Extra High Voltage
EMS	Energy Management Systems
EPC	Engineering, Procurement and Construction
EPR	Extended Producer Responsibility / Ethylene Propylene Rubber
ERDA	Electrical Research and Development Association
EU	European Union
EV	Electric Vehicle
FAME	Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles
FDI	Foreign Direct Investment
FE	First Estimates
FMCS	Foreign Manufacturers Certification Scheme
FMEG	Fast-Moving Electrical Goods
FR	Flame Retardant
FRE	First Revised Estimate
FRLS	Flame Retardant Low Smoke
FTA	Free Trade Agreement
FTP	Foreign Trade Policy
FY	Financial Year
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GL-I I	Gulf-Levant I I
GNDI	Gross National Disposable Income
GST	Goods and Services Tax
GVA	Gross Value Added
GW	Gigawatt
HCES	Household Consumption Expenditure Survey
HS	Harmonized System
HT	High Tension



HVAC	Heating, Ventilation and Air Conditioning
ICR	Interest Coverage Ratio
IEA	International Energy Agency
IEC	International Electrotechnical Commission
IEEPA	International Emergency Economic Powers Act
IIP	Index of Industrial Production
IMF	International Monetary Fund
INR	Indian Rupee
IoT	Internet of Things
IS	Indian Standard
ISI	Indian Standards Institution
ISO	International Organization for Standardization
IT	Information Technology
KMPs	Key Managerial Personnel
KPI	Key Performance Indicator
LAN	Local Area Network
LED	Light Emitting Diode
LNG	Liquefied Natural Gas
LSZH	Low Smoke Zero Halogen
LT	Low Tension
LV	Low Voltage
MCB	Miniature Circuit Breaker
MCCB	Moulded Case Circuit Breaker
MeitY	Ministry of Electronics and Information Technology
MHI	Ministry of Heavy Industries
MNRE	Ministry of New and Renewable Energy
MoEFCC	Ministry of Environment, Forest and Climate Change
MOSPI	Ministry of Statistics and Programme Implementation
MPC	Monetary Policy Committee
MPCB	Motor Protection Circuit Breaker
MSMEs	Micro, Small and Medium Enterprises
MT	Metric Tonne
MV	Medium Voltage
MVCC	Medium Voltage Covered Conductor
MW	Megawatt



NBC	National Building Code
NCR	National Capital Region
NEC	National Electrical Code
NITI	National Institution for Transforming India
NSO	National Statistics Office
NSWS	National Single Window System
OBBBA	One, Big, Beautiful Bill Act
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
PAT	Profit After Tax
PCBs	Printed Circuit Boards
PE	Provisional Estimates
PFCE	Private Final Consumption Expenditure
PIB	Press Information Bureau
PLCs	Programmable Logic Controllers
PLFS	Periodic Labour Force Survey
PLI	Production Linked Incentive
PM	Pradhan Mantri
PM E-DRIVE	PM Electric Drive Revolution in Innovative Vehicle Enhancement
PM-KUSUM	Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan
PV	Photovoltaic
PVC	Polyvinyl Chloride
QCOs	Quality Control Orders
R&D	Research and Development
RBI	Reserve Bank of India
RCBOs	Residual Current Circuit Breakers with Overcurrent Protection
RCCBs	Residual Current Circuit Breakers
RCDs	Residual Current Devices
RDSS	Revamped Distribution Sector Scheme
RE	Revised Estimates
REIT	Real Estate Investment Trust
RGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
RH	Relative Humidity
ROA	Return on Assets
ROCE	Return on Capital Employed



ROE	Return on Equity
RoHS	Restriction of Hazardous Substances
ROI	Return on Investment
RV	Recreational Vehicle
S&L	Standards & Labelling
SCADA	Supervisory Control and Data Acquisition
SERCs	State Electricity Regulatory Commissions
SHANTI	Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India
SIDCUL	State Infrastructure and Industrial Development Corporation of Uttarakhand Limited
SKUs	Stock Keeping Units
SMEs	Small and Medium Enterprises
SMT	Surface Mount Technology
SPDs	Surge Protection Devices
T&D	Transmission and Distribution
TWh	Terawatt-hour
UAE	United Arab Emirates
UJALA	Unnat Jyoti by Affordable LEDs for All
UK	United Kingdom
UL	Underwriters Laboratories
UNFCCC	United Nations Framework Convention on Climate Change
US / USA	United States of America
USD	United States Dollar
WEO	World Economic Outlook
WPI	Wholesale Price Index
XLPE	Cross-Linked Polyethylene
YoY	Year-on-Year
ZSI	Zone Selective Interlocking

