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Currents of Connectivity: Global and Indian Power EPC Industry

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Table of Contents

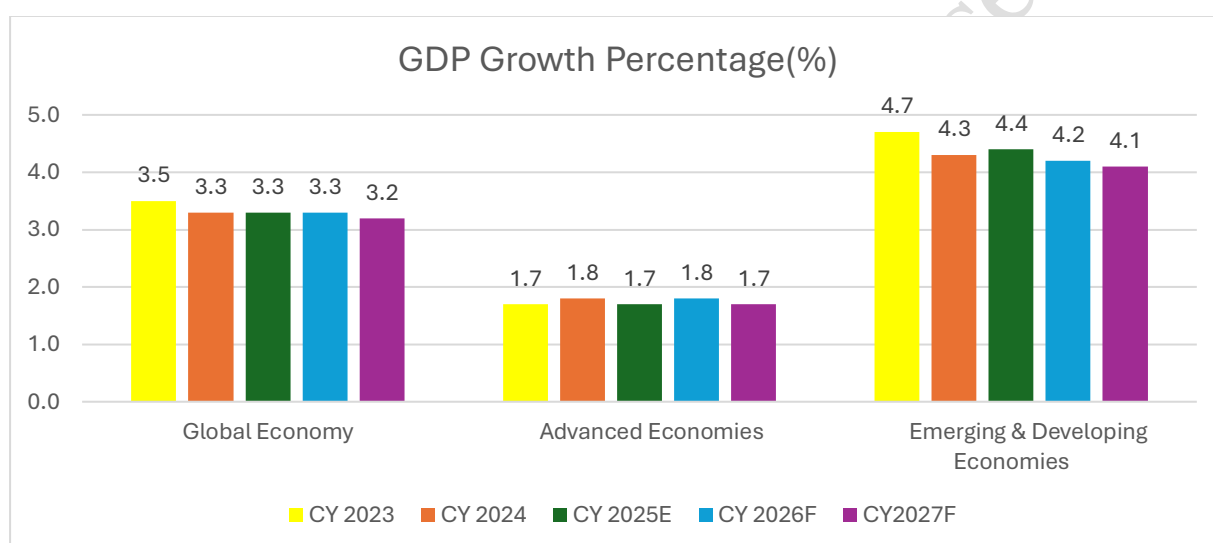
Sections	Title	Page
	Disclaimer	1
1	Global Economic Outlook	4
	• Global GDP Growth Scenario	4
	• GDP Growth Across Major Regions	6
2	India's Macroeconomic Scenario	8
	• Gross Domestic Product (GDP)	8
	• Gross Value Added (GVA)	9
	• Consumer Price Index (CPI)	10
	• India Per Capita GDP Forecast	11
	• Index of Industrial Production (IIP) Growth	12
	• Overview on Key Demographic Parameters	15
	• Union Budget FY25–26 Highlights	20
3	Industry Definition and Scope –	22
4	Market Segmentation	23
	• Value Chain Analysis	26
5	Global and Indian Industry Outlook	29
6	Market Dynamics	38
	• Key Growth Drivers	38
	• Market Restraints	41
7	Government Initiatives and Policy Support	43
8	Technology & Digital Transformation	47
9	PESTLE Analysis of the Industry	50
10	Competitive Landscape	52

	• Key Factors Shaping Competition	52
	• Competitive Strategies	54
	• Barriers to Entry	55
	• Consolidation Trend	57
	• Key Industry Players	58
	• Company Positioning – GV Electricals Limited	60
	• Financial Analysis	62
	• Peer Benchmarking Analysis	64
	• SWOT Analysis	66
11	Future Outlook	68

1. Global Macroeconomic Scenario

As per the IMF's World Economic Outlook (WEO) published in January 2026, global growth is projected at 3.3 percent in 2026 and at 3.2 percent in 2027.

Global headline inflation is expected to decline from an estimated 4.1 percent in 2025 to 3.8 percent in 2026 and further to 3.4 percent in 2027. The inflation projections are also broadly unchanged from those in October and envisage inflation returning to target more gradually in the United States than in other large economies.



F – Forecast, Source – IMF World Economic Outlook January 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 criteria, economic or otherwise, and it has evolved over time. It comprises of 40 countries under the Advanced Economies including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected countries from the Euro Zone (Germany, Italy, France etc.). The group of emerging market and developing economies (156) includes all those that are not classified as Advanced Economies (India, China, Brazil, Malaysia etc.)

Growth in advanced economies is projected to be 1.8 percent in 2026 and 1.7 percent in 2027. In the United States, the economy is projected to expand by 2.4 percent in 2026, supported by fiscal policy and a lower policy rate, while the impact of higher trade barriers also gradually wanes. This 0.3 percentage point upward revision from the October forecast reflects a stronger-than expected GDP outturn in the third quarter of 2025, a rebound in activity in the first quarter of 2026 compared with that in the fourth quarter of 2025 following the end of the federal government shutdown, and the associated carryover.

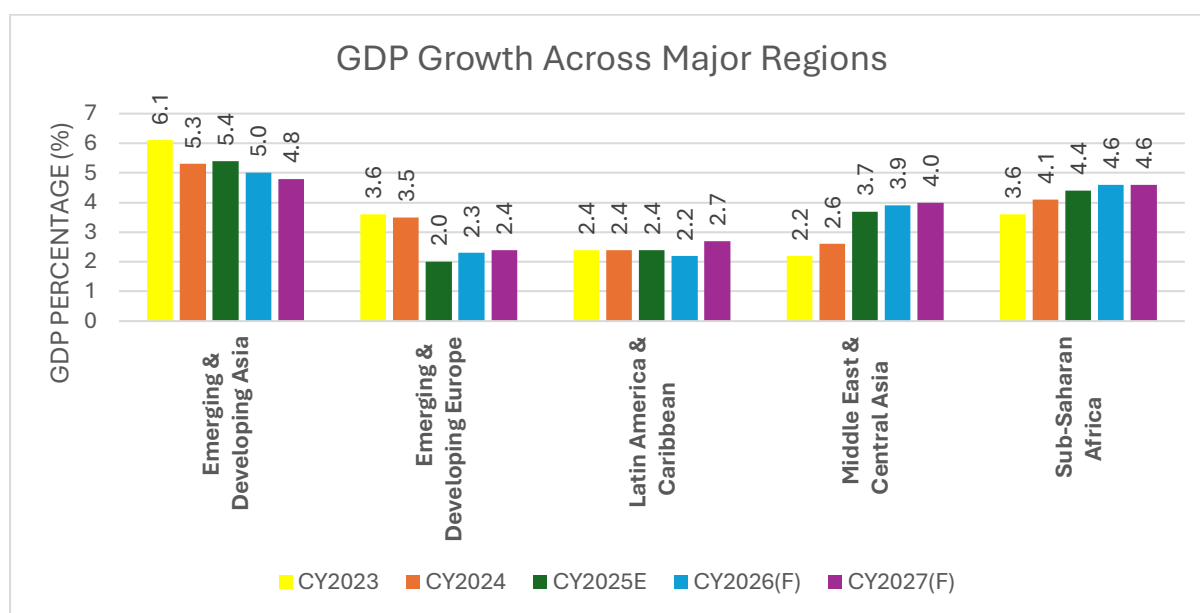
In emerging market and developing economies, growth is expected to continue to hover just above 4.0 percent in 2026 and 2027. Relative to the projection in October, growth in 2025 for China is revised upward by 0.2 percentage point to 5.0 percent. The revision reflects stimulus measures and additional policy bank lending for investment. Growth for 2026 is also revised upward by 0.3 percentage point to 4.5 percent, reflecting the lower US effective tariff rates on Chinese goods due to the yearlong trade truce agreed to in November and stimulus measures that are assumed to be implemented over two years. The economy's growth rate is expected to decelerate to 4.0 percent in 2027 as structural headwinds assert themselves.

In India, growth is revised upward by 0.7 percentage point to 7.3 percent for 2025, reflecting the better-than expected outturn in the third quarter of the year and strong momentum in the fourth quarter. Growth is projected to moderate to 6.4 percent in 2026 and 2027 as cyclical and temporary factors wane.

In the Middle East and Central Asia, growth is projected to accelerate from 3.7 percent in 2025 to 3.9 percent in 2026 and to 4.0 percent in 2027, supported by higher oil output, resilient local demand, and ongoing reforms. Growth is also expected to accelerate in sub-Saharan Africa, from 4.4 percent in 2025 to 4.6 percent in 2026 and 2027, supported by macroeconomic stabilization and reform efforts in key economies. In Latin America and the Caribbean, growth is projected to moderate to 2.2 percent in 2026 and bounce to 2.7 percent in 2027 as countries in the region approach potential from different cyclical positions. In emerging and developing Europe, a sharp slowdown in 2025 to a growth rate of 2.0 percent is expected to reverse, with economies in the region expanding at an average rate of 2.3 percent in 2026 and 2.4 percent in 2027. In most regions, the rebound also reflects the fading effect of shifting trade policies

1.1 GDP Growth across Major Regions

GDP growth across major global regions—including Europe, Latin America & the Caribbean, Middle East & Central Asia, and Sub-Saharan Africa—continues to display varied trajectories. The global outlook presents a mixed scenario, with emerging economies continuing to outperform advanced economies.



Source-IMF World Economic Outlook January 2026 update

In Emerging and Developing Asia, growth is projected to moderate from 5.4% in CY 2025 to 5.0% in CY 2026 and further projected at 4.8% during CY 2027. India's expected growth in 2025 has been uplifted at 7.3% in CY 2025, supported by resilient rural consumption and sustained infrastructure investments, up from 6.5% in CY2024. The growth estimate for 2026 and 2027 is kept at 6.4%. In contrast, China's growth is estimated at 5.0% in CY2025, and to further decelerate at 4.5% in 2026 and 4.0% in 2027.

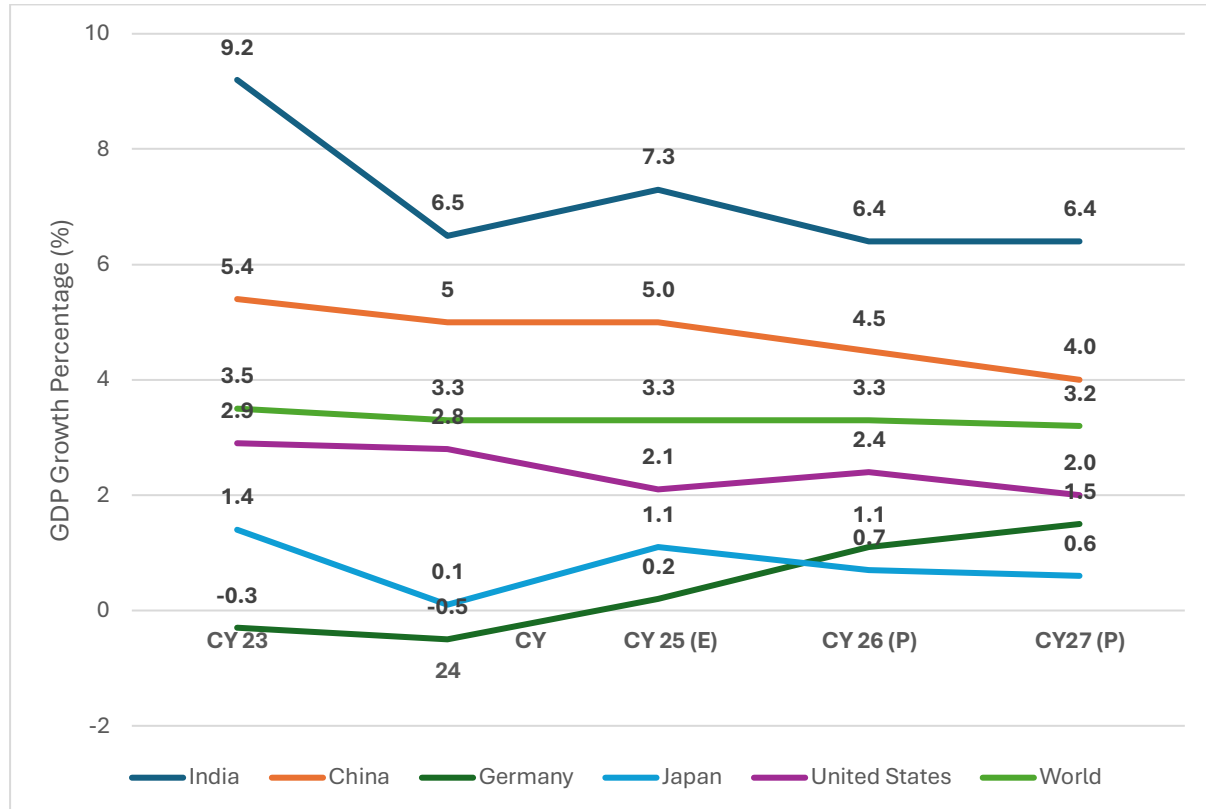
Sub-Saharan Africa is projected to grow at 4.4% in CY 2025, increased from 4.1% in CY 2024, with growth is expected to accelerate further at 4.6% in CY 2026. This gradual improvement is being supported by better weather conditions and more efficient supply chain operations.

In the Middle East and Central Asia, the economy is forecasted to expand from 3.7% in CY 2025 to 3.9% in CY 2026, and further at around 4.0% in CY 2027, driven by stabilization in oil production and ongoing economic reforms.

For Latin America and the Caribbean, the economy is expected to slow from 2.4% in CY 2025, to 2.2% in CY2026, but increase again at 2.7% in CY 2027 reflecting stable yet subdued economic momentum supported by stronger macroeconomic management across key economies.

Emerging and Developing Europe remains subdued, with growth estimated at 2.0% in CY 2025, down from 3.5% in CY 2024, expected to rise modestly to 2.3% in CY 2026 and further at 2.4% in 2027.

GDP Growth: India vs Major Economies



Note: P = Projections, Source: IMF World Economic Outlook January 2026 update

Overall, while global growth is expected to remain steady at 3.3% in CY 2025~CY2026 and at 3.2% in CY2027, regional disparities persist, influenced by a combination of domestic challenges, external geopolitical tensions, and fluctuating commodity prices.

2. India's Macroeconomic Scenario

2.1 Gross Domestic Product (GDP)

Real GDP is estimated to grow by 7.4% in FY 2025–26, improving from a growth rate of 6.5% in FY 2024–25. This momentum is also evident on a quarterly basis, with real GDP recording a robust growth of 8.2% in Q2 of FY 2025–26 compared to the growth rate of 5.6% during Q2 of FY25, whereas nominal GDP has witnessed a growth rate of 8.7% in Q2 of FY 2025-26.
Source – MOSPI, Press release – First advance estimates of Gross domestic product posted on January 07th, 2026.

In its latest Economic Outlook, the OECD noted that India remains one of the fastest-growing major economies, supported by strong investment activity and resilient services. OECD highlighted that India's GDP is projected to grow by 6.7% in fiscal year 2025-26, 6.2% in 2026-27 and 6.4% in 2027-28. Despite some likely impact of the US tariff on Indian exports, private consumption will be supported by rising real incomes as inflation remains soft and low consumption/indirect taxes (GST). Going forward, investment will be sustained by declining borrowing costs and strong public capital expenditure. Current low headline inflation is projected to gradually converge towards the 4% target. Notably, India's Headline Inflation drops to 0.25 % in October 2025 (MOSPI, Nov 12, 2025, press release).

India's Economic Growth Momentum Remains Strong - Surpassed USD 4 Trillion.

In June 2025, India became the fourth-largest economy in the world and retained its position as the fastest-growing major economy. The country is projected to become the world's third largest economy by 2030, with an estimated GDP of USD 7.3 trillion.

Source: PIB, Press Release - India Becoming an Economic Powerhouse posted on June 16, 2025

India achieved a significant milestone by overtaking Japan to become the *third most powerful nation in the Asia-Pacific region*, as per the Asia Power Index 2024. India's overall score rose to 39.1, reflecting a 2.8-point increase from the previous year, driven by growing influence across economic, military, and diplomatic dimensions.

Source: PIB, Press Release - India becomes 3rd Most Powerful Nation in Asia, Surpasses Japan in Asia Power Index posted on September 24, 2024

Key factors behind India's rise include its strong economic performance, expanding and youthful workforce, and increasing strategic engagement across the region. India's Economic Capability improved significantly, supported by its position as the world's third-largest economy in terms of purchasing power parity (PPP). Additionally, a notable increase in its Future Resources score highlights the demographic advantage that is expected to sustain its growth trajectory in the coming years.

2.2 Gross Value Added (GVA)

According to the First Advance Estimates of National Income for FY 2025-26 released by the Ministry of Statistics and Programme Implementation ("MOSPI"), Government of India, Real Gross Value Added ("GVA") at constant prices is estimated at ₹184.50 lakh crore in FY 2025-26, compared with the Provisional Estimates of ₹171.87 lakh crore in FY 2024-25, reflecting a growth rate of 7.3%. Nominal GVA at current prices is estimated at ₹323.48 lakh crore in FY 2025-26, as against ₹300.22 lakh crore in FY 2024-25, indicating a growth rate of 7.7%.

MOSPI has also estimated Real Gross Domestic Product ("GDP") growth at 7.4% in FY 2025-26, compared with 6.5% in FY 2024-25, while Nominal GDP is estimated to grow by 8.0% during FY 2025-26.

Sector-wise estimates at constant prices indicate that Financial, Real Estate and Professional Services and Public Administration, Defence and Other Services recorded growth of 9.9% in FY 2025-26. Trade, Hotels, Transport, Communication and Services related to Broadcasting are estimated to grow by 7.5%, while Manufacturing and Construction are estimated to grow by 7.0%. Agriculture and Allied Activities (3.1%) and Electricity, Gas, Water Supply and Other Utility Services (2.1%) recorded comparatively moderate GVA growth during FY 2025-26.

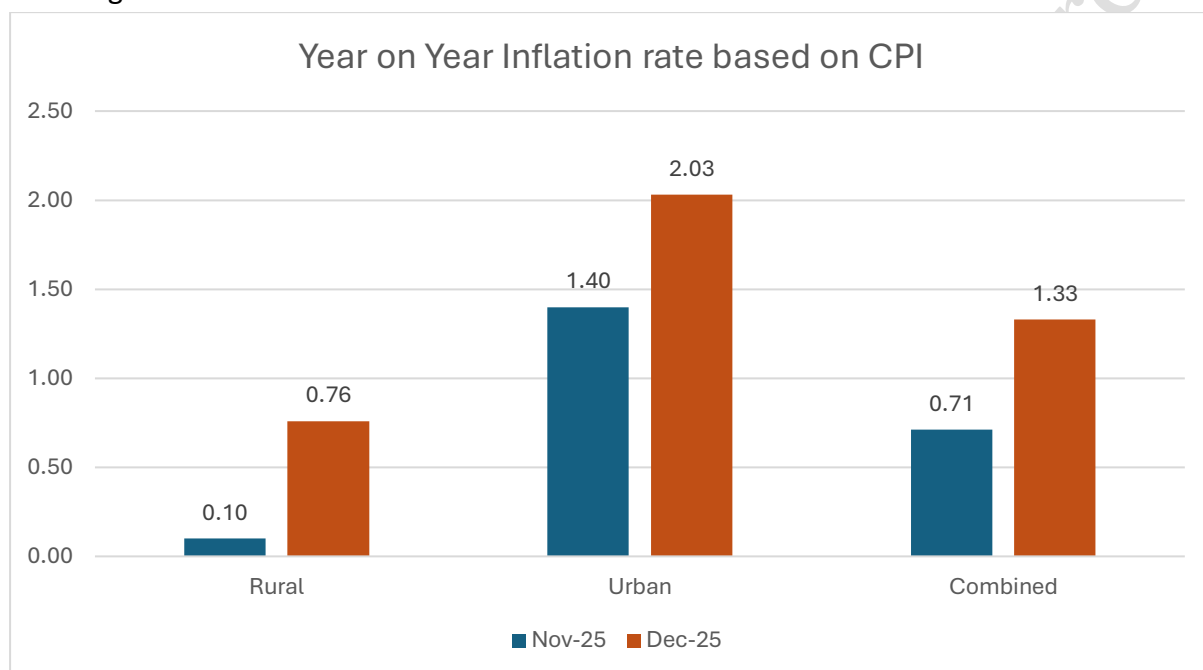
Real Private Final Consumption Expenditure ("PFCE") is estimated to grow by 7.0% during FY 2025-26.

Source: MOSPI, Press Release dated 7 January 2026, Government of India.

2.3 Consumer Price Index (CPI)

Year-on-year headline inflation, measured by the All-India Consumer Price Index ("CPI"), stood at 1.33% (provisional) in December 2025, compared with December 2024. This represented an increase of 62 basis points over November 2025. In October 2025 (provisional), headline CPI inflation was 0.25%, reflecting a decline of 119 basis points compared with September 2025, marking the lowest year-on-year inflation reading in the current CPI series.

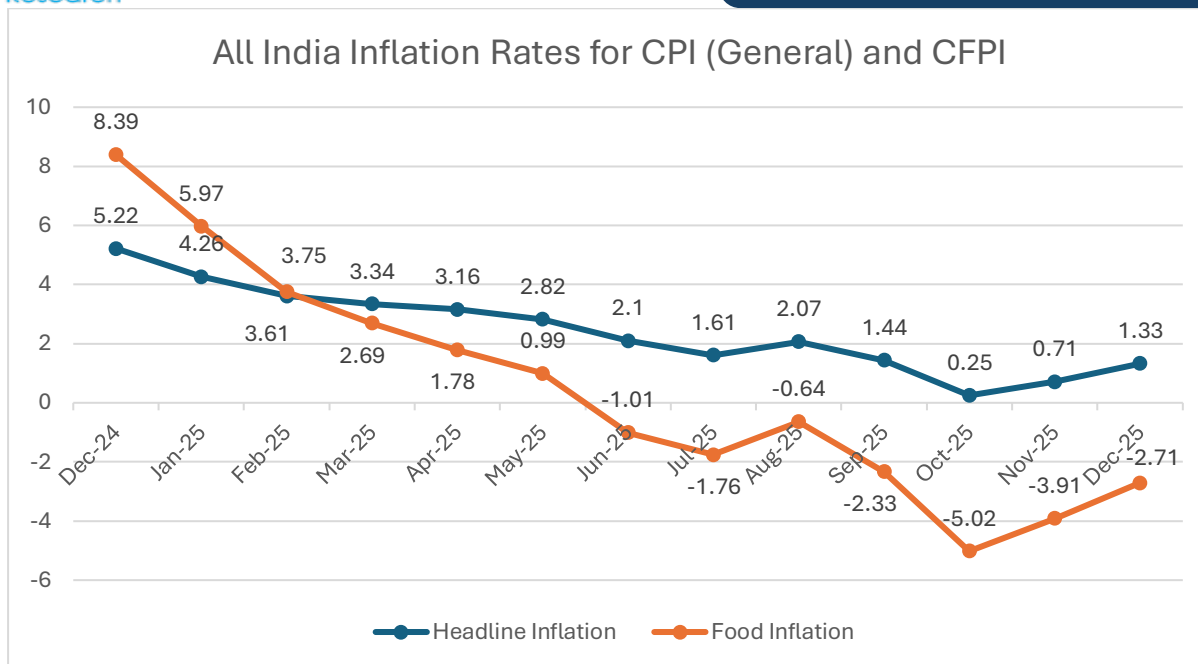
Rural CPI inflation was 0.76% in December 2025, while urban CPI inflation stood at 2.03%, resulting in a combined inflation rate of 1.33%.



Source: MOSPI, GOI

The accompanying chart also presents trends in CPI (General) and Consumer Food Price Index ("CFPI"), where CFPI represents year-on-year inflation in food and beverage items within the CPI basket. Negative CFPI readings observed during certain months reflect year-on-year declines in food prices, primarily driven by moderation in vegetable and cereal prices, and do not indicate deflation across the broader consumption basket.

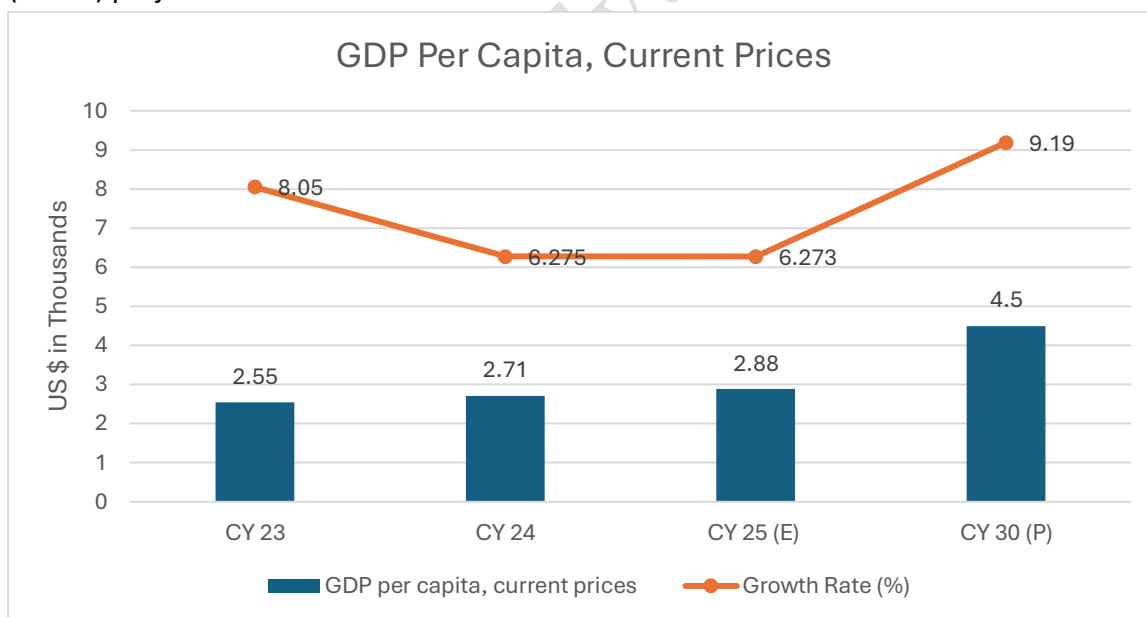
Movements in headline CPI during the period were largely influenced by volatility in food inflation, as reflected in CFPI, while core components remained comparatively stable.



Source: MOSPI, GOI

2.4 India Per Capita GDP Forecast

India's per capita Gross Domestic Product ("GDP") is estimated to grow at a compound annual growth rate ("CAGR") of 9.19% over CY2025–CY2030, based on International Monetary Fund ("IMF") projections.



Note: E = Estimated, P = Projected

Source: IMF Data Mapper, World Economic Outlook April 2025, India, GDP Per Capita

Footnote:

Per capita GDP figures are based on IMF World Economic Outlook (April 2025) estimates and projections for India and are presented in current prices (nominal terms) in US dollars. CAGR has been computed using IMF per capita GDP values for CY2025 (E) as the base year and CY2030 (P) as the terminal year.

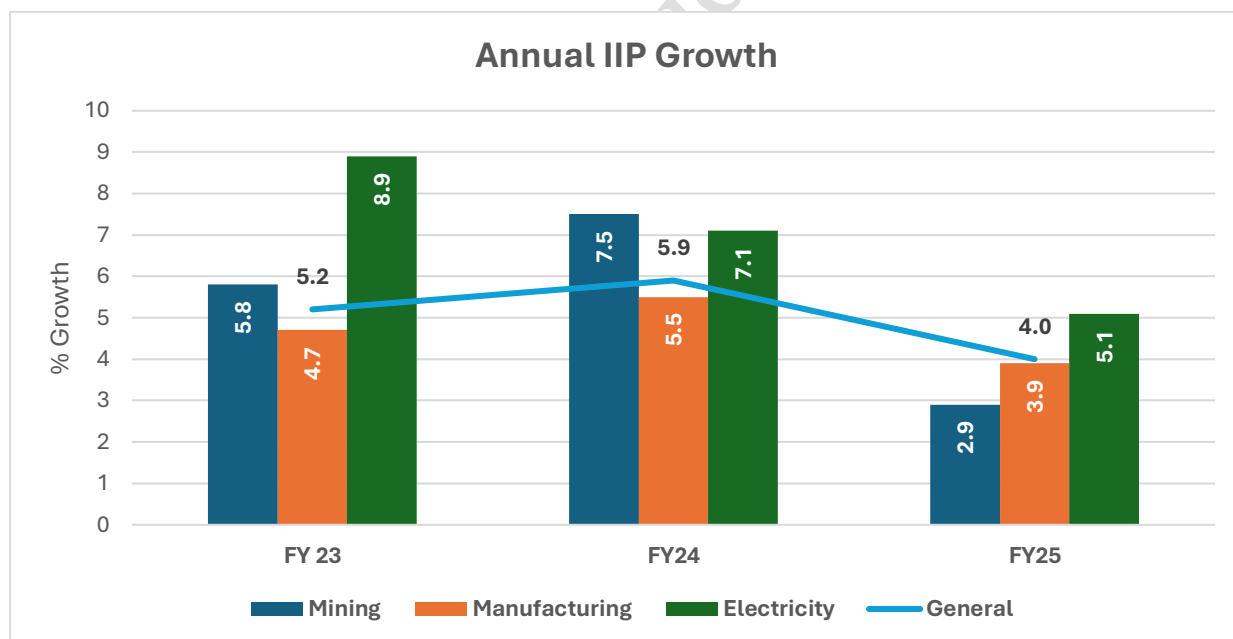
2.5 Index of Industrial Production (IIP) Growth Trends:

As per the Index of Industrial Production (IIP), the industrial sector grew by 4.0% in FY 2025, moderating from 5.9% in FY 2024 and 5.2% in FY 2023. This deceleration in overall IIP growth in FY 2025 reflects a softening of industrial momentum amidst global headwinds and tighter financial conditions.

Among key components:

- **Manufacturing** (which holds a 77.6% weight in IIP) registered a slower growth of 3.9% in FY 2025, compared to 5.5% in FY 2024 and 4.7% in FY 2023.
- **Mining** growth also moderated sharply to 2.9% in FY 2025 from 7.5% in FY 2024 and 5.8% in FY 2023.
- **Electricity** growth remained relatively stable at 5.1% in FY 2025, slightly down from 7.1% in FY 2024 and significantly lower than 8.9% in FY 2023.

This slowdown indicates tightening domestic demand and spillover effects from a weaker global industrial cycle.



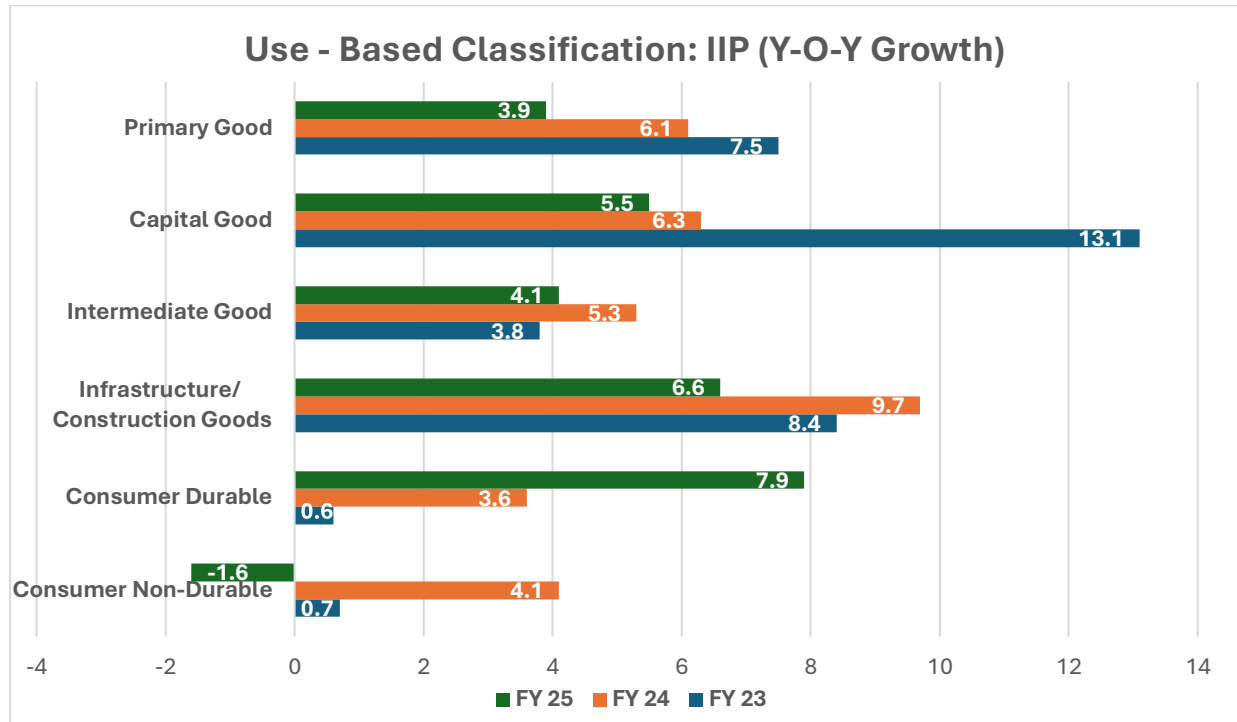
Source: Ministry of Statistics & Programme Implementation (MOSPI)

Latest IIP data in Oct'25 remains a tad low amid less activity during festival times

The Index of Industrial Production (IIP) slows a tad at 0.4% during Oct'25 due to less working days available amid festivals. The growth rates of the three sectors, Mining, Manufacturing and Electricity for the month of October 2025 are (-) 1.8 percent, 1.8 percent and (-) 6.9 percent respectively. Lower demand in October 2025 and subsequent decline in electricity generation was driven by extended rainfall season and comfortable ambient temperature across multiple States/UTs.

Source: Quick Estimate of Index of Industrial Production and Use-Based Index for the Month of October 2025, MOSPI, December 01, 2025 Release

Use-Based Classification Trends:



Source: Ministry of Statistics & Programme Implementation (MOSPI)

According to the use-based classification:

- Capital Goods segment growth slowed to 5.5% in FY 2025, down from a high of 13.1% in FY 2023 and 6.3% in FY 2024, indicating a reduction in investment momentum.
- Primary Goods also witnessed slower growth at 3.9%, compared to 6.1% in FY 2024 and 7.5% in FY 2023.
- Intermediate Goods rebounded modestly to 4.1% in FY 2025, up from 3.8% in FY 2023, although still lower than 5.3% in FY 2024.
- Infrastructure/Construction Goods slowed to 6.6% in FY 2025 from 9.7% in FY 2024 and 8.4% in FY 2023, pointing to softening construction and infrastructure activity.
- Consumer Durables grew significantly by 7.9%, rebounding from 3.6% in FY 2024 and 0.6% in FY 2023, indicating improved demand in consumer electronics and appliances.
- In contrast, Consumer Non-Durables contracted by 1.6% in FY 2025, reversing the 4.1% growth in FY 2024, likely reflecting subdued rural and essential goods demand.

The divergence in growth across segments suggests an uneven industrial recovery in FY 2025. While certain consumer categories have rebounded, investment-related and primary sectors remain under pressure.

The latest growth rates of IIP as per Use-based classification in October 2025 over October 2024 are (-)0.6 percent in Primary goods, 2.4 percent in Capital goods, 0.9 percent in Intermediate goods, 7.1 percent in Infrastructure/ Construction Goods, (-) 0.5 percent in Consumer durables and (-)4.4 percent in Consumer non-durables. Based on use-based classification, top three positive contributors to the growth of IIP for the month of October 2025 are Infrastructure/ construction goods, Intermediate goods and Capital goods.

Relevance to Power EPC: Infrastructure / Construction Goods and Capital Goods categories include electrical equipment, machinery and construction-related outputs, which form part of the upstream industrial base supporting transmission, distribution and power infrastructure execution.

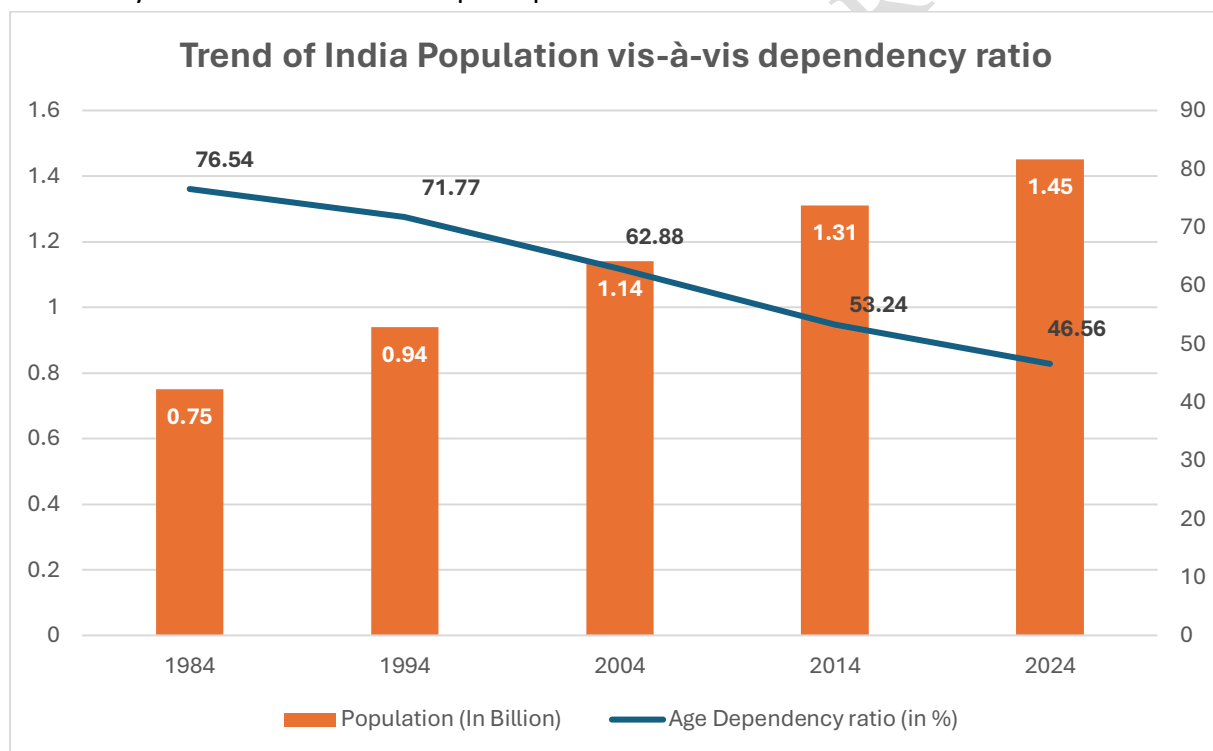
2.6 Overview on Key Demographic Parameters

2.6.1 Population growth and Urbanization

India's population has increased steadily over the past four decades. As per World Bank data, India's population expanded from approximately 0.75 billion in 1984 to 1.45 billion in 2024, making it the world's most populous country.

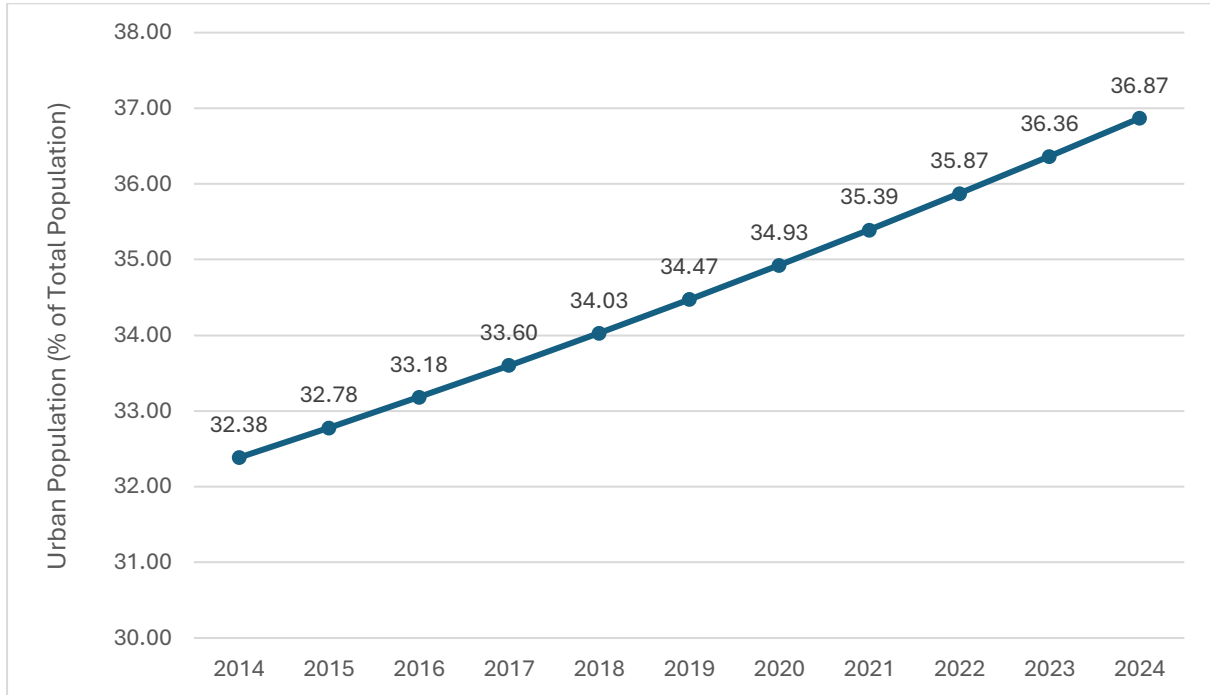
Over the same period, the age dependency ratio has declined. According to the World Bank, the ratio reduced from 76.54% in 1984 to 71.77% in 1994, 62.88% in 2004, 53.24% in 2014, and further to 46.56% in 2024. This indicates a reduction in the number of dependents per 100 working-age individuals over time.

The combination of rising population and declining dependency ratio reflects an increase in the working-age population as a share of total population, which has implications for labour availability and household consumption patterns.



Source: World Bank Database, Infomerics Analytics & Research

Urbanization Trend in India



Source: World Bank Database

Urbanisation levels in India have increased over the past decade. As per World Bank estimates, the urban population rose from 424.96 million in 2014 (32.38% of total population) to 522.93 million in 2023 (36.36%), and further to approximately 534.91 million in 2024 (36.87%).

The increase in urban population reflects continued migration towards urban centres and expansion of existing cities, with corresponding implications for housing, transport, utilities and municipal infrastructure.

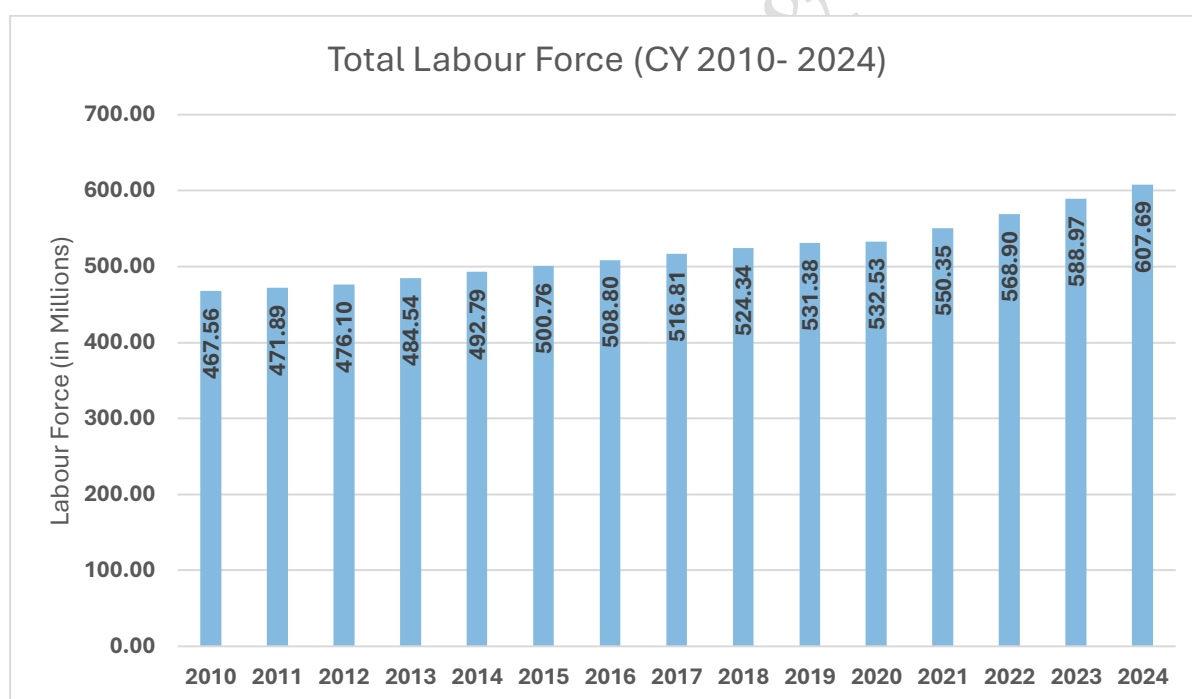
2.6.2 Labour Force in India

India's labour force has expanded steadily over the past decade. In 2010, the total labour force stood at approximately 467.56 million, increasing to 607.69 million by 2024, reflecting a Compound Annual Growth Rate ("CAGR") of 1.89% over the 14-year period.

This growth reflects the expansion of the working-age population alongside ongoing economic development, while also underscoring the importance of sustained employment generation to absorb the increasing labour supply across productive sectors.

The labour force participation rate ("LFPR") has exhibited variability over the period, influenced by socio-economic factors. As of 2024, LFPR (15+ years, usual status) stood at 45.1% per World Bank, representing the proportion of individuals aged 15 years and above who were either employed or actively seeking employment.

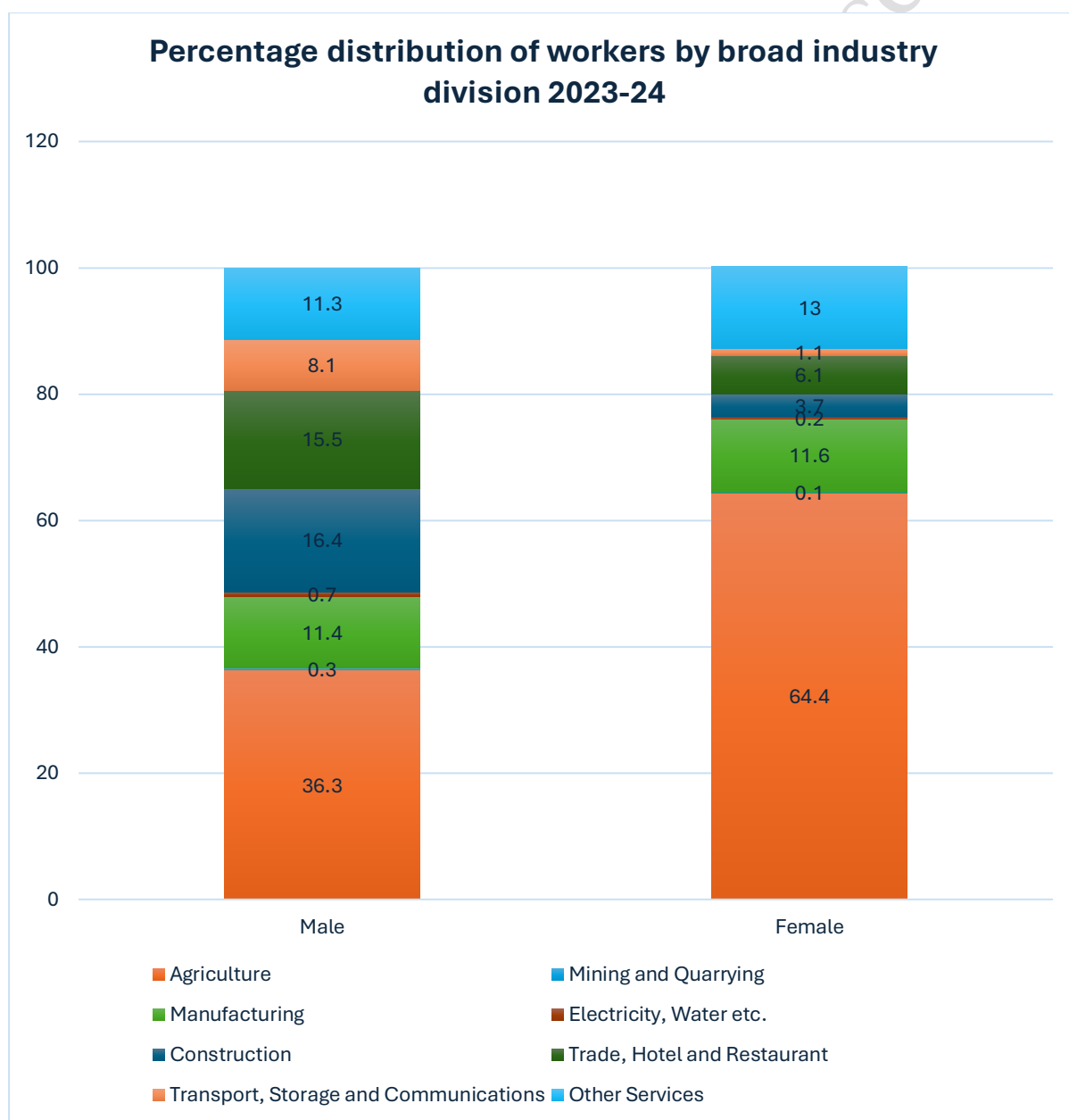
These trends highlight the continued relevance of policies aimed at expanding employment opportunities and improving job quality and inclusivity across sectors of the economy.



Source: World Bank Database

2.6.3 Breakdown of Employment by Sector

According to the Periodic Labour Force Survey (PLFS) 2023–24, the employment distribution across various sectors exhibits distinct gender-based patterns. A significant portion of male workers are engaged in agriculture, followed by notable participation in construction, manufacturing, and trade-related activities. In contrast, female workers are predominantly employed in agriculture, with considerable involvement in manufacturing and other services sectors. While female representation in trade and construction is lower compared to males, Additionally, a substantial proportion of employed women are self-employed, often contributing as unpaid helpers in household enterprises or operating small businesses, indicating a reliance on informal employment avenues.

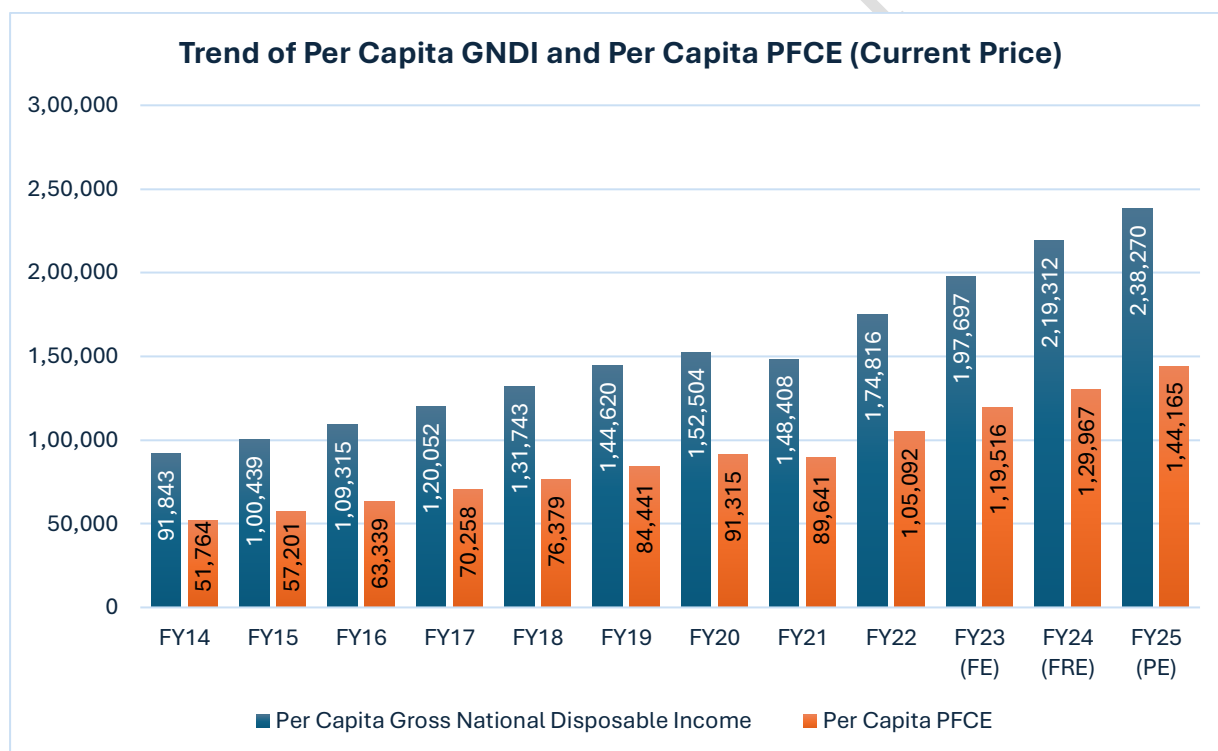


Source: Annual Report 2023-24, Periodic Labour Force Survey

2.6.4 Disposable Income and Consumer Spending

Gross National Disposable Income (GNDI) represents the total income available to a nation's residents for consumption and saving after accounting for income transfers with the rest of the world. In FY24, Per capita GNDI grew by 10.9%, followed by a moderate growth of 8.6% in FY25. This steady increase indicates that households and businesses had more income at their disposal, which is critical for supporting both consumption and savings—key components of economic resilience and expansion.

The rise in GNDI has translated into higher consumer spending, as reflected in the growth of Private Final Consumption Expenditure (PFCE), which measures the total value of goods and services consumed by households. Per Capita PFCE grew by 8.7% in FY24 and further accelerated to 10.9% in FY25, highlighting strong consumer confidence and robust domestic demand.



Note: Data mentioned is in INR, FE – Final Estimates, FRE – First Revised Estimates, PE – Provisional Estimate; Source: PIB, *Provisional estimates of GDP 2024-25 released on May 30th, 2025*

2.7 Union Budget FY26-27 Highlights

The Union Budget FY 2026–27 outlines measures aimed at supporting infrastructure development, capital formation and industrial activity, with implications for the power transmission, distribution and EPC ecosystem.

Capital Expenditure and Infrastructure

For FY 2026–27, public capital expenditure has been increased to ₹12.2 lakh crore, compared to ₹11.21 lakh crore (3.1% of GDP) in FY 2025–26. To address construction-phase risks in infrastructure projects, the Budget proposes the establishment of an Infrastructure Risk Guarantee Fund to provide prudently calibrated partial credit guarantees to lenders, intended to improve risk sharing and facilitate project financing.

Support for MSMEs

The Budget announced a ₹10,000 crore SME Growth Fund and a further ₹2,000 crore top-up to the Self-Reliant India Fund to support micro enterprises' access to risk capital. In addition, measures have been proposed to strengthen the Trade Receivables Discounting System (TReDS), including mandatory adoption by CPSEs for MSME procurement, credit guarantee support for invoice discounting, linkage of GeM with TReDS, and development of TReDS receivables as asset-backed securities. These initiatives are aimed at improving liquidity and working capital availability for MSMEs engaged across infrastructure supply chains.

Carbon Capture, Utilisation and Storage (CCUS)

In line with the CCUS roadmap launched in December 2025, the Budget proposes an outlay of ₹20,000 crore over five years to advance CCUS deployment across five industrial sectors, including power, steel, cement, refineries and chemicals, supporting technology readiness in end-use applications.

Municipal Bonds

To encourage higher-value municipal bond issuances by large cities, an incentive of ₹100 crore has been proposed for single bond issuances exceeding ₹1,000 crore. The existing AMRUT-linked incentive scheme for issuances up to ₹200 crore will continue for small and medium towns. These measures are intended to broaden urban infrastructure financing avenues.

Ease of Doing Business

The Budget proposes permitting Individual Persons Resident Outside India (PROI) to invest in equity instruments of listed Indian companies under the Portfolio Investment Scheme, with the individual investment limit increased from 5% to 10% and the aggregate limit for all individual PROIs raised to 24% from 10%.

The Union Budget FY 2026–27 emphasises public capital expenditure, risk-mitigation mechanisms, MSME liquidity support and urban financing instruments, which collectively provide a supportive policy backdrop for infrastructure development, including power transmission, distribution, EPC execution and associated O&M activities.

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3. Industry Definition and Scope

The Engineering, Procurement & Construction (EPC) – Power Transmission & Distribution industry is a vital segment within the broader power infrastructure sector, focusing on the comprehensive delivery of electrical transmission and distribution systems. This encompasses the design, procurement, construction, testing, and commissioning of high-voltage and extra-high-voltage networks, substations, and associated infrastructure, facilitating the efficient and reliable transmission of electrical power from generation sources to end-users.

The industry is broadly categorized into:

- **Transmission EPC:** Involves the development of high-voltage transmission lines and substations, typically operating at voltages ranging from 33 kV to 765 kV, to transport electricity over long distances.
- **Distribution EPC:** Focuses on the construction and enhancement of distribution networks, including substations and feeder lines, operating at voltages from 11 kV to 33 kV, to deliver electricity to residential, commercial, and industrial consumers.
- **Renewable Integration EPC:** Entails the integration of renewable energy sources into the existing grid infrastructure, encompassing the development of evacuation lines, substations, and automation systems to accommodate the variable nature of renewable power generation.
- **Smart Grid and Automation EPC:** Centers on the implementation of advanced metering, communication, and control technologies to enhance the efficiency, reliability, and resilience of power distribution systems.

In India, the EPC sector has evolved from a predominantly public-sector-driven model to a dynamic, competitive landscape, supported by a robust network of private contractors, state-owned enterprises, and specialized engineering firms. Growth is propelled by factors such as urbanization, industrial expansion, government initiatives like "Power for All," and the increasing emphasis on renewable energy integration.

Globally, the demand for EPC services in power transmission and distribution is influenced by factors including the modernization of aging infrastructure, the expansion of renewable energy capacities, and the adoption of smart grid technologies. The sector is characterized by its capital-intensive nature, long project timelines, and the necessity for adherence to stringent regulatory standards and safety protocols.

4. Market Segmentation

The Engineering, Procurement & Construction (EPC) – Power Transmission & Distribution and Operations & Maintenance (O&M) industry exhibits a structured and diversified landscape, reflecting variations in project type, voltage class, asset lifecycle stage, customer segment, and geographic deployment. Segmentation of this sector provides insight into demand drivers, informs capacity and resource planning, and highlights participation across both capital execution and post-commissioning asset management.

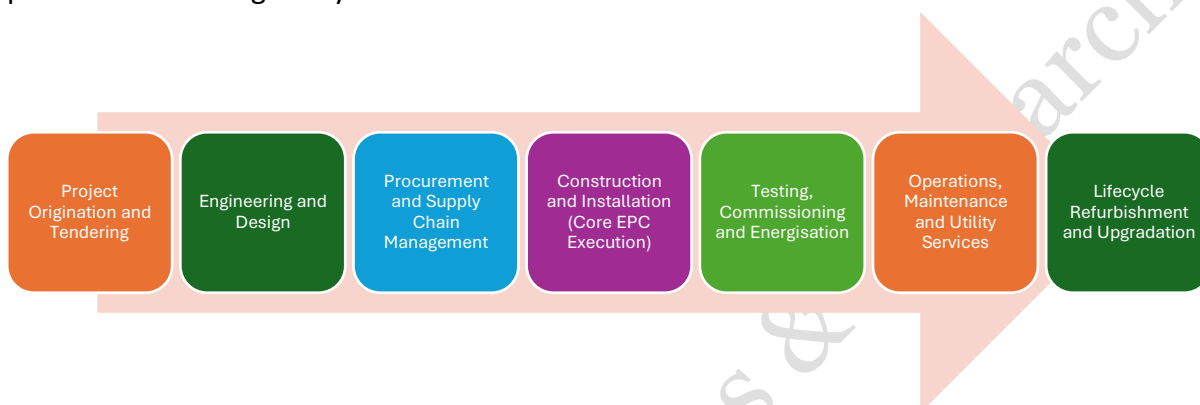
Category	Sub-Category	Description / Insights
By Project Type	Transmission Lines EPC	EPC projects involving high-voltage and extra-high-voltage transmission lines (33 kV–765 kV) deployed for bulk power transfer from generation sources to substations, including renewable evacuation corridors.
	Substations EPC	EPC services covering 11 kV–765 kV substations, including air-insulated and GIS substations, transformers, switchgear, busbars, protection systems, and associated control infrastructure. Substations act as primary nodes for transmission and downstream distribution.
	Distribution EPC	Engineering, procurement, and construction of medium- and low-voltage distribution networks (up to 33 kV), including feeder lines, distribution transformers, RMUs, underground and overhead networks, and consumer connectivity infrastructure for last-mile power delivery.
	Transmission & Distribution O&M	Operations and maintenance of substations and distribution assets, including GIS substations and DISCOM networks. Covers feeder and line maintenance, transformer servicing, fault rectification, metering support, streetlighting operations, preventive maintenance, and asset lifecycle management through annual maintenance contracts and long-term service arrangements.
	Transmission Infrastructure Upgradation	Modernisation and capacity augmentation of existing transmission and substation assets to improve load handling, reliability, and automation, including

		retrofitting, digital protection systems, and network strengthening works.
	Renewable Integration	EPC and O&M activities supporting integration of solar, wind, and hybrid generation into transmission and distribution networks, including evacuation lines, grid-tied substations, automation systems, and operational monitoring.
	Smart Grid & Automation	Deployment and maintenance of advanced metering infrastructure, SCADA systems, automation platforms, and remote monitoring solutions to support outage management, network efficiency, and operational visibility.
By Customer Segment	Government Utilities	State transmission utilities, DISCOMs, and central agencies implementing electrification, grid strengthening, renewable integration, and distribution reform programs. Engagements include EPC execution and outsourced O&M for network operations, loss reduction initiatives, billing systems, and field services.
	Industrial & Corporate	Industrial facilities, manufacturing plants, IT parks, hospitals, and commercial campuses requiring EPC delivery along with ongoing electrical system operations and maintenance support.
	Private Developers	Independent power producers and renewable developers requiring EPC for grid connectivity, substations, evacuation infrastructure, and post-commissioning O&M services.
By Geography	Domestic Regions	Activity concentrated across infrastructure and industrial corridors in Maharashtra, Gujarat, Tamil Nadu, Karnataka, and Telangana, driven by utility capex programs, urbanisation, and industrial expansion. O&M demand follows the installed asset base.
	Export / International Projects	EPC and maintenance contracts in select overseas markets, including South Asia, Middle East, and Africa, linked to grid expansion, renewable integration, and transmission modernisation initiatives.

By Technology / Engineering Approach	Conventional EPC	Standard engineering and construction practices for transmission lines and substations using established voltage classes and design methodologies.
	Advanced Automation & Smart Grid	Integration of automation, remote monitoring, SCADA, and field response systems, including deployment of rapid-response maintenance teams for fault detection, emergency restoration, and preventive maintenance.
	Renewable-Specific EPC & O&M	Engineering and lifecycle maintenance solutions tailored for solar and wind evacuation systems, including specialised substation configurations, SCADA integration, and hybrid network management.
By Power Source	Renewable	EPC and O&M activities associated with solar, wind, and hybrid generation assets, with emphasis on grid connectivity, operational stability, and asset performance monitoring.
	Non-Renewable	EPC and O&M engagements linked to thermal, hydro, and gas-based power facilities, focused on evacuation reliability, transmission efficiency, and integration with regional and national grids.

Value Chain Analysis

India's electrical engineering, procurement and construction ("EPC") value chain spans the development, execution and lifecycle management of power transmission and distribution infrastructure, connecting bulk power systems to end consumers. Participants operate across one or multiple stages depending on their technical capabilities, execution scale and client focus, with value creation distributed across transmission EPC, distribution EPC and post-commissioning utility services.



Project Origination and Tendering

The value chain is initiated through tenders and contracts issued by Power Grid Corporation of India Limited ("PGCIL") for inter-state transmission projects (primarily via tariff-based competitive bidding or nomination on cost-plus basis) and by State Transmission Utilities ("STUs") and distribution companies ("DISCOMs") for intra-state transmission and distribution infrastructure, along with private utilities, renewable developers and industrial consumers. This stage involves feasibility assessment, technical qualification, bid preparation and pricing under engineering, procurement and construction ("EPC") turnkey, design-build or item-rate contract structures.

Procurement is predominantly undertaken through competitive bidding, with bidder eligibility governed by prescribed technical experience, financial capacity and net-worth based qualification requirements ("QRs"), including prior experience in executing similar voltage-class projects, prescribed turnover thresholds and liquidity or solvency criteria. Larger transmission packages typically favour EPC formats with milestone-linked payments to allocate design, procurement and execution risk to contractors, whereas distribution programmes increasingly adopt item-rate or hybrid models to accommodate quantity variations, phased rollout and live-network interfacing constraints. Larger EPC platforms compete primarily on scale and balance sheet strength, whereas distribution-focused contractors leverage execution track record and long-standing utility relationships. These procurement structures influence contractor participation, working capital intensity and project risk allocation across the value chain.

Engineering and Design

This phase includes system design, route surveys, foundation and layout planning, load assessment, protection schemes and detailed engineering for transmission lines, substations and distribution networks. Engineering capability influences constructability, cost efficiency and execution timelines, particularly for underground cabling, substations and urban infrastructure projects requiring coordination across multiple stakeholders.

Procurement and Supply Chain Management

Procurement encompasses transformers, cables, switchgear, ring main units, panels and auxiliary equipment sourced from original equipment manufacturers (“OEMs”) or in-house manufacturing units in the case of integrated players. This stage also involves vendor qualification, logistics coordination and inventory planning. Effective supply chain management supports cost control and schedule management.

Construction and Installation (EPC Execution)

This stage includes erection of high-voltage and extra-high-voltage transmission lines, construction of air-insulated and gas-insulated substations, laying of underground and overhead distribution networks, installation of distribution transformers, feeder segregation, low-tension aerial bunched cables, streetlighting and associated civil works. Execution requirements vary by project type, with urban underground cabling and live-network upgrades involving higher technical complexity, safety controls and interface management.

Testing, Commissioning and Energisation

Projects progress to testing and commissioning, covering protection relay testing, cable fault checks, system integration and final energisation. This stage supports regulatory compliance and operational readiness prior to handover to utilities or end users.

Operations, Maintenance and Utility Services

Operations and maintenance (“O&M”) forms an integral component of the electrical EPC lifecycle and enables continued engagement with utilities following project commissioning. O&M services include substation operation, preventive and breakdown maintenance, fault location, low-tension network management, metering, billing support and streetlight upkeep. These activities support network reliability, asset performance and service continuity.

For distribution-focused contractors, O&M facilitates ongoing participation in utility operations alongside project execution. Contractors with established field presence and response capability are positioned to undertake longer-term service engagements, supporting continuity across network maintenance and upgrade programmes.

Lifecycle Refurbishment and Network Upgradation

Utilities periodically undertake feeder strengthening, substation augmentation, loss-reduction initiatives and digitalisation projects such as smart metering, advanced metering infrastructure and SCADA integration. Contractors with established O&M presence are often considered for repeat assignments, supporting continuity across network refurbishment activities.

Within this value chain, companies operate in downstream segments encompassing distribution EPC, substation execution, underground cabling and utility O&M. Other participants adopt differentiated models, including specialist contractors focused on EHV underground cabling and substations, diversified EPC platforms addressing large-scale transmission programmes, and integrated players combining equipment manufacturing with electrical EPC.

Distribution-centric operators engage with utilities across both project execution and network operations, positioning themselves closer to end consumers within the power delivery ecosystem.

India's electrical EPC value chain is anchored in transmission expansion and distribution modernisation, with increasing emphasis on lifecycle services and network reliability. While larger EPC platforms participate in high-voltage transmission projects, distribution-focused contractors and integrated electrical players address last-mile connectivity, utility operations and urban infrastructure upgrades. This downstream segment supports continued engagement alongside project execution, supported by ongoing grid strengthening, digitalisation and service-oriented reforms in the power sector.

4.2 Market Mapping

India's power transmission and distribution ("T&D") engineering, procurement and construction ("EPC") market operates across three primary functional layers: transmission EPC, distribution EPC and operations and maintenance ("O&M") services.

Transmission EPC comprises inter-state and intra-state transmission lines and substations executed through central and state utilities, including projects awarded under tariff-based competitive bidding as well as nomination-based frameworks. Activity in this segment is driven by national grid expansion, renewable energy evacuation requirements and augmentation of high-voltage infrastructure.

Distribution EPC covers last-mile network development, including underground and overhead cabling, substation construction and augmentation, distribution transformer installation, feeder segregation and associated civil works. This layer is supported by government-led distribution modernisation programmes, including the Revamped Distribution Sector Scheme ("RDSS"), which focuses on network strengthening, loss reduction and digitalisation initiatives such as smart metering and advanced metering infrastructure.

Operations and maintenance services form the lifecycle layer of the T&D EPC market and include substation operation, preventive and breakdown maintenance, fault response, low-tension network management, metering support and streetlight upkeep. O&M engagements enable continued participation with utilities following project commissioning and support network reliability and asset performance.

While transmission EPC is characterised by larger project sizes and longer execution cycles, distribution EPC typically involves phased rollouts across live networks with higher interface intensity. O&M services are increasingly integrated with distribution EPC engagements, enabling contractors to maintain operational continuity across network upgrade and refurbishment programmes.

4.3 Industry Boundary Definition

The Power Transmission and Distribution (“T&D”) Engineering, Procurement and Construction (“EPC”) and Operations and Maintenance (“O&M”) industry encompasses regulated utility-oriented infrastructure development and lifecycle services associated with the evacuation, transmission and distribution of electrical power.

Industry activities include EPC execution of high-voltage and extra-high-voltage transmission lines and substations; development and strengthening of distribution networks from 33 kV to low-voltage levels, including underground and overhead cabling; construction and augmentation of air-insulated and gas-insulated substations; installation of distribution transformers; and implementation of government-led distribution modernisation initiatives such as smart metering, advanced metering infrastructure and SCADA integration under schemes including the Revamped Distribution Sector Scheme (“RDSS”).

The industry scope further extends to post-commissioning operations and maintenance services, comprising substation operation, preventive and breakdown maintenance, fault response, low-tension network management, metering support, streetlight upkeep and related utility services. These O&M activities represent an integral lifecycle component of the T&D ecosystem, supporting asset reliability, network availability and continuity of electricity supply.

Excluded from this definition are power generation balance-of-plant works, standalone renewable energy EPC (including solar and wind projects), battery energy storage system integration, electric vehicle charging infrastructure, railway electrification projects, and standalone equipment manufacturing or supply without EPC or service responsibility.

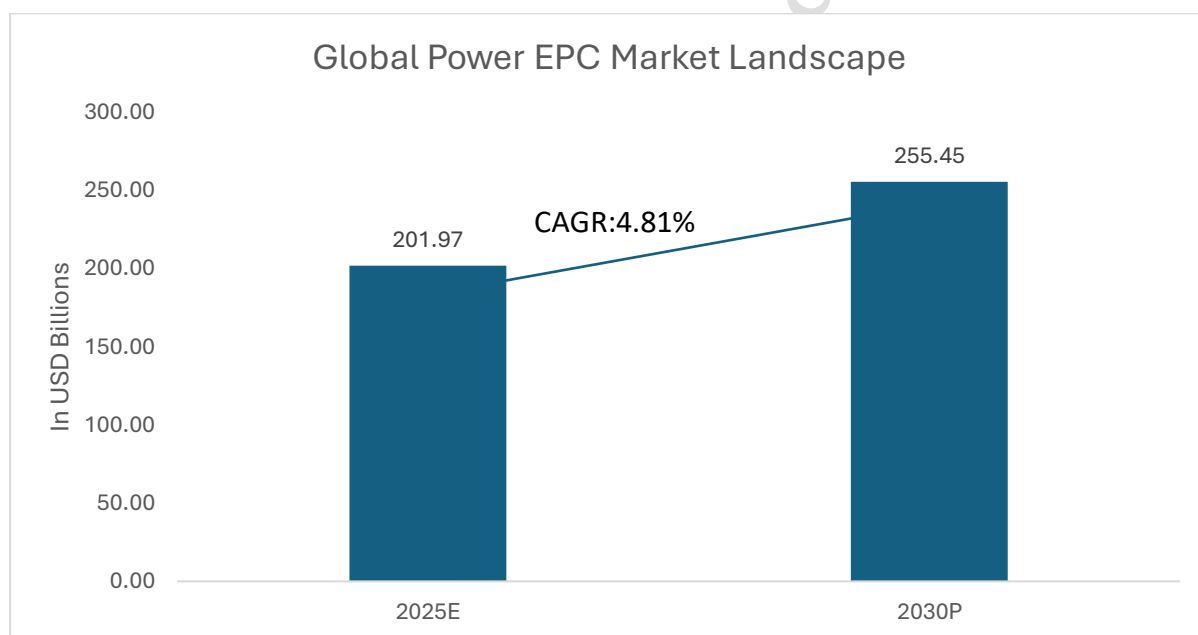
Accordingly, the industry is defined around regulated transmission and distribution infrastructure and associated lifecycle services, distinct from generation-side EPC and non-utility electrical applications.

5. Global and Indian Industry Outlook

Global Power EPC Overview

The global Power Engineering, Procurement and Construction (“Power EPC”) industry provides turnkey execution of electricity infrastructure, including transmission lines, substations, distribution networks and balance-of-system facilities supporting power generation assets. The sector underpins grid expansion, renewable energy evacuation and system reliability across developed and emerging markets.

The global Power EPC market is estimated at USD 201.97 billion in 2025 and is projected to reach USD 255.45 billion by 2030, registering a CAGR of 4.81%, driven primarily by grid modernisation, renewable capacity additions and high-voltage transmission development across Asia-Pacific, North America and the Middle East



Source: Infomerics Analytics & Research.

Global electricity consumption increased by approximately 4.3% in 2024, led by emerging economies including China and India. Renewable and nuclear sources accounted for nearly 80% of incremental generation capacity during the year. Further, cumulative renewable capacity additions are projected to exceed 4,500 GW between 2024 and 2030, necessitating large-scale transmission build-out and reinforcing long-term EPC demand visibility.

Growth in the Power EPC market is increasingly driven by investments in transmission networks, substations and grid modernisation rather than greenfield conventional generation, reflecting the scale of infrastructure required to integrate renewable capacity and enhance

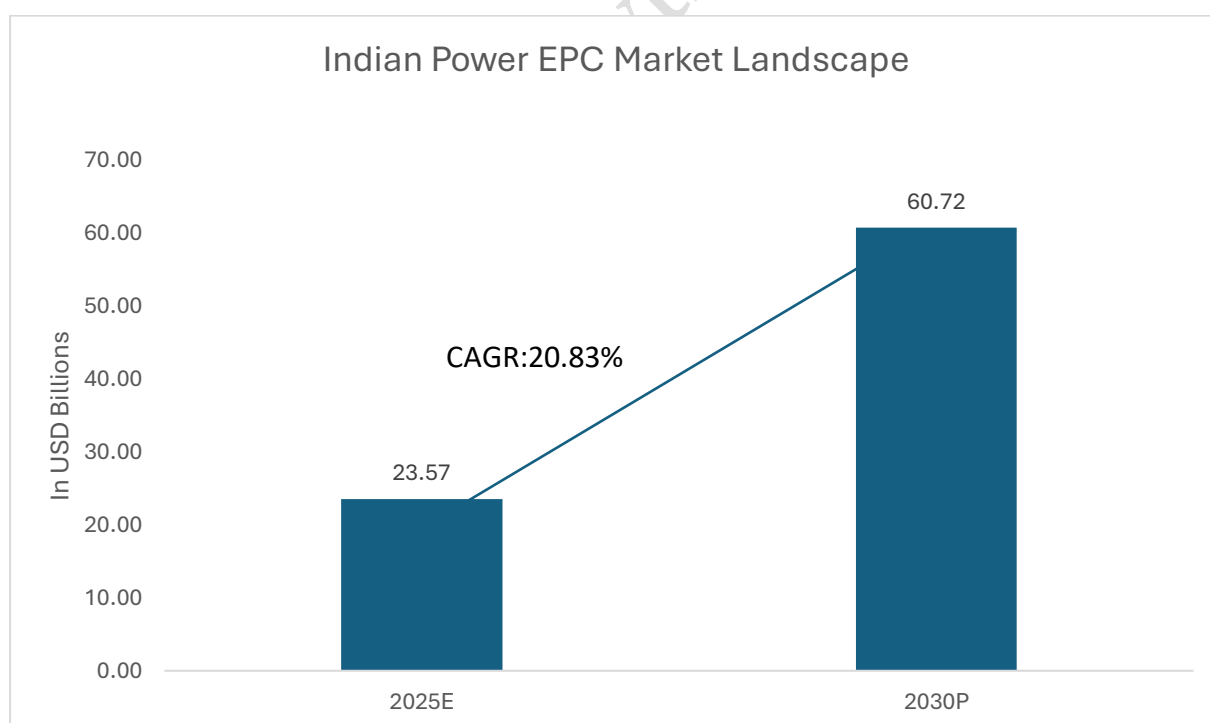
system resilience. Asia-Pacific remains the largest EPC market globally, supported by sustained grid expansion across India, China and Southeast Asia, followed by North America and the Middle East.

Concurrently, technological adoption—particularly High Voltage Direct Current (HVDC) systems, grid digitalisation, energy storage integration and AI-enabled predictive maintenance—is reshaping EPC execution models while aligning infrastructure development with global decarbonisation objectives.

Indian Power EPC Market Landscape

India's power sector is in a phase of sustained structural expansion, driven by rising electricity demand and large, pre-planned investments across generation, transmission and distribution infrastructure. Power Engineering, Procurement and Construction ("Power EPC") plays a central role in executing this build-out, particularly in high-voltage transmission systems and distribution network modernisation required to support incremental demand and renewable energy integration.

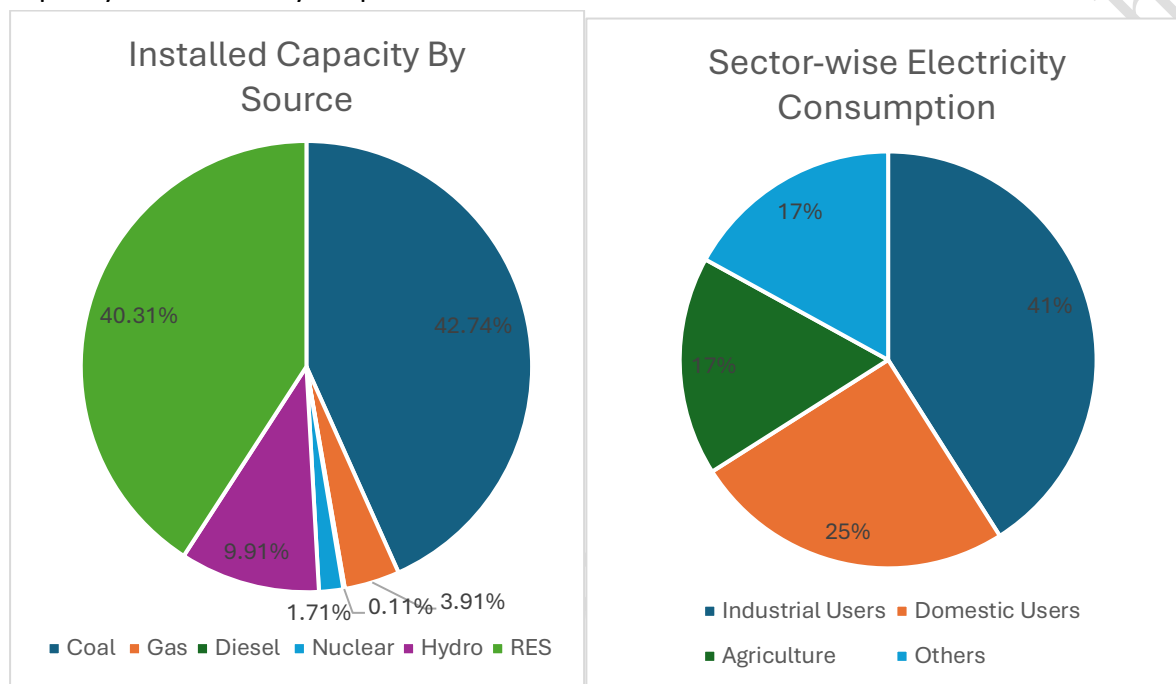
The Indian Power EPC market is estimated at USD 23.57 billion in 2025 and is projected to reach USD 60.72 billion by 2030, implying a CAGR of 20.83%.



Source: Infomerics Analytics & Research

Independent of private market sizing, Government of India planning documents provide clear visibility on the underlying physical expansion and capital investment that underpin EPC demand.

According to the Central Electricity Authority ("CEA"), India's gross electricity demand in FY 2024-25 reached approximately 1,694 TWh, up 17% from FY23 levels. Installed generation capacity has crossed 475 GW as of February 2026, with fossil fuels accounting for a little over half of total capacity and non-fossil sources—renewables, hydro and nuclear—forming the balance, reflecting a diversified but coal-dominant generation mix. CEA and the Ministry of Power recognise India as the world's third-largest power generation market by installed capacity and electricity output.



Source: CEA Dashboard (Central Electricity Authority)

The National Electricity Plan ("NEP") projects that gross electricity demand will rise from ~1,694 TWh in FY 2024-25 to a range of 2,060–2,699 TWh by 2030, implying CAGR 3.5-8.0%. Utility-level demand, including technical and commercial losses, is estimated at 2,039–2,454 TWh over the same period. Sector-wise consumption remains led by industrial users at approximately 41%, followed by domestic households at ~25% and agriculture at ~17%, together accounting for over 80% of total electricity demand. This consumption profile, combined with projected growth, necessitates sustained expansion and modernisation of transmission and distribution infrastructure to ensure reliable power delivery.

Transmission and Distribution Infrastructure – Scale and Growth

India operates one of the world's largest integrated electricity networks. The high-voltage transmission system spans 132 kV to 765 kV AC as well as ± 800 kV HVDC links, with Power Grid Corporation of India Limited managing over 90% of inter-state transmission capacity. As of early 2024, the national transmission network at 220 kV and above extended to approximately 4.8–4.9 lakh circuit kilometres ("ckm"), supported by total transformation capacity of about 12.25 lakh MVA (approximately 1,225 GVA).

CEA's National Electricity Plan – Transmission ("NEP-Transmission") sets out a detailed ten-year perspective plan for network strengthening and augmentation between FY 2022-23 and FY 2031-32. Over this period, planned additions include approximately:

- 1,91,474 ckm of transmission lines at 220 kV and above
- 1,274 GVA of transformation capacity at 220 kV and above
- 33.25 GW of HVDC bi-pole links

Inter-regional transmission capacity is projected to increase from about 119 GW currently to 143 GW by FY 2026-27 and further to 168 GW by FY 2031-32, enabling higher long-distance power transfers and improved regional balancing.

On a cumulative basis, the transmission network at 220 kV and above is targeted to expand from around 4.85 lakh ckm in 2024 to approximately 6.48 lakh ckm by 2032, while transformation capacity is expected to rise from about 1,251 GVA to roughly 2,342 GVA. NEP-Transmission estimates aggregate capital expenditure of approximately ₹9.12–9.15 lakh crore up to FY 2031-32 for transmission lines, substations and associated infrastructure, providing multi-year visibility on EPC opportunities in the transmission segment.

For the nearer term, CEA estimates that during FY 2022-23 to FY 2026-27 alone, India will need to add about 1,14,687 ckm of new transmission lines and approximately 7,76,330 MVA of transformation capacity at 220 kV and above, in addition to planned HVDC capacity, to meet projected peak demand and energy requirements.

On the distribution side, networks primarily operate between 400 V and 33 kV. State distribution companies ("DISCOMs") continue to face Aggregate Technical and Commercial ("AT&C") losses of around 20–22%, materially above global benchmarks. To address these structural inefficiencies, the Government of India launched the Revamped Distribution Sector Scheme ("RDSS") with a total outlay of approximately ₹3.03 lakh crore for FY 2021-22 to FY 2025-26. RDSS targets reduction of AT&C losses to 12–15% and elimination of the Average Cost of Supply–Average Revenue Realised ("ACS-ARR") gap through network augmentation, loss-reduction initiatives and system modernisation.

RDSS interventions include large-scale deployment of prepaid smart meters, feeder segregation, system metering, underground cabling, construction and augmentation of substations, installation of aerial bunched cables and distribution automation. These programmes translate directly into EPC activity, with DISCOMs awarding contracts covering design, supply, installation, testing and commissioning of distribution assets.

Operations and Maintenance (“O&M”) Services – Lifecycle Integration

Beyond project execution, India’s transmission and distribution ecosystem is witnessing a gradual shift toward lifecycle-oriented operations and maintenance (“O&M”) engagement, driven by the expanding scale and complexity of grid assets. With continued additions to high-voltage transmission networks, urban distribution systems and digital infrastructure under NEP-Transmission and RDSS, utilities are increasingly relying on outsourced service providers for routine operations, preventive maintenance and fault management to support network availability and asset reliability.

O&M services typically encompass substation operation, preventive and breakdown maintenance, fault localisation and restoration, low-tension network management, metering support services, streetlight maintenance and utility field operations. In distribution networks, contractors with established local presence are also engaged for feeder maintenance, loss-reduction activities and customer interface functions, enabling continuity of service across live networks.

The deployment of advanced metering infrastructure, SCADA systems and grid automation under RDSS expands the O&M scope from traditional asset upkeep to data-enabled network monitoring and performance management. Utilities are progressively adopting outcome-linked service frameworks, including uptime commitments and service-level agreements, integrating O&M more closely with network operations.

This reflects the structural integration of O&M services within transmission and distribution operations alongside EPC execution in India’s Power T&D ecosystem.

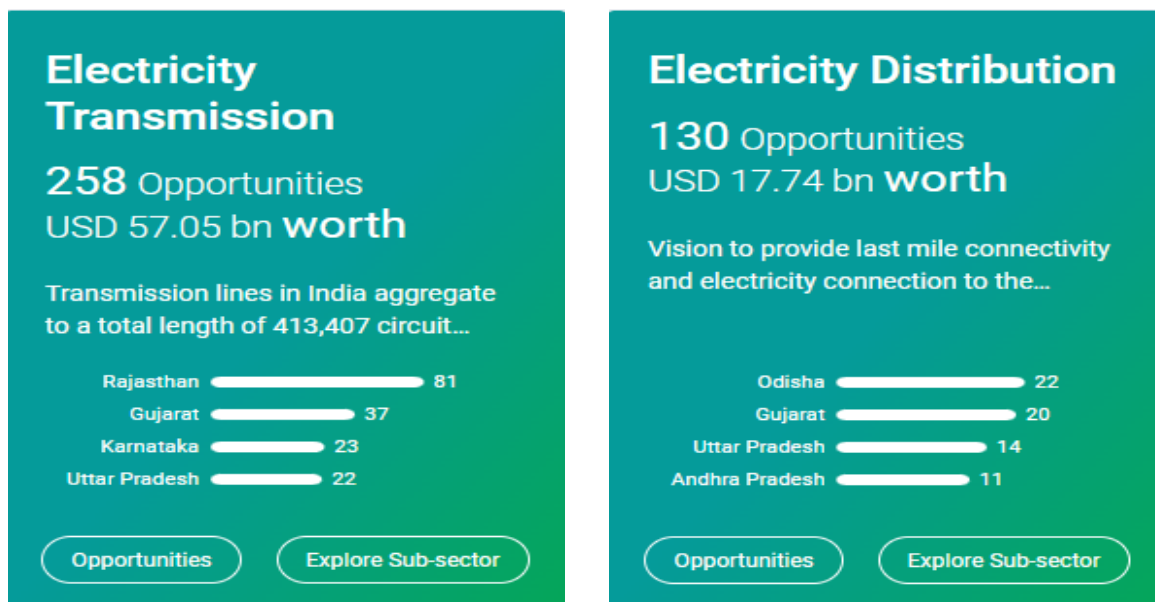
Investment Environment and Policy Support

The Government of India’s planning framework, anchored by CEA’s National Electricity Plan and Ministry of Power programmes, provides sustained visibility on EPC demand. NEP-Transmission’s planned investment of approximately ₹9.12–9.15 lakh crore in transmission infrastructure through FY 2031-32, together with RDSS’s ₹3.03 lakh crore allocation for distribution, defines a substantial, time-bound pipeline of competitively bid projects.

In parallel, India has adopted a national target of achieving 500 GW of non-fossil fuel-based installed capacity by 2030, requiring commensurate expansion of evacuation and delivery infrastructure. Programmes such as the Green Energy Corridor, PM-KUSUM (supporting decentralised renewable deployment and agricultural solarisation) and the National Infrastructure Pipeline further reinforce policy emphasis on electricity infrastructure development.

Union Budget 2026–27 has strengthened this trajectory by increasing central public capital expenditure to ₹12.2 lakh crore, with power, energy transition and associated logistics

infrastructure retained as priority sectors. This fiscal stance supports continued funding for central transmission utilities and related projects, complementing NEP-Transmission implementation and sustaining EPC order inflows.



Source: India Investment Grid (IIG), accessed February 2026

The National Infrastructure Pipeline (NIP) and India Investment Grid (IIG) further catalogue investable transmission and distribution projects across states. As of early 2026, IIG data indicates approximately 258 transmission opportunities valued at USD 57.05 billion and 130 distribution opportunities valued at USD 17.74 billion, with major concentration in states including Rajasthan (81 transmission projects), Gujarat (37 transmission; 20 distribution), Karnataka (23 transmission), Uttar Pradesh (22 transmission; 14 distribution), Odisha (22 distribution) and Andhra Pradesh (11 distribution). These project pipelines, spanning transmission line construction, substation development and last-mile connectivity, provide granular visibility into state-level EPC opportunities and underscore the breadth of investable infrastructure aligned with NEP-Transmission and RDSS implementation.

Power EPC Sector Outlook

Based on official CEA projections and Ministry of Power planning, India's Power EPC activity is supported by the following quantified infrastructure requirements:

- Projected increases in electricity demand and peak load through 2030 and beyond.
- Quantified expansion requirements for transmission lines, transformation capacity and HVDC systems.
- Large, time-bound capital outlays under NEP-Transmission and RDSS.

- Increasing adoption of operations and maintenance contracts linked to transmission and distribution assets.

Together, these factors indicate a defined pipeline of transmission and distribution projects anchored in government planning frameworks, covering high-voltage transmission, substations, HVDC infrastructure and distribution network augmentation.

Execution challenges include land acquisition, right-of-way constraints, multi-agency coordination and variations in state-level implementation capacity. National electricity planning documents and budgetary allocations provide quantified transmission and distribution infrastructure targets. Public investment programmes, renewable integration requirements and grid modernisation initiatives form the primary drivers of Power EPC activity in India.

6. Market Dynamics

6.1 Key Growth Drivers

India's Power Transmission and Distribution ("T&D") Engineering, Procurement and Construction ("EPC") and Operations & Maintenance ("O&M") industry is supported by a quantified, policy-led expansion of grid infrastructure, combined with distribution modernisation, renewable energy integration and increasing lifecycle outsourcing by utilities.

Under the National Electricity Plan – Transmission ("NEP-T") for FY2022–23 to FY2031–32, capital expenditure of approximately ₹9.12–9.15 lakh crore is envisaged toward inter-state and intra-state transmission lines, substations and HVDC systems. In parallel, the Revamped Distribution Sector Scheme ("RDSS") provides an outlay of ₹3.03 lakh crore through March 2028 for loss reduction, network strengthening and smart metering. Together, these programmes establish a multi-year EPC pipeline while materially expanding the installed base of power assets, structurally increasing long-term O&M requirements across transmission and distribution networks.

Industry activity is further supported by tender pipelines published by the Central Transmission Utility, State Transmission Utilities and the National Infrastructure Pipeline / India Investment Grid, which provide forward visibility across transmission corridors, substations and distribution projects, enabling capacity planning and geographic diversification by EPC contractors while supporting predictable transition of completed assets into O&M portfolios.

Market Drivers and Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Driver	Affected Verticals (T&D EPC + O&M)	1–2 Years	3–4 Years	5–7 Years
1. Transmission & transformation capex under NEP-T	EHV transmission lines, AIS/GIS substations, HVDC systems; substation O&M, line patrol, protection systems and asset monitoring	High	High	High
2. Distribution modernisation & RDSS loss reduction	Distribution EPC (feeders, substations, smart metering, automation); feeder upkeep,	High	High	High

	transformer maintenance, meter operations and network performance management			
3. Order book visibility from CTU/STU and IIG/NIP pipelines	Transmission, substations and distribution EPC across states, followed by progressive onboarding of commissioned assets into long-term O&M portfolios	High	High	High
4. Renewable evacuation, storage & grid balancing	Pooling substations, evacuation corridors, STATCOM/SVC and storage-linked EPC; grid balancing support, availability management and renewable interface O&M	Medium	High	High
5. Grid digitalisation (AMI, SCADA, ADMS, digital substations)	Smart meters, control systems, telecom/IT integration and digital substations; remote monitoring, predictive maintenance and software-led operations	Medium	High	High
6. Shift from item-rate to EPC / turnkey + O&M models	Integrated EPC for substations, HVDC and smart metering, combined with contractual O&M annuities and lifecycle asset management	Medium	Medium	High
7. Industrial, commercial & data-centre load growth	Dedicated feeders, high-reliability substations and underground cabling; high-availability O&M, rapid-response maintenance and uptime management	Medium	High	High

Source: Infomerics Analytics and Research

Detailed Commentary on Key Growth Drivers

1. Transmission and transformation expansion

NEP-Transmission provides for large-scale addition of extra-high-voltage transmission lines, transformation capacity at 220 kV and above, and HVDC corridors. These projects are predominantly executed through tariff-based competitive bidding and EPC contracts, directly benefiting transmission line EPC, GIS/AIS substation EPC and system integration segments. As these assets move into operation, they generate recurring O&M requirements including line patrol, substation maintenance, protection system testing and network monitoring over asset lifecycles.

2. Distribution modernisation under RDSS

RDSS focuses on feeder segregation, underground and aerial bunched cabling, substation augmentation, system metering and deployment of prepaid smart meters. Execution is increasingly structured as bundled EPC packages with post-commissioning maintenance obligations. This supports sustained distribution EPC activity while creating ongoing O&M demand in feeder upkeep, meter operations, outage management and network performance monitoring.

3. Renewable integration and grid balancing

India's target of 500 GW of non-fossil installed capacity by 2030 necessitates development of renewable evacuation corridors, pooling substations and strengthening of inter-regional transmission links. Integration of variable renewable energy is increasing technical complexity across substations and transmission systems, creating EPC scope in STATCOM/SVC installations, protection upgrades and storage-linked infrastructure. These assets subsequently require long-term O&M for grid stability, availability management and reliability assurance.

4. Digital grid deployment

Utilities are progressively incorporating advanced metering infrastructure, SCADA/ADMS platforms, IEC-61850 communication systems and digital substations into core project specifications. Smart metering and automation are now embedded within EPC scopes rather than treated as ancillary works, expanding EPC opportunity into telecom integration and control systems. Post-commissioning, these digital assets require continuous remote monitoring, predictive maintenance and software support, strengthening recurring O&M revenues.

5. Shift toward integrated EPC and lifecycle contracts

Across substations, smart metering and HVDC projects, utilities are transitioning from item-rate execution to integrated EPC and EPC-plus-O&M models. This increases project ticket sizes during construction while introducing annuity-type O&M revenues over asset lifecycles, improving long-term revenue visibility for contractors with execution and maintenance capabilities.

6. Industrial, commercial and data-centre load growth

Expansion of manufacturing clusters, industrial corridors, metros, IT parks and data centres is driving demand for dedicated feeders, high-reliability substations, redundant power supply systems and underground cabling. These projects typically involve higher technical specifications and are followed by long-term O&M arrangements, supplementing utility-led EPC with private-sector infrastructure requirements.

These drivers link policy-backed capital expenditure with expanding operational infrastructure. Industry growth is therefore supported by concurrent EPC execution across transmission, substations, distribution and digital grid systems, alongside structurally rising O&M demand generated by the growing installed asset base.

6.2 Market Restraints

Execution of Power Transmission and Distribution (“T&D”) Engineering, Procurement and Construction (“EPC”) and Operations & Maintenance (“O&M”) contracts in India is subject to structural constraints relating to working capital intensity, regulatory approvals, availability of specialised manpower and counterparty credit exposure, particularly to state-owned utilities. These factors influence project timelines, cash flow cycles and operating efficiency across both construction and lifecycle services.

Market Restraints and Impact Assessment

(All values represent directional impact based on industry estimates and qualitative analysis)

Restraint	Affected Verticals (T&D EPC + O&M)	1–2 Years	3–4 Years	5–7 Years
1. Working capital intensity and elongated receivable cycles	Material-heavy EPC (transmission lines, substations, transformers); utility-linked O&M collections across feeders, substations and smart metering	High	Medium	Medium
2. Right-of-way, land acquisition and regulatory approvals	Transmission line EPC, urban/GIS substations; deferred commencement of associated O&M contracts	High	High	Medium
3. Availability of specialised technical manpower	EHV/HVDC EPC, GIS substations, digital grid systems; protection, SCADA and advanced O&M operations	Medium	High	High
4. Financial position of state distribution utilities	Distribution EPC billing, RDSS-linked works; feeder maintenance, transformer O&M and smart metering collections	High	Medium	Medium

Source: Infomerics Analytics and Research

Detailed Restraint Commentary

1. Working capital intensity

T&D EPC projects require substantial upfront procurement of towers, conductors, transformers, switchgear and control systems, while billing is milestone-based and typically linked to physical progress. Utility contracts commonly involve receivable cycles

of approximately 90–180 days, even where letters of credit and performance guarantees are in place. This results in elevated working capital requirements, particularly during peak construction phases. O&M contracts, especially in distribution networks, also face elongated collection cycles, impacting operating cash flows despite relatively stable service revenue profiles.

2. Right-of-way and land acquisition delays

Transmission line construction and substation development remain dependent on multiple approvals, including forest clearances, RoW negotiations and voltage-level permissions. Industry experience indicates that a material proportion of line projects encounter schedule overruns due to land acquisition and local consent issues, particularly in densely populated or forested regions. Such delays defer EPC revenue recognition and push back the transition of completed assets into the O&M phase, affecting both construction timelines and downstream service contracts.

3. Specialised technical manpower constraints

Execution of extra-high voltage (EHV), HVDC and digital substation projects requires certified commissioning engineers, protection relay specialists, SCADA integrators and experienced O&M technicians. The increasing adoption of GIS substations, IEC-61850 systems and advanced automation platforms has raised skill thresholds across both EPC and operations. Industry assessments indicate a persistent gap in availability of trained personnel for complex projects, which can affect mobilisation speed, commissioning schedules and quality of ongoing asset maintenance.

4. Utility counterparty exposure

A significant portion of transmission and distribution EPC and O&M revenues is derived from state-owned utilities. Elevated receivables and periodic payment delays from distribution companies, driven by structural financial imbalances, directly impact EPC cash flows and O&M collections, particularly for RDSS-linked distribution works and smart metering operations. This concentration risk necessitates higher working capital buffers and reinforces the importance of client diversification and disciplined credit management.

While the Indian T&D EPC and O&M industry benefits from policy-backed investment visibility, execution remains influenced by working capital intensity, regulatory clearances, specialised manpower availability and the financial position of utility counterparties. These restraints primarily affect project cash flow cycles, commissioning timelines and scalability of O&M portfolios. Consequently, operating performance across the sector is shaped not only by capital deployment but also by the ability of contractors to manage liquidity, regulatory interfaces, technical resources and counterparty risk in parallel.

7. Government Initiatives and Policy Support

The Government of India has implemented targeted policy measures to strengthen power transmission and distribution (“T&D”) infrastructure, with a dual focus on capacity expansion and operational efficiency. These initiatives create sustained demand across Engineering, Procurement and Construction (“EPC”) activities, which are primarily one-time, capital-expenditure driven, and Operations & Maintenance (“O&M”) services, which generate recurring, annuity-linked revenues through lifecycle management of transmission and distribution assets. Collectively, these policies support grid expansion, loss reduction, renewable evacuation and digitalisation of distribution networks, directly benefiting contractors engaged in high-voltage transmission, substations, distribution systems and network operations.

Key Power T&D EPC and O&M Policy Initiatives

Policy Initiative	Policy Details	Industry Impact – EPC	Industry Impact – O&M
National Electricity Plan – Transmission (2022–32)	Addition of ~1,91,474 circuit km of transmission lines, ~1,274 GVA transformation capacity and ~33.25 GW HVDC links (220 kV & above) by FY2031–32; estimated capital outlay of ₹9.12–9.15 lakh crore; inter-regional transfer capacity targeted to increase from ~119 GW to ~168 GW	Creates a multi-year EPC pipeline for EHV/HV transmission lines, AIS/GIS substations and HVDC corridors through tariff-based competitive bidding by central and state transmission utilities	Post-commissioning O&M for substations and transmission assets, including protection systems, condition-based maintenance and asset monitoring, supporting multi-year annuity contracts over asset lifecycles
Revamped Distribution Sector Scheme (RDSS) (2021–28)	Outlay of ₹3.03 lakh crore; AT&C loss reduction from 21.91% (FY21) to 12–15% (FY26+); deployment of ~4.1 crore prepaid smart meters; feeder	Turnkey EPC packages for smart metering infrastructure, distribution strengthening, substation works and	Long-term O&M for feeders, transformers and AMI systems, including preventive maintenance, fault restoration and network performance

	separation, underground cabling, substation augmentation and network automation	underground cabling awarded by DISCOMs	monitoring under performance-linked distribution contracts
Green Energy Corridors (Phase I & II)	Phase I: ~13,970 ckm lines and ~19 GW renewable evacuation; Phase II: ~10,750 ckm lines and ~27,500 MVA substations for ~20 GW by FY2026	EPC scope for renewable evacuation lines, pooling/green substations, STATCOM/SVC installations and HVDC integration	O&M of evacuation corridors and green substations to ensure availability and grid stability for variable renewable generation
PM Gati Shakti National Master Plan	Integrated planning of transmission corridors with highways, railways and ports; inter-state transmission additions and state-level project pipelines published on India Investment Grid	Improves right-of-way coordination and accelerates EPC execution timelines for linear T&D infrastructure	Facilitates structured access for O&M teams across integrated corridors, enabling faster restoration and lifecycle asset management
PM-KUSUM Scheme	Target of ~34,800 MW decentralised solar capacity by March 2026 through feeder solarisation and distributed plants	EPC opportunities in feeder-level solarisation and decentralised grid-connected solar projects	O&M for rural feeders and decentralised solar assets, creating distributed maintenance and uptime management requirements
Viability Gap Funding for Battery Energy Storage Systems (2025)	₹54,000 crore VGF for ~30 GWh BESS capacity; waiver of inter-state transmission charges till June 2028	EPC scope for grid-scale storage integration with transmission substations	O&M contracts for BESS facilities, including monitoring, performance optimisation and preventive maintenance
Draft National Electricity Policy, 2026	Projects cumulative power sector investment of ~₹50 lakh crore by 2032; mandates single-	Reinforces EPC demand for intra-state and inter-state T&D expansion	Policy emphasis on loss reduction and tariff rationalisation strengthens

	digit AT&C losses, cost-reflective tariffs and competitive bidding for transmission		outsourcing of distribution operations, billing efficiency and network O&M
Union Budget 2026–27	Central public capex of ~₹12.2 lakh crore with continued allocations for transmission, storage and renewable evacuation	Sustains EPC ordering by central utilities and state agencies	Supports funding availability for long-term asset maintenance and utility modernisation programs

Regulatory Framework Relevant to Power EPC and O&M

Regulation / Standard	Requirement	EPC Relevance	O&M Relevance
Electricity Act, 2003	Competitive bidding for transmission; tariff regulation by CERC/SERCs	Drives cost-competitive EPC awards	Enables regulated O&M contracts for licensed utilities and private operators
CEA Technical Standards (2022)	Design, testing and safety norms for T&D infrastructure	Raises technical qualification thresholds for EPC contractors	Establishes maintenance benchmarks for substations and networks
RDSS Operational Guidelines	Mandatory AT&C loss trajectory with penalties for non-performance	Accelerates EPC execution for loss-reduction works	Creates sustained demand for feeder maintenance, smart metering operations and preventive upkeep
Gati Shakti RoW Guidelines	Single-window RoW clearance for transmission projects	Reduces EPC project delays	Facilitates faster fault access and restoration during O&M
REC / PFC Financing Norms	Structured debt financing for T&D and RDSS projects	Supports EPC working capital	Enables financing of long-term O&M concessions and utility service contracts

DSM Regulations (2024)	Penalises grid deviations; mandates ancillary services	Requires EPC integration of grid-stability equipment	Drives O&M demand for real-time monitoring and grid balancing
Smart Meter Standards (2024)	ABT-compliant prepaid meters with AMI integration	Standardised EPC installation scope	Long-term AMI operations, billing support and meter maintenance

Industry Implications and Outlook – Power T&D EPC and O&M

Government-backed initiatives—including NEP-Transmission (2022–32), RDSS (2021–28), Green Energy Corridors, PM-KUSUM, BESS Viability Gap Funding, and PM Gati Shakti—have structurally created long-term demand across Engineering, Procurement & Construction (“EPC”) and Operations & Maintenance (“O&M”) verticals.

EPC is anchored in capex-driven contracts for transmission lines, GIS/AIS substations, HVDC corridors, renewable evacuation infrastructure, and distribution feeder augmentation, executed through competitive bidding and turnkey arrangements. O&M expands through mandated AT&C loss reduction, smart meter operations, DISCOM reforms, GIS substation management, and technology-enabled services, including Fast Response Teams (FRTs) for fault detection, emergency restoration, preventive maintenance, and lifecycle asset management. This complementary structure—EPC establishing physical infrastructure, O&M ensuring reliability—yields dual revenues: project-based EPC and annuity-style O&M. Policies and regulatory frameworks, including CEA technical standards, CERC tariff regulations, RDSS loss benchmarks, REC/PFC financing norms, Gati Shakti RoW guidelines, DSM regulations, and smart meter standards, provide execution discipline, secure asset access, and support recurring operational streams, mitigating risks such as RoW delays and multi-agency coordination.

Forward Visibility & Key Metrics (Policy-Anchored):

- EPC Pipeline: ₹12+ lakh crore FY27–32 (NEP-T ₹9.15 lakh crore; RDSS and distribution projects)
- O&M Revenue Mix: 20–30% recurring revenues FY26+ via lifecycle and performance-linked contracts
- Sector Milestones: AT&C loss reduction to 12–15% by FY26; ~1.91 lakh ckm transmission lines and 168 GW inter-regional transfer capacity by FY32

Growth in India’s Power T&D sector is policy-driven, with integrated EPC and O&M players positioned to capture sustained inflows across transmission networks, substations, distribution infrastructure, and renewable evacuation systems.

8. Technology & Digital Transformation

The Power Transmission & Distribution (T&D) industry in India is undergoing a major technological shift, driven by digitalization, automation, AI, Industry 4.0 tools, and advanced grid technologies. These improvements enhance grid reliability, operational efficiency, renewable integration, and predictive maintenance, while creating parallel growth opportunities across:

- **EPC:** Capital-intensive construction of smart infrastructure.
- **O&M:** Recurring, performance-linked digital operations and lifecycle management.

Key Technology Initiatives – Dual EPC/O&M Impact

1. Smart Transmission Infrastructure

- **Overview:** Digital substations, PMUs, advanced conductors, and Industry 4.0 sensors improve grid stability and efficiency.
- **EPC impact:** Turnkey execution of smart towers, GIS/AIS substations, HVDC/converter stations, PMU installation, and civil works.
- **O&M impact:** SCADA/RTU maintenance, condition-based monitoring, cybersecurity, and AI-based grid stability analytics.

2. Smart Metering & Distribution Automation

- **Overview:** ~4.1 crore prepaid meters, DT/feeder monitoring, AMI networks to reduce losses and improve billing efficiency.
- **EPC impact:** ₹25,000 crore turnkey installation packages, feeder automation, substation upgrades, IoT-enabled integration.
- **O&M impact:** AMI operations, Fast Response Teams (<2hr), predictive fault detection, DISCOM loss reduction, AI-driven billing optimization.

3. India Energy Stack (IES)

- **Overview:** Unified digital platform with APIs, digital asset IDs, and real-time analytics for all grid assets.
- **EPC impact:** Edge computing infrastructure, sensor and communication network deployment.
- **O&M impact:** AI outage prediction, cross-utility data management, virtual control centers, and managed digital operations.

4. Utility Intelligence Platform Pilots

- **Overview:** Load forecasting, vegetation analytics, and AI/ML-based fault detection (pilots in Mumbai, Gujarat, Delhi).
- **EPC impact:** Sensor network rollout and smart grid hardware installation.

- **O&M impact:** 24×7 virtual grid operations, SLA-based performance management, and vegetation-induced outage prevention.

5. Advanced Transmission Technologies

- **Overview:** HVDC ($\pm 800\text{kV}$), FACTS devices, synchronous condensers, dynamic line rating, and ultra-high-voltage transmission lines.
- **EPC impact:** Construction of converter stations, HVDC integration, and grid-stabilizing equipment installation.
- **O&M impact:** Availability-linked maintenance (99.5% uptime target), AI-driven stability monitoring, and predictive performance analytics.

6. Renewable Integration & Flexibility Platforms

- **Overview:** VRE forecasting, BESS optimization, virtual power plants, DER management, and AI-driven energy scheduling.
- **EPC impact:** WAMS systems, DER interconnection infrastructure, and renewable asset integration.
- **O&M impact:** Renewable dispatch optimization, grid flexibility management, predictive storage operations, and digital twin-enabled monitoring.

EPC vs O&M – Technology Differentiation

Aspect	EPC (One-Time Capex)	O&M (Recurring / Annuity)
Revenue Character	Project-based execution linked to government and utility capital expenditure under transmission expansion and distribution modernisation programs	Contracted, multi-year service revenues linked to asset availability, response time and network performance
Typical Contract Duration	18–36 months turnkey (design, supply, erection and commissioning)	5–15 years, performance-linked operations and maintenance
Technology Focus	Physical infrastructure deployment including EHV/HV transmission lines, GIS/AIS substations, HVDC systems, smart meters, automation hardware and Industry 4.0 field equipment	Digital operations including SCADA, AMI platforms, automated fault detection, IoT-based condition monitoring, digital twins and predictive analytics
Key Deliverables	Construction and commissioning of transmission corridors, substations, feeder upgrades and grid-integration assets	Uptime SLAs, preventive maintenance, fault restoration, AT&C loss monitoring, smart meter operations and lifecycle

Advantages for Integrated EPC/O&M Players

- **GIS Substation O&M:** Predictive maintenance using thermal imaging and IIoT extends asset life 15–20%.
- **Fast Response Teams:** Drone-assisted fault detection and AI analytics reduce outages ~25%.
- **DISCOM Network Management:** AMI billing efficiency and loss monitoring create opportunities for privatization and improved operational performance.
- **Digital Transformation Metrics:** RoW survey times cut ~40%; vegetation-related faults minimized; AI optimizes energy scheduling.
- **Industry 4.0 Integration:** IoT sensors, cloud-edge computing, robotics-assisted maintenance, and AI orchestration position EPC/O&M contractors as strategic lifecycle operators managing ₹50,000+ crore T&D assets.

Integrated EPC/O&M firms can capture full lifecycle value, combining capex deployment of smart infrastructure with digital, AI-enabled annuity services, delivering operational resilience, reliability, and efficiency across transmission, substations, distribution networks, and renewable integration.

9. PESTLE Analysis of the Industry

The Power EPC industry in India operates within a rapidly evolving macroeconomic, regulatory, and technological environment. Sector growth is driven by rising electricity demand, large-scale transmission expansion, distribution modernisation, renewable energy integration, and digital transformation of grid infrastructure. EPC contractors and O&M service providers are influenced by a range of political, economic, social, technological, legal, and environmental factors that shape project pipelines, execution timelines, cost structures, and long-term competitiveness.

Factor	Description	Implications for EPC & O&M Industry
Political	- National Electricity Plan (Transmission) envisages ~₹9.15 lakh crore investment through FY2031–32, including ~1.91 lakh ckm of new transmission lines, ~1,270 GVA transformation capacity, ~33 GW HVDC links, and inter-regional capacity expansion to ~168 GW. - Revamped Distribution Sector Scheme (RDSS) outlay of ~₹3.03 lakh crore supports smart metering, feeder/DT monitoring and network strengthening. - Draft National Electricity Policy 2026 aligns sector planning with 500 GW non-fossil capacity by 2030 and net-zero by 2070. - Central PSUs (PGCIL, NTPC) and State DISCOMs remain primary procurers; projects awarded largely through competitive bidding.	Provides long-term visibility for transmission, distribution and renewable evacuation EPC orders. Policy-backed programs sustain multi-year tender pipelines, while PSU/DISCOM dominance influences payment cycles, bidding intensity, and O&M outsourcing models.
Economic	- Peak demand of ~242.49 GW was met in FY2025–26 with negligible shortage; peak demand is projected to reach ~277 GW by FY2026–27. - Electricity demand growth of ~6–6.5% is supported by urbanisation, industrial expansion, data centres, EV adoption and emerging green hydrogen ecosystems. - EPC projects are capital intensive, relying on funding from PFC/REC, banks and green finance instruments. - Input cost volatility (steel, aluminium, copper, transformers) and forex movements affect margins under fixed-price contracts.	Sustains strong EPC order inflows across T&D and renewable integration. Financial discipline and working-capital management are critical. O&M contracts provide relatively stable annuity revenues, partially offsetting EPC cyclicity and commodity price risk.
Social	- Universal electrification achieved under Saubhagya and DDUGJY; RDSS continues last-mile strengthening and reliability improvement. - Rapid urbanisation, smart city development and rising appliance penetration increase per-capita electricity consumption. - Growing public preference for reliable and green power accelerates renewable integration and grid automation.	Expands distribution EPC opportunities in urban and semi-urban areas and supports recurring O&M demand for network reliability, smart metering operations and customer service performance.
Technological	Grid modernisation includes HVDC corridors, GIS substations, synchrophasors, SCADA/DMS, AMI smart meters, battery energy storage and pumped storage integration.	EPC contractors must integrate digital-ready designs, modular construction and storage-compatible infrastructure.

	• Adoption of Industry 4.0 practices such as IoT sensors, drones, LiDAR surveys, prefabricated structures, digital twins and AI-based monitoring. • Increasing deployment of advanced conductors, dynamic line rating and automation for loss reduction and grid stability.	O&M providers increasingly deploy AI-driven predictive maintenance, remote monitoring and virtual control centres, improving asset uptime and lifecycle efficiency.
Legal & Regulatory	• Electricity Act, 2003 governs licensing, tariffs, open access and competitive procurement. • CEA Technical Standards (2022) prescribe design, safety and protection norms, including mandatory requirements for high-voltage GIS installations. • Tariff-based competitive bidding (TBCB), standard bidding documents, LC/escrow mechanisms and RoW guidelines regulate project execution. • Renewable regulations (RPOs, PPAs, RECs) influence bankability of evacuation and grid projects.	Regulatory compliance creates entry barriers and standardises EPC execution. Experience with central and state regulations supports pan-India project delivery. Contract frameworks directly affect cash-flow visibility and risk allocation across EPC and O&M engagements.
Environmental	• National targets of 500 GW non-fossil capacity by 2030 and net-zero emissions by 2070 drive renewable generation, transmission evacuation and storage deployment. • Environmental clearances, forest diversion and land acquisition requirements add execution complexity. • Climate risks are prompting grid hardening, underground cabling and redundancy planning.	Expands EPC opportunities in renewable evacuation, resilient transmission and distribution upgrades. Environmental compliance increases project complexity while creating specialised demand for climate-adaptive infrastructure and long-term O&M services.

10. Competitive Landscape

India's Power Transmission, Distribution, Engineering, Procurement & Construction (EPC), and Operations & Maintenance (O&M) industry operates within a tender-driven competitive framework led by central utilities, state electricity boards, and distribution companies. Contract awards are primarily determined through technical qualification and price-based evaluation, with competition shaped by execution capability, regulatory compliance, financial strength, and lifecycle service capacity.

Project opportunities originate from national transmission expansion programs and distribution strengthening initiatives, covering turnkey EPC delivery alongside long-term O&M frameworks. Competitive positioning depends on a participant's ability to execute complex grid infrastructure projects and support ongoing network operations across geographically dispersed regions.

10.1 Key Factors Shaping Competition

- **Project Execution and Lifecycle Delivery**

Competition in EPC is driven by demonstrated experience in transmission lines, substations, and distribution infrastructure across multiple voltage classes. Execution of Extra-High Voltage (EHV) and HVDC projects requires specialised engineering, logistics planning, and site management capabilities.

Contractors with integrated procurement arrangements for towers, conductors, transformers, insulators, and switchgear benefit from coordinated material flow and execution scheduling. Bid evaluations typically consider delivery timelines, cost control, and prior performance on comparable project scopes. EPC activities represent the primary revenue stream for most participants, while several contractors also provide integrated delivery models covering design, construction, commissioning, and post-commissioning O&M services.

- **O&M Capability and Network Operations**

O&M represents a parallel competitive segment encompassing routine maintenance, inspections, fault rectification, and asset management for transmission and distribution networks. Service providers are assessed on operational readiness, availability of trained field personnel, preventive maintenance systems, and compliance with reliability and safety requirements prescribed by utilities.

Long-term O&M contracts emphasise response time, uptime metrics, documentation standards, and adherence to statutory maintenance schedules, creating qualification requirements distinct from construction-focused EPC credentials.

- **Technical and Engineering Depth**

Technical capability remains a core determinant across both EPC and O&M engagements. Market participants are evaluated on experience in HVAC and HVDC systems, substation engineering, protection and control systems, and distribution network integration.

Execution credentials across varied terrain and voltage levels support eligibility in utility tenders, while O&M providers are required to demonstrate operational systems for asset inspection, maintenance planning, and regulatory reporting.

- **Digital and Operational Systems**

Utilities increasingly require the use of digital tools for project tracking, network monitoring, and asset documentation, including supervisory control systems, geographic information systems, and smart metering platforms. These systems support EPC execution management as well as ongoing network operations, particularly under distribution reform programs.

- **Regulatory Compliance and Qualification Frameworks**

Participation in EPC and O&M contracts is governed by prequalification criteria relating to technical experience, financial thresholds, completed project references, and statutory compliance. Contractors are required to adhere to standards prescribed by the Central Electricity Authority, applicable grid codes, environmental regulations, and safety norms. Procurement eligibility is also influenced by localisation requirements applicable to public-sector and utility-led projects.

- **Financial Capacity and Execution Footprint**

Financial strength remains a key competitive factor given the working capital intensity of EPC contracts and the long-duration nature of O&M engagements. Utilities evaluate bidders on net worth, banking arrangements, and ability to furnish performance guarantees.

Geographic operating presence, availability of local workforces, and familiarity with state-level utility procedures further influence competitiveness, particularly for geographically dispersed projects.

10.2 Competitive Strategies

- **Integrated Project and Service Delivery**

Participants increasingly adopt integrated operating models combining engineering, procurement, construction, commissioning, and post-commissioning O&M within unified delivery frameworks. Maintaining in-house design, project management, and electrical integration capabilities enables tighter control over timelines, costs, and quality, particularly in high-voltage transmission corridors and complex substation projects.

Integrated EPC–O&M structures also support continuity across construction and operational phases, allowing contractors to leverage construction-stage knowledge for maintenance planning, fault management, and asset optimisation, while enabling utilities to engage a single counterparty across the project lifecycle.

- **Technology Adoption and Capability Development**

Firms pursue technical collaborations with equipment manufacturers and grid-technology providers to strengthen capabilities in HVDC systems, GIS substations, automation platforms, and digital protection infrastructure. These partnerships support participation in technology-intensive transmission, distribution modernisation, and renewable evacuation projects.

Parallel investments in workforce training, specialised equipment, and digital platforms—including project management systems, ERP, asset monitoring tools, and predictive maintenance frameworks—enhance execution efficiency and operational visibility across both EPC delivery and O&M services.

- **Service Expansion and Lifecycle Engagement**

Beyond construction activity, participants increasingly expand into long-term O&M contracts covering substations, transmission lines, and distribution networks. Lifecycle services such as preventive maintenance, system upgrades, automation retrofits, and performance monitoring support recurring revenue streams and extended client engagement.

This shift from project-only delivery toward integrated lifecycle support allows firms to diversify revenue sources while assisting utilities in improving asset availability, reducing outage risks, and maintaining compliance with statutory reliability benchmarks.

10.3 Barriers to Entry

- **Capital Intensity and Working Capital Requirements**

Entry into the Power EPC and T&D segment requires significant upfront investment in construction equipment, project infrastructure, safety systems, and high-value electrical components. Milestone-based billing structures and retention mechanisms result in elevated working capital requirements over extended execution timelines. O&M participation, while comparatively less asset-intensive, involves mobilisation of technical personnel, monitoring systems, testing equipment, and spare-parts inventories under multi-year service arrangements, limiting participation by entities with constrained balance sheets.

- **Technical Qualification and Multidisciplinary Execution Capability**

Participation in high-voltage transmission, substation engineering, and distribution projects requires demonstrated multidisciplinary engineering capability across system design, protection and control, commissioning, and grid integration. EPC contractors must establish credentials across voltage classes and terrain conditions, while O&M providers are required to demonstrate operational readiness for preventive maintenance, fault response, asset inspection, and regulatory reporting. Absence of proven execution references restricts eligibility for utility tenders.

- **Prequalification Frameworks and Track Record Requirements**

Market entry is governed by utility and funding-agency prequalification criteria covering technical experience, financial thresholds, completed project references, safety certifications, quality systems, and statutory compliance. Tender evaluations place emphasis on historical delivery performance, while O&M contracts additionally assess asset-handling experience and service continuity. Building such credentials typically requires multi-year engagement, resulting in extended gestation periods for new entrants.

- **Regulatory Compliance and Statutory Obligations**

Participants are required to comply with standards prescribed by the Central Electricity Authority, applicable grid codes, environmental regulations, labour laws, and safety norms. Adherence to localisation requirements, inspection protocols, and documentation standards further increases compliance complexity, particularly for public-sector and utility-led projects.

- **Execution Risk and Performance Guarantee Obligations**

EPC contracts involve exposure to execution risks including right-of-way delays, site readiness issues, material logistics, and coordination with multiple stakeholders. Utilities typically mandate performance bank guarantees and liquidated damages provisions, requiring contractors to maintain adequate banking lines and risk absorption capacity.

- **Geographic Presence and Local Operating Infrastructure**

Competitiveness is influenced by the ability to mobilise regional workforces, establish site offices, and navigate state-level utility procedures. Firms without distributed execution footprints face disadvantages in geographically dispersed transmission corridors and distribution modernisation programs.

- **Access to Skilled Manpower and Specialist Resources**

Availability of trained engineers, certified technicians, and safety-compliant field personnel remains a constraint, particularly for EHV transmission, substation automation, and O&M services. Development of such workforce capabilities involves sustained training investments and operational scale.

10.4 Consolidation Trends

- **Integration of EPC, T&D, and O&M Platforms**

The sector is witnessing gradual consolidation as participants seek greater execution scale, technical breadth, and financial capacity. Firms increasingly combine EPC, T&D, and O&M capabilities within unified organisational structures, supporting turnkey grid delivery alongside long-term asset management.

This integrated approach enables utilities to engage a single counterparty across construction and operational phases, while allowing contractors to improve coordination, resource utilisation, and continuity of service.

- **Strategic Partnerships and Capability Aggregation**

Participants pursue mergers, acquisitions, and strategic alliances to aggregate regional EPC contractors, T&D specialists, and O&M service providers. These combinations consolidate engineering resources, equipment fleets, procurement systems, and support functions, while facilitating entry into specialised areas such as substation automation, condition-based maintenance, and grid digitalisation.

Technical collaborations with global OEMs and grid-technology providers further support access to advanced systems, localisation of manufacturing, and development of domestic engineering expertise.

- **Scale Efficiency and Financial Resilience**

As consolidation progresses, a limited number of larger integrated entities account for a growing share of large-value and multi-package contracts awarded by central utilities and public-sector customers. Increased scale improves supplier bargaining power, supports centralised procurement, and enables standardised execution practices across projects.

Broader order books spanning EPC and O&M services enhance access to bank funding and guarantee facilities required for milestone-based EPC contracts and performance-linked O&M agreements. Utilities and lenders generally prefer counterparties with demonstrated execution capability and balance-sheet strength, reinforcing the competitive position of consolidated platforms.

10.5 Key Industry Players

India's electrical EPC and power distribution ecosystem comprises specialist transmission contractors, diversified infrastructure EPC platforms and integrated manufacturing-plus-execution players. Key participants operating across transmission, substations and distribution infrastructure include Rajesh Power Services Limited and Parth Electricals & Engineering Limited.

1. Rajesh Power Services Limited

Rajesh Power Services Limited is an Ahmedabad-based electrical EPC contractor primarily focused on power transmission and distribution infrastructure. The company undertakes turnkey execution of underground and overhead cable networks and GIS/AIS substations, covering the full project lifecycle including engineering and consultancy, procurement, construction, testing and commissioning. Its operating emphasis is on HV/EHV underground cabling, urban distribution networks and substation EPC, supplemented by operations and maintenance services such as cable testing, fault location and utility support. Rajesh Power services state transmission utilities, distribution companies, private utilities and industrial customers, positioning itself as a specialist player in underground cabling and substation-led power infrastructure projects.

2. Parth Electricals & Engineering Limited

Parth Electricals & Engineering Limited follows an integrated manufacturing and EPC model within the power distribution and substation equipment ecosystem. The company manufactures medium- and high-voltage electrical products such as ring main units, compact substations, switchgear panels and control systems, while also providing EPC and specialised services for substations and underground power cable networks. Its execution capabilities include installation, testing and commissioning of AIS/GIS substations and associated electrical infrastructure. Parth serves utility, industrial, smart-city and renewable-linked projects, combining in-house equipment manufacturing with project delivery to participate across both the product and execution layers of the power T&D value chain.

These players reflect the competitive structure of India's electrical EPC landscape, spanning specialist transmission and underground cabling contractors, diversified infrastructure EPC platforms and hybrid manufacturing-execution models. The sector remains predominantly project-driven, with demand anchored in utility-led transmission and distribution upgrades, renewable integration and urban infrastructure modernisation. While larger EPC platforms compete on scale and geographic reach, specialist contractors and integrated electrical players continue to capture opportunities in distribution networks, substations and lifecycle services, supported by ongoing grid augmentation, feeder strengthening and power reliability initiatives.

Comparative Analysis of Products Offered

Capability / Service	GV Electricals Ltd	Parth Electricals & Engineering Ltd	Rajesh Power Services Ltd
Transmission line EPC (HV/EHV overhead)	– (limited exposure)	– (not line-focused)	✓ (220 kV EHV T&D focus)
Distribution network EPC (11/33 kV OH & UG)	✓ (core segment)	✓ (11/33/66 kV AIS/GIS + UG systems)	✓ (11/22/66 kV UG & MVCC OH)
Substation EPC (AIS/GIS)	✓ (up to EHV class)	✓ (AIS up to 220 kV; GIS up to 400 kV)	✓ (220/66 kV GIS/AIS)
Renewable integration / solar-linked electrical works	✓ (solar plant O&M and substations)	✓ (solar substations and cable packages)	– (no major public solar focus)
Underground HV/EHV cabling	✓ (11–33 kV and select higher levels)	✓ (11–220 kV cable EPC and services)	✓ (core niche, 66–220 kV UG)
LT distribution, LT-ABC, metering, AMR, billing	✓ (strong utility services vertical)	– (primarily MV/HV focus)	✓ (cable testing, fault location and select utility support; not full metering/billing)
Long-term O&M / AMC for utilities	✓ (33/11 kV substations, LT networks, streetlighting and billing operations)	✓ (equipment servicing and refurbishment)	✓ (O&M, cable testing and fault rectification)
In-house manufacturing of electrical equipment	– (execution and services focused)	✓ (RMUs, CSS/PSS, panels and control systems)	– (pure EPC/O&M)
Smart city / urban infrastructure	✓ (streetlighting and urban distribution)	✓ (RMUs and PSS deployments)	✓ (urban UG cabling and substations)
International project footprint	✓ (Middle East – Dubai GIS substation)	– (India-focused)	– (primarily Gujarat/India)
End-to-end lifecycle integration (design–EPC–O&M)	✓ (strong in distribution and substations)	✓ (manufacturing + EPC + services)	✓ (design–EPC–O&M in T&D)

Note: Information presented is based on publicly available data, including company websites and disclosures.

10.6 Company Positioning – GV Electricals Limited

GV Electricals Limited (“GVE” or the “Company”) is an electrical EPC and operations and maintenance (O&M) contractor engaged in power distribution and substation infrastructure, serving renewable (solar) and conventional power segments across India and select overseas markets. Incorporated in 1985 and headquartered in Mumbai, Maharashtra, the Company operates under a project- and contract-based model covering design, engineering, procurement, construction, and ongoing operations and maintenance of electrical networks and assets.

The Company undertakes EPC execution across low-tension to extra-high-tension systems, including turnkey delivery of EHV/HV/LV substations, 33/11 kV grid substations, underground and overhead distribution networks, transformers, ring main units (RMUs), switchgear, and related electrical infrastructure, supported by in-house engineering and consultancy services.

A material component of GVE’s business comprises operations and maintenance services. The Company undertakes annual maintenance contracts for substations and distribution networks, including feeder and line maintenance, transformer overhauling, streetlighting operations, metering services, consumer complaint handling, and fault rectification. These O&M engagements provide recurring revenue visibility and support utilities and large consumers in outsourcing post-commissioning operational responsibilities alongside capital execution.

GVE services a customer base comprising public and private power distribution companies, EPC contractors, OEMs, and industrial and commercial enterprises. Customers include Tata Power (Delhi and Mumbai), BSES Rajdhani, Dakshin Gujarat Vij Company Limited (DGVCL), Uttar Gujarat Vij Company Limited (UGVCL), Maharashtra State Electricity Distribution Company Limited (MSEDCL), CESC group entities, India Power, Adani Power, ABB, Siemens, Schneider Electric, CG Power, Philips, Voltas, Larsen & Toubro, Medanta, and Air India, among others. This reflects exposure across regulated distribution utilities, industrial electrical systems, and large infrastructure facilities.

The Company executes projects across multiple Indian states and select international locations. Operations are supported by an in-house workforce and owned construction and testing equipment, enabling deployment across diverse geographic and regulatory environments.

GVE undertakes assignments through multiple contract structures, including lump-sum turnkey contracts, rate contracts, public-private partnership (PPP) and BOOT formats, and long-term annual maintenance contracts. Internal functions include business development, techno-commercial bidding, project management, field execution, customer service, finance,

and compliance, supported by documented processes for safety management, quality control, labour compliance, and statutory reporting.

Through its combined EPC execution and O&M service offerings in power distribution and substation systems, diversified institutional and industrial customer base, and multi-location operating presence, GV Electricals Limited operates as an electrical infrastructure contractor within the power transmission and distribution ecosystem, with primary activity concentrated in distribution networks, substations, and associated operations and maintenance services.

GV Electricals Limited operates in the electrical EPC and O&M segment with activities spanning power distribution infrastructure, substations, and utility maintenance services. While EPC contracts contribute to project-based revenues, the O&M segment provides recurring operational engagements across substations and distribution assets. The Company's business model is characterised by mixed contract formats, utility-focused clientele, and geographically distributed execution. Future performance remains linked to order inflows, continuity of maintenance contracts, execution efficiency, and working-capital management within a competitive power infrastructure environment.

10.7 Financial Performance Analysis

The financial performance analysis of GV Electricals Limited provides an overview of its operational scale, profitability trends, liquidity position, and capital structure over FY 2023, FY 2024, and FY 2025, based on audited financial information.

Figures are in INR lakhs (Except for ratios and percentages)

Key Indicators (in INR Lakhs)	GV Electricals Limited		
	FY 2023	FY 2024	FY 2025
Total Operating Income	10422.24	11179.56	13346.97
Total Income	10442.93	11203.17	13359.02
EBITDA	627.68	703.59	975.25
EBITDA Margin (%)	6.02	6.29	7.31
PAT	381.47	596.00	526.30
PAT Margin (%)	3.65	5.32	3.94
Current Ratio (Times)	1.74	2.04	1.87
Tangible Net worth	1728.27	2158.10	2806.24
Total Debt	450.12	494.74	752.19
Debt Equity Ratio (Times)	0.26	0.23	0.27
ROCE (%)	55.05	27.74	28.55
Return on Net worth (%)	44.14	30.67	21.20

Source: FY23, FY24 and FY25 audited financial statements as provided by the Company.

Formula Used:

- EBITDA: Total Operating Income - Operating Expenses (excluding Depreciation & Amortisation, Interest, and Taxes)
- EBITDA Margin: (EBITDA/Total Operating Income) *100
- PAT Margin: (Profit after Tax/Total Income) *100
- Current Ratio: Current Assets /Current Liabilities
- Tangible Net Worth: Share Capital + Reserve & Surplus – Intangible Assets -Deferred Tax Assets – Misc Expenditure not written off – Revaluation Reserves
- Return on Net Worth (RONW): (Profit After Tax /Average Tangible Net Worth) *100
- Total Capital Employed: Fixed Assets + Intangible Assets +Net Working Capital
- Return on Capital Employed (ROCE): (Earnings before Interest & Taxes/Average Capital Employed) *100

The financial performance of GV Electricals Limited over FY 2023 to FY 2025 reflects steady revenue expansion, gradual margin improvement, stable liquidity, and balance sheet strengthening, with growth primarily supported by core operating activities.

The Company's Total Operating Income increased from INR 10,422.24 lakh in FY 2023 to INR 11,179.56 lakh in FY 2024, and further to INR 13,346.97 lakh in FY 2025, indicating consistent growth in business volumes over the review period. Total Income closely tracked operating income, rising from INR 10,442.93 lakh in FY 2023 to INR 11,203.17 lakh in FY 2024 and INR 13,359.02 lakh in FY 2025.

Operating profitability improved in absolute terms across the period. EBITDA increased from INR 627.68 lakh in FY 2023 to INR 703.59 lakh in FY 2024, and further to INR 975.25 lakh in FY 2025. Correspondingly, EBITDA margin expanded from 6.02% in FY 2023 to 6.29% in FY 2024 and 7.31% in FY 2025.

Net profitability showed a mixed trend. Profit After Tax rose from INR 381.47 lakh in FY 2023 to INR 596.00 lakh in FY 2024, before moderating to INR 526.30 lakh in FY 2025. PAT margin increased from 3.65% in FY 2023 to 5.32% in FY 2024, followed by a moderation to 3.94% in FY 2025.

Liquidity remained stable. The current ratio improved from 1.74 times in FY 2023 to 2.04 times in FY 2024, before moderating to 1.87 times in FY 2025, indicating adequate short-term liquidity and disciplined working capital management.

The Company's tangible net worth strengthened from INR 1,728.27 lakh in FY 2023 to INR 2,158.10 lakh in FY 2024 and INR 2,806.24 lakh in FY 2025, supported by retained earnings and balance sheet accretion.

In terms of leverage, total debt increased from INR 450.12 lakh in FY 2023 to INR 494.74 lakh in FY 2024 and INR 752.19 lakh in FY 2025. Despite the increase in absolute debt, the debt-equity ratio remained moderate at 0.26 times in FY 2023, 0.23 times in FY 2024, and 0.27 times in FY 2025, reflecting prudent leverage management.

Return indicators moderated over the period as the capital base expanded. ROCE declined from 55.05% in FY 2023 to 27.74% in FY 2024 and 28.55% in FY 2025, while Return on Net Worth decreased from 44.14% to 30.67% and 21.20%, respectively.

GV Electricals Limited demonstrates consistent revenue growth, improving operating margins, stable liquidity, and progressive balance sheet strengthening over FY 2023–FY 2025. While PAT and return ratios moderated in FY 2025 amid capital expansion and margin normalisation, the Company's financial profile reflects operational scalability, controlled leverage, and improving net worth, supporting its capacity to sustain growth in the electrical EPC and infrastructure services segment.

10.8 Peer Benchmarking Analysis

The financial risk profile of GV Electricals Ltd has been assessed in comparison with Parth Electricals & Engineering Ltd and Rajesh Power Services Ltd, based on FY2025 audited financials.

Figures are in INR lakhs (Except for Ratios and percentages)

Key Indicators (in INR Lakhs)	GV Electricals Ltd	Parth Electricals & Engineering Ltd	Rajesh Power Services Ltd
	FY 2025	FY 2025	FY 2025
Total Operating Income	13346.97	17467.17	110743.63
Total Income	13359.02	17620.12	111466.01
EBITDA	975.25	1753.26	13374.69
EBITDA Margin (%)	7.31	10.04	12.08
PAT	526.30	1011.69	9336.63
PAT Margin (%)	3.94	5.74	8.38
Current Ratio (Times)	1.87	1.17	1.58
Tangible Net worth	2806.24	4031.47	26027.06
Total Debt	752.19	3332.66	5492.36
Debt Equity Ratio (Times)	0.27	0.83	0.21
ROCE (%)	28.55	42.67	81.42
Return on Net worth (%)	21.20	50.19	71.75

Source: Company filings and publicly available consolidated financial statements.

Scale of Operations

In FY2025, GV Electricals Ltd reported Total Operating Income of INR 13,346.97 lakh, positioning it as the smallest entity within the peer set. Parth Electricals & Engineering Ltd reported operating income of INR 17,467.17 lakh, while Rajesh Power Services Ltd operated at a significantly larger scale with INR 110,743.63 lakh. GV Electricals' comparatively lower revenue base indicates limited scale and diversification relative to Rajesh Power Services, while remaining broadly comparable to Parth Electricals among regional EPC peers.

Profitability and Operating Efficiency

GV Electricals reported an EBITDA margin of 7.31% in FY2025, lower than Parth Electricals (10.04%) and Rajesh Power Services (12.08%), translating into EBITDA of INR 975.25 lakh, compared with INR 1,753.26 lakh and INR 13,374.69 lakh, respectively.

PAT margin stood at 3.94%, below Parth Electricals (5.74%) and Rajesh Power Services (8.38%). GV Electricals generated PAT of INR 526.30 lakh, reflecting positive internal accruals, albeit materially lower than Rajesh Power Services (INR 9,336.63 lakh), driven by its substantially larger execution scale.

Liquidity Position

As of FY2025, GV Electricals reported a current ratio of 1.87 times, higher than Parth Electricals (1.17 times) and Rajesh Power Services (1.58 times), indicating relatively stronger short-term liquidity and working capital coverage within the peer group.

Capital Structure and Leverage

Total debt of GV Electricals stood at INR 752.19 lakh, with a debt–equity ratio of 0.27 times, reflecting moderate leverage. This compares favourably with Parth Electricals (0.83 times) and is marginally higher than Rajesh Power Services (0.21 times).

Tangible net worth of GV Electricals amounted to INR 2,806.24 lakh, lower than Parth Electricals (INR 4,031.47 lakh) and Rajesh Power Services (INR 26,027.06 lakh), consistent with its smaller operating scale.

Return Indicators

GV Electricals reported ROCE of 28.55% and Return on Net Worth of 21.20% in FY2025, lower than Parth Electricals (ROCE 42.67%, RoNW 50.19%) and Rajesh Power Services (ROCE 81.42%, RoNW 71.75%). The comparatively lower returns reflect GV Electricals' modest margin profile and capital efficiency relative to larger peers.

GV Electricals Ltd exhibits a stable FY2025 financial profile characterised by modest operating scale, positive profitability, comparatively strong liquidity, and controlled leverage. While its revenue base, margins, and return indicators trail Rajesh Power Services Ltd and Parth Electricals & Engineering Ltd, the Company maintains good short-term liquidity and a balanced capital structure.

10.9 SWOT Analysis

Strengths	Weaknesses
Established national T&D infrastructure ecosystem India's power sector is supported by an extensive transmission and distribution network and a mature EPC ecosystem capable of executing LT to EHV projects, including substations, feeders, switchgear and distribution systems across multiple geographies. Standardised engineering frameworks enabling scalable execution Well-defined technical standards for transmission lines, substations and distribution assets allow EPC contractors to replicate project designs and execution models across states, supporting operational scalability. Integrated EPC and O&M industry structure The sector operates across both project execution and operations and maintenance, enabling a combination of one-time EPC revenues and recurring O&M income linked to asset upkeep and network performance. Policy-led investment visibility Grid augmentation, distribution strengthening and renewable integration programmes continue to release EPC and O&M opportunities, providing medium-term demand visibility for T&D contractors. Growing institutionalisation of O&M services Utilities and urban bodies increasingly outsource maintenance of substations, feeders, metering systems and streetlighting, supporting the development of a structured O&M market alongside EPC.	High working-capital intensity Power EPC projects are characterised by milestone-based billing, retention money and extended receivable cycles, particularly for utility-linked contracts, resulting in elevated working-capital requirements. Margin pressure in tender-driven procurement Most T&D EPC and O&M contracts are awarded through competitive bidding, with limited scope for pricing differentiation in standard substation and feeder works. Dependence on utility financial health Contract awards, execution pace and payment timelines remain closely linked to the financial position of state discoms and public-sector utilities. Operational complexity across multi-location projects Simultaneous execution across dispersed sites increases coordination requirements across civil, electrical, testing and commissioning activities, elevating execution risk. Fragmentation in O&M markets While large EPC projects are relatively consolidated, O&M services remain regionally fragmented, with multiple local operators competing primarily on cost.

Opportunities	Threats
• Continued expansion of transmission and distribution networks Ongoing investments in substations, feeders, underground cabling and last-mile connectivity are expected to sustain demand for T&D EPC services. • Renewable energy evacuation and grid reinforcement Integration of renewable generation requires new transmission corridors, substation upgrades and distribution-level strengthening, creating incremental EPC and O&M opportunities. • Distribution modernisation and automation Deployment of smart meters, AMI, SCADA, GIS-based network management, LT-ABC networks and underground cabling is expanding the scope of work beyond conventional EPC into automation, protection and control systems. • Scaling of performance-linked O&M contracts Discoms and municipalities are increasingly adopting outsourced models for network maintenance, metering support, billing assistance and streetlighting, with a gradual shift toward performance-based frameworks. • Urbanisation and infrastructure-led demand Smart cities, industrial clusters, data centres and logistics hubs require dedicated power infrastructure, supporting geographic and segmental diversification for EPC and O&M providers. • Digital enablement of project execution and asset management Adoption of digital project management, condition monitoring and predictive maintenance tools offers potential efficiency gains and service differentiation within O&M.	• Sustained competitive intensity The presence of large national EPC players alongside regional contractors continues to exert pressure on tender margins and win rates. • Input cost volatility Fluctuations in copper, aluminium, steel and logistics costs can adversely impact profitability, particularly under fixed-price EPC contracts. • Policy and regulatory uncertainty Changes in procurement frameworks, tariff structures or utility reform timelines may affect project approvals and order inflows. • Execution and safety risks High-voltage operations and live-network work involve inherent technical and workforce risks, with potential financial and reputational implications. • Counterparty concentration risk Heavy reliance on utilities and government-linked entities exposes EPC and O&M players to payment delays and project deferrals. • Technology-driven disruption As utilities adopt digital asset management, remote monitoring and analytics platforms, traditional EPC–O&M models may face pricing pressure unless integrated with technology-led services.

11. Future Outlook

India's Power EPC industry is closely aligned with national electricity planning and grid modernisation objectives, with sector activity primarily driven by government-led transmission expansion, distribution strengthening, renewable integration programmes and increasing outsourcing of operations and maintenance ("O&M") services. Transmission and distribution EPC contractors support the development of high-voltage transmission lines, substations and distribution networks required for power evacuation, loss reduction and reliability improvement, while O&M contractors undertake ongoing maintenance of substations, feeders, transformers, metering infrastructure and streetlighting networks.

Industry visibility is anchored by policy-backed initiatives including the National Electricity Plan – Transmission ("NEP-T") and the Revamped Distribution Sector Scheme ("RDSS"), together with infrastructure investments under the National Infrastructure Pipeline and PM Gati Shakti. NEP-T envisages capital expenditure of approximately ₹9.12–9.15 lakh crore towards transmission infrastructure up to FY 2031–32, while RDSS provides an outlay of ₹3.03 lakh crore for distribution network strengthening, loss reduction and associated O&M activities. These programmes translate into sustained EPC activity across transmission lines, transformation capacity, smart metering, automation systems and last-mile connectivity, alongside O&M contracts for network upkeep, metering operations and performance monitoring.

Under RDSS, utilities are implementing feeder and distribution transformer ("DT") metering, energy audit services and smart metering programmes, with increasing deployment of third-party O&M agencies for feeder monitoring, outage management and prepaid metering operations. Structural demand for T&D infrastructure is supported by rising electricity consumption, urbanisation, expanding industrial requirements and increasing data-centre capacity, alongside India's renewable capacity targets. Integration of large-scale solar and wind generation, hybrid projects and emerging battery energy storage systems necessitates development of evacuation corridors, strengthening of inter-regional transmission links and deployment of advanced substation infrastructure, increasing both the scale and technical complexity of EPC execution and subsequent O&M requirements.

The sector is also undergoing gradual technology integration, including adoption of GIS substations, SCADA platforms, digital protection relays, advanced distribution management systems and prepaid smart meters under RDSS. As a result, EPC scope is expanding beyond conventional civil and electromechanical works towards integrated system engineering,

automation and digital connectivity, while O&M scope is broadening to include remote monitoring, condition-based maintenance and performance-linked service contracts.

Procurement frameworks such as tariff-based competitive bidding, Central Electricity Authority technical standards and RDSS performance benchmarks continue to formalise contracting processes and elevate compliance requirements for both EPC and O&M services. At the same time, project execution remains subject to land acquisition, right-of-way clearances, environmental approvals and the financial position of state distribution utilities, reinforcing the importance of disciplined project management and counterparty diversification.

Commercially, the transmission and distribution EPC segment is characterised by large-ticket, multi-year projects supported by phased grid expansion and recurring network upgrades. Utility investment programmes provide continuity of project flow, while standardisation of designs and modular construction practices are increasingly adopted to improve execution efficiency and O&M service delivery.

The Power Transmission and Distribution EPC and O&M industry remain an integral component of India's power infrastructure development and energy transition, with sector activity shaped by government planning, grid modernisation requirements, renewable integration needs and the progressive outsourcing of O&M functions by discoms and utilities.

Yours Faithfully,



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