Industry Report on EPC in Power Transmission & Distribution Infrastructure in India

March 24, 2026

Prepared for

Absolute Projects (India) Limited (APIL)

Commercial in Confidence

Disclaimer

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Abbreviations

Abbreviation / Term	Full Form	Definition/Description
NPCIL	Nuclear Power Corporation of India Limited	A Government of India enterprise responsible for the design, construction, operation, and maintenance of nuclear power plants in India
PV	Photovoltaic	Technology that converts sunlight directly into electricity using semiconductor materials
GW	Gigawatt	Unit of power, commonly used to express large-scale installed generation capacity
DISCOM	Distribution Company	Entity responsible for electricity distribution to end consumers within a licensed area
PGCIL	Power Grid Corporation of India Limited	Central Transmission Utility of India responsible for planning, implementation, operation, and maintenance of the inter-state transmission system
T&D	Transmission & Distribution	Segment of the power sector responsible for transmitting electricity from generators and distributing it to end consumers
STUs	State Transmission Utility	State-designated entity responsible for planning, development, operation, and maintenance of the intra-state transmission system
HVDC	High Voltage Direct Current	Power transmission technology using direct current, typically deployed for long-distance, bulk power transfer with lower transmission losses and improved grid stability
SCADA	Supervisory Control and Data Acquisition	Centralized digital system used for real-time monitoring, control, and data acquisition of transmission and distribution assets

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DDUGJY	Deendayal Upadhyaya Gram Jyoti Yojana	Government of India scheme aimed at strengthening rural power distribution infrastructure and providing reliable electricity supply to rural households
AT&C	Aggregate Technical & Commercial	A comprehensive measure of power distribution losses, covering both technical losses (energy dissipation in networks) and commercial losses (theft, billing inefficiencies, and collection gaps)
RDSS	Revamped Distribution Sector Scheme	Government of India scheme aimed at improving the operational and financial performance of DISCOMs through loss reduction, infrastructure modernization, smart metering, and efficiency enhancement
ADMS	Advanced Distribution Management System	Integrated software platform used by DISCOMs to monitor, control, and optimize distribution networks in real time
BU	Billion Units	Unit of electrical energy equal to 1 billion kilowatt-hours (kWh), commonly used in India to express large-scale electricity generation, consumption, or sales
PLI	Production Linked Incentive	Government of India scheme that provides financial incentives to manufacturers based on incremental production and sales, aimed at boosting domestic manufacturing, improving competitiveness, and reducing import dependence
PPAs	Power Procurement Agreement	A long-term contract under which a buyer procures electricity from a power generator at agreed tariffs, quantities, and terms
CERC	Central Electricity Regulatory Commission	Statutory regulatory authority established under the Electricity Act, 2003

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HTLS	High Temperature Low Sag	Advanced transmission conductor technology designed to operate at higher temperatures with significantly lower sag compared to conventional conductors
EHV	Extra High Voltage	Transmission voltage levels, used for long-distance, bulk power transfer
BESS	Battery Energy Storage System	System that stores electrical energy in batteries and releases it when required to support grid stability, renewable integration, and peak demand management
PPP	Public–Private Partnership	Project delivery model where a government entity partners with a private sector participant to finance, develop, operate, and/or maintain public infrastructure or services
TBCB	Tariff-Based Competitive Bidding	Competitive mechanism for awarding transmission projects based on tariff discovery through bidding

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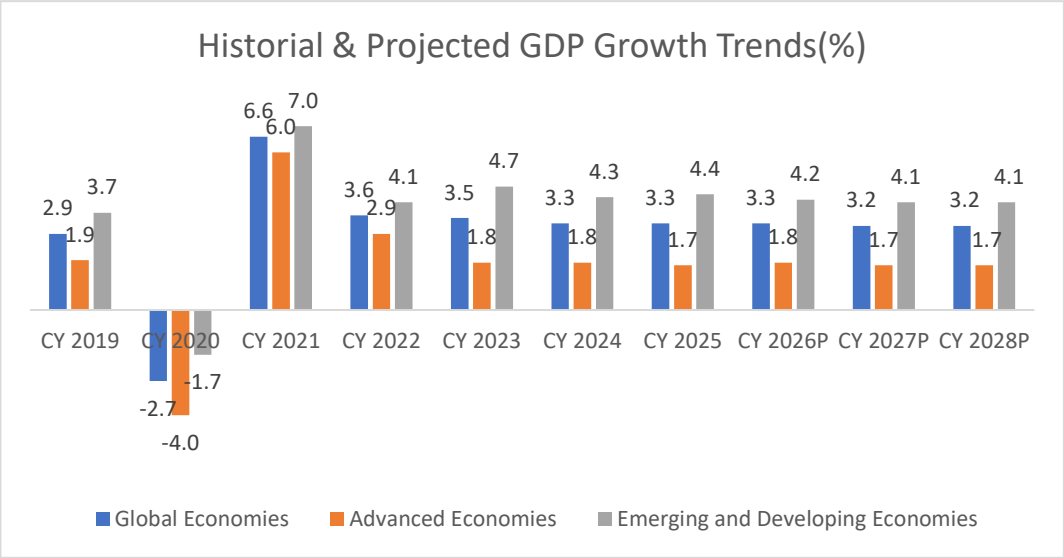
Global Macroeconomic Scenario

Global Economic Overview

Global growth is projected to remain resilient at 3.3 percent in 2026 and at 3.2 percent in 2027. The forecast reflects a slight upward revision for 2026 and no change for 2027 compared with that in the October 2025 World Economic Outlook (WEO)[1]. This steady performance on the surface results from the balancing of divergent forces. Headwinds arising from shifting trade policies are offset by tailwinds from rapidly expanding technology-related investment—particularly in artificial intelligence (AI)—with the impact more pronounced in North America and Asia than in other regions. Additionally, fiscal and monetary support, broadly accommodative financial conditions, and strong private-sector adaptability continue to underpin global economic resilience.



Source – IMF Global GDP Forecast Release January 2026

*Note CY 2028 projection is taken from October 2025(World Economic Outlook)

Note: Advanced Economies and Emerging & Developing Economies are as per the classification of the World Economic Outlook (WEO). This classification is not based on strict economic criteria and has evolved over time. It comprises 40 countries in the Advanced Economies category, including the G7 (the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada) and selected Eurozone members (Germany, Italy, France, etc.). The group of emerging and developing economies (156) comprises all economies not classified as Advanced Economies (e.g., India, China, Brazil, Malaysia).

Historical and Projected GDP Growth

GDP growth across major regions was mixed trend during 2024–25. While growth in several regions—including Emerging and Developing Asia as well as Latin America and the Caribbean—is expected to slow further in 2026, performance remains uneven across geographies. In Emerging and Developing Asia (comprising economies such as India, China, Indonesia, and Malaysia), GDP growth is

[1] https://www.imf.org/-/media/files/publications/weo/2026/january/english/text.pdf

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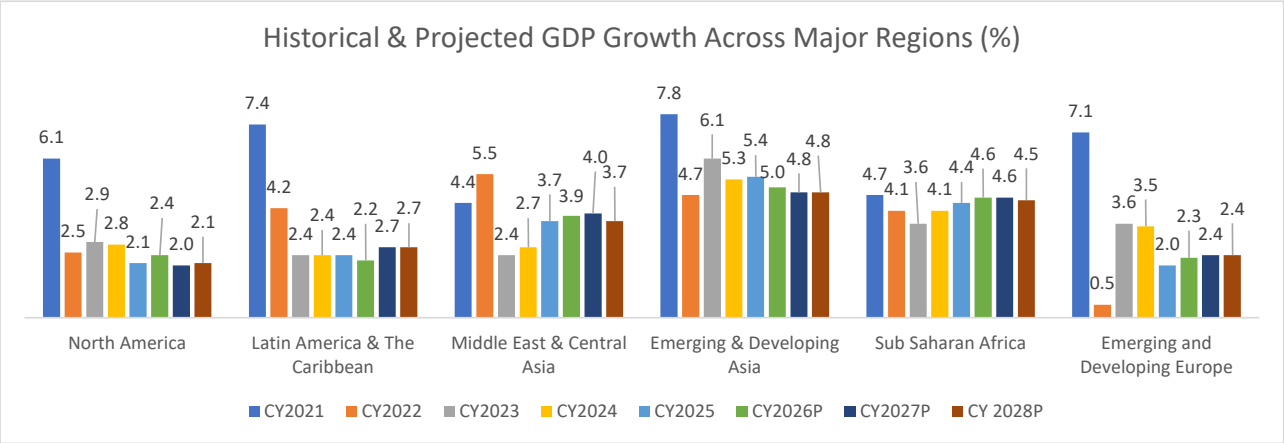
projected to moderate to 5.4% in 2026, compared with 5.3% in the previous year. Similarly, in Latin America and the Caribbean, growth is expected to ease to 2.2% in 2026, before rebounding to 2.7% in 2027 as countries in the region approach potential output from differing cyclical positions.



Source-IMF World Economic Outlook January 2026 update.

*Note CY 2028 projection is taken from October 2025(World Economic Outlook)

By contrast, growth in the Middle East and Central Asia is projected to accelerate, rising from 3.7% in 2025 to 3.9% in 2026 and further to 4.0% in 2027. This acceleration is supported by higher oil output, resilient domestic demand, and ongoing structural reforms. Likewise, growth in Sub-Saharan Africa is expected to strengthen, rising from 4.4% in 2025 to 4.6% in both 2026 and 2027. However, according to the IMF World Economic Outlook, growth is projected to moderate slightly to 4.5% in 2028, driven by ongoing macroeconomic stabilization and reform efforts in several key economies. Meanwhile, in Emerging and Developing Europe, the sharp slowdown to 2.0% in 2025 is expected to reverse, with the region's economies projected to expand at an average rate of 2.3% in 2026 and 2.4% in both 2027 and 2028. Across most regions, this recovery also reflects the diminishing effects of recent shifts in global trade policies.

Global Economic Outlook

Since the October 2025 World Economic Outlook (WEO), trade tensions have continued to ease, although they remain subject to occasional flare-ups. A dispute between China and the United States over exports controls of semiconductors and rare earth minerals was followed by a truce that reduced bilateral tariffs until November 2026 and introduced a pause on export controls.

In addition, US authorities removed tariffs on some agricultural products for all countries, offsetting the higher tariffs on certain sectors that were previously announced and are now in effect. As a result, the overall US effective tariff rate remains broadly unchanged from the level projected in October 2025 WEO although changes for specific countries are significant. The US Supreme Court is widely expected to deliver a decision in early 2026 regarding the president's use of the International

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Emergency Economic Powers Act. At the same time, newly signed bilateral trade and other agreements, often including substantial investment and purchase commitments with limited public disclosure, have added further complexity. Although policy uncertainty has declined since October, it remains considerably higher than in January 2025.

Global growth in the third quarter of 2025 decelerated to 2.4 percent on an annualized basis, exceeding expectations; however, upside surprises in some countries were offset by downside surprises in others. In France, a boost from aerospace exports lifted growth to 2.2 percent, whereas in Germany, falling exports continued to weigh on activity, thereby leaving real GDP unchanged between the second and third quarters. Meanwhile, Japan's economy contracted by 2.3 percent, as private and government consumption partially offset the contraction driven by declines in private residential investment and exports. At the same time, China's growth decelerated to 2.4 percent (according to staff estimates), with weak domestic demand—particularly in the housing sector—only partly offset by resilient exports.

In contrast, growth in the United States accelerated to 4.3 percent, supported by a pickup in technology investment and expenditure, which is estimated to have added approximately 0.3 percentage point to average annualized GDP growth during the first three quarters of 2025, thereby offsetting the drag from the federal government shutdown in the final quarter of the year. In addition, there are indications that technology-related investment also contributed to economic activity in Spain and the United Kingdom, although the scale of this contribution was smaller than that observed in the United States.

India–European Union Free Trade Agreement:

India and the EU concluded a landmark Free Trade Agreement (FTA) on 27 January 2026 during the 16th India–EU Summit, which aims to deepen and stabilise trade between India—the world's fourth-largest economy—and the EU, the second-largest economic bloc. The agreement expands market access, reduces trade frictions, and enhances predictability for cross-border commerce, thereby building on an already strong economic relationship reflected in USD 136.54 billion of goods trade in FY25. It supports India's export-led growth by granting preferential access to over 99% of its exports and by integrating Indian industries more deeply into European value chains, while simultaneously providing the EU with a reliable long-term partner and a diversified supply base. Beyond tariff reductions, the FTA strengthens trade conditions by establishing clearer rules, streamlining procedures, and reinforcing compliance and dispute-resolution mechanisms. These measures collectively reduce administrative uncertainty, encourage long-term investment and sourcing decisions, and enable MSMEs and labour-intensive sectors to expand their presence in the EU's large and diverse market.

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Against a backdrop of rising commercial engagement, the agreement delivers immediate gains for the EU by improving tariff treatment and clarifying market-entry conditions in India.

- India will eliminate or reduce tariffs on 96.6% of EU goods exports, potentially doubling EU exports to India and saving up to USD 4.79 billion annually in duties.
- Tariffs on cars will drop from 110% to 10%, with a quota of 250,000 vehicles per year, while most car-part tariffs will be phased out over 5–10 years.
- High Indian tariffs on machinery (up to 44%), chemicals (22%), and pharmaceuticals (11%) will largely be eliminated.
- Agri-food tariffs on selected EU priority products—such as confectionery, pastries, pasta, chocolates, and pet food—will be sharply reduced or eliminated over agreed timelines.
- Sheep meat (33%) and olive oil (up to 45%) tariffs will be phased down to zero after the staging period.
- Tariffs on alcoholic beverages will see major cuts: wine from 150% to 30%, spirits from up to 150% to 40%, and beer from 110% to 50%.

These reductions give EU exporters a strong competitive advantage by lowering some of India's highest tariff barriers and improving predictability for market entry. Lower duties across autos, industrial goods, and agri-food products expand market opportunities, strengthen EU price competitiveness, and support deeper distribution and after-sales networks in India. Indian consumers benefit through lower prices, better quality, and wider product choice, while Indian firms face increased competitive pressure—rewarding those that innovate and challenging those dependent on high tariff protection. Overall, the agreement positions the EU to scale exports and gain market share in sectors previously constrained by high border costs.

The U.S.–India Trade Deal:

The U.S.–India Trade Deal 2026 marks a major restructuring of bilateral economic relations by establishing an interim framework that resets tariffs, expands market access, and lays the groundwork for a full Bilateral Trade Agreement (BTA). Under this framework, the United States reduces effective tariffs on Indian goods from 50% to 18%, with plans to eventually eliminate duties on pharmaceuticals, gems and diamonds, and aircraft parts.

- Even after the deal, Section 232 tariffs on steel, aluminum, copper, and related products remain at 50%, while select auto components continue at 25%. At the same time, zero tariffs on certain pharmaceuticals, aircraft and parts, and some mechanical and electronic components continue.

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- India, in turn, agrees to eliminate or reduce tariffs on all U.S. industrial goods and a wide range of agricultural products, including dried distillers' grains, sorghum for feed, tree nuts, fruits, soybean oil, wine, and spirits.
- In addition to tariff changes, the framework incorporates commitments on non-tariff barriers (NTBs) by simplifying certification, reducing procedural delays, and aligning standards in sectors such as medical devices and ICT goods, where regulatory friction has long affected trade.
- Both sides also pledge cooperation on digital trade rules, investment reviews, and supply-chain resilience, reflecting the broader strategic dimension of the agreement.
- India further commits to aggregate purchases of up to USD 500 billion in U.S. goods over five years—covering energy and technology products—partly contingent on significantly reducing imports of Russian crude.

Given India's strong presence in U.S. supply chains—with about 112,000 Indian suppliers out of 1.1 million foreign suppliers supporting U.S. businesses—the tariff rollback is expected to produce rapid economic effects across multiple sectors. Overall, the deal improves bilateral trade flows while deepening regulatory, technological, and strategic cooperation, enabling more predictable and resilient economic engagement.

Global Growth Projection

At a broader level, the global growth is expected to remain steady, as momentum in high-tech sectors is projected to slow, yet still continue to partly offset the drag elsewhere. While tariffs and elevated uncertainty are expected to weigh on the level of activity, their impact on growth is projected to fade during 2026,2027 and 2028. At 3.3 percent in 2026 and 3.2 percent in 2027 and 2028, global growth is therefore expected to decelerate slightly from the estimated 3.3 percent recorded in 2025. Compared with the October 2025 World Economic Outlook (WEO), the forecast for 2026 has been revised upward by 0.2 percentage point, whereas the forecast for 2027 remains unchanged. Nevertheless, there are significant revisions for some countries, with changes occurring in different directions.

Growth in advanced economies is projected at 1.8 percent in 2026 and 1.7 percent in 2027 and 2028. In the United States, economic activity is expected to expand by 2.4 percent in 2026, supported by fiscal policy and a lower policy rate, while the impact of higher trade barriers gradually wanes. This 0.3 percentage point upward revision relative to October 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 the fourth

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quarter of 2025 following the end of the federal government shutdown, and the associated carryover effects. Looking ahead, growth in the United States is projected to remain solid at 2.0 percent in 2027, supported by a near-term fiscal boost from tax incentives for corporate investment under the One Big Beautiful Bill Act of 2025. Although technology-driven momentum is expected to moderate, it is still projected to provide a partial offset to lower immigration and moderating consumption.

In the euro area, growth is expected to remain steady at 1.3 percent in 2026 and to increase modestly to 1.4 percent in 2027. The slightly faster growth in 2027 reflects projected increases in public spending, particularly in Germany, alongside continued strong performance in Ireland and Spain. Overall, the forecast remains broadly unchanged from October, with the subdued growth outlook reflecting unresolved structural headwinds. The impact of the planned increase in defense spending is expected to materialize only in subsequent years, as commitments to reach target levels are phased in gradually through 2035. Compared with other regions, the euro area benefits less from the recent technology-driven investment boost. In addition, the lingering effects of persistently higher energy prices following Russia's invasion of Ukraine are expected to continue weighing on manufacturing, with additional pressure stemming from the real appreciation of the euro relative to the currencies of countries exporting similar products. In Japan, growth is projected to moderate from 1.1 percent in 2025 to 0.7 percent in 2026 and to 0.6 percent in 2027 and 2028. This marks a small upward revision relative to the October figure, reflecting in part the fiscal stimulus package announced by the new government.

In emerging market and developing economies, growth is projected to hover just above 4.0 percent in 2026, 2027, and 2028. Relative to the October forecast, China's growth in 2025 has been revised upward by 0.2 percentage point to 5.0 percent, reflecting the implementation of stimulus measures and additional policy bank lending for investment. Growth in China for 2026 has also been revised upward by 0.3 percentage point to 4.5 percent, as a result of lower effective US tariff rates on Chinese goods following the yearlong trade truce agreed in November, alongside stimulus measures assumed to be implemented over a two-year period. However, the economy's growth rate is expected to decelerate to 4.0 percent in 2027, as structural headwinds increasingly weigh on activity.

Key factors impacting Global Macroeconomic landscape

- Geopolitics remains a defining global risk factor. Ongoing conflict between Russia and Ukraine, heightened tensions in the Middle East, and increasing U.S. geopolitical actions involving countries such as Venezuela, Nigeria, and even regions like Greenland are amplifying systemic uncertainty. These developments are disrupting energy markets and reshaping global supply chains. At the same time, resource nationalism and strategic competition for rare earth minerals have moved from abstract concerns to day-to-day operations.

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- The period of frictionless trade shaped by free trade agreements has given way to a stronger push toward regionalization and nearshoring. Geopolitical fragmentation and tariff uncertainty continue to challenge global trade flows.
- Technology adoption and sustainability have become core strategic priorities. Organizations are advancing digital transformation by embedding AI, automation, and cybersecurity into their operations to enhance productivity and safeguard critical assets. AI adoption is emerging as a visible driver of optimism, particularly within the information and communications sectors.

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India Macroeconomic Analysis

The International Monetary Fund (IMF) has revised upward India's economic growth for 2025 by 0.7 percentage point to 7.3%. In its World Economic Outlook update, the IMF stated that the upward revision reflects strong growth momentum in the fourth quarter of the current fiscal year. At the same time, the IMF projects India's growth at 6.4 percent in CY 2026, noting that despite the expected moderation, India is expected to remain a key driver of growth among emerging market and developing economies. In addition, the IMF expects inflation in India to return to near-target levels following a marked decline in 2025, driven by subdued food prices, which is expected to provide further support to domestic demand. However, the IMF cautioned that AI-driven productivity gains could lead to a pullback in investment and tighter global financial conditions, resulting in spillover effects for emerging economies.

Country	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024	CY 2025	CY 2026 P	CY 2027 P	CY 2028 P
India[2]	–5.8%	9.7%	7.6%	9.2%	6.5%	7.3%	6.4%	6.4%	6.5%
China	2.3%	8.6%	3.1%	5.4%	5.0%	5.0%	4.5%	4.0%	4.0%
United States	-2.2%	6.1%	2.5%	2.9%	2.8%	2.1%	2.4%	2.0%	2.1%
Japan	-4.2%	2.7%	0.9%	1.4%	-0.2%	1.1%	0.7%	0.6%	0.6%
United Kingdom	-10.3%	8.6%	4.8%	0.4%	1.1%	1.4%	1.3%	1.5%	1.4%
Russia	-2.7%	5.9%	-1.4%	4.1%	4.3%	0.6%	0.8%	1.0%	1.1%
Germany	-4.1%	3.9%	1.8%	-0.9%	-0.5%	0.2%	1.1%	1.5%	1.2%

Source: World Economic Outlook, January 2026

*Note CY 2028 projection is taken from October 2025(World Economic Outlook)

Historical GDP and GVA Growth trend

India Real GDP (GDP at constant prices) for FY 2025–26 is estimated to reach INR 322.58 lakh crore, compared to the First Revised Estimate (FRE) of INR 299.89 lakh crore for FY 2024–25. This represents a growth rate of 7.6% in 2025–26, higher than the 7.1% growth recorded in 2024–25.

Similarly, Real GVA for FY 2025–26 is projected at INR 294.40 lakh crore, up from INR 273.36 lakh crore in FY 2024–25. This indicates a growth rate of 7.7%, compared with the 7.3% growth achieved in the previous year.

[2] For India, data and projections are presented on a fiscal year (FY) basis, with FY 2024/25 (starting in April 2024) shown in the 2024 column. India's growth projections are 6.4 percent for 2026, 6.4 percent for 2027 and 6.5% for 2028 based on calendar year

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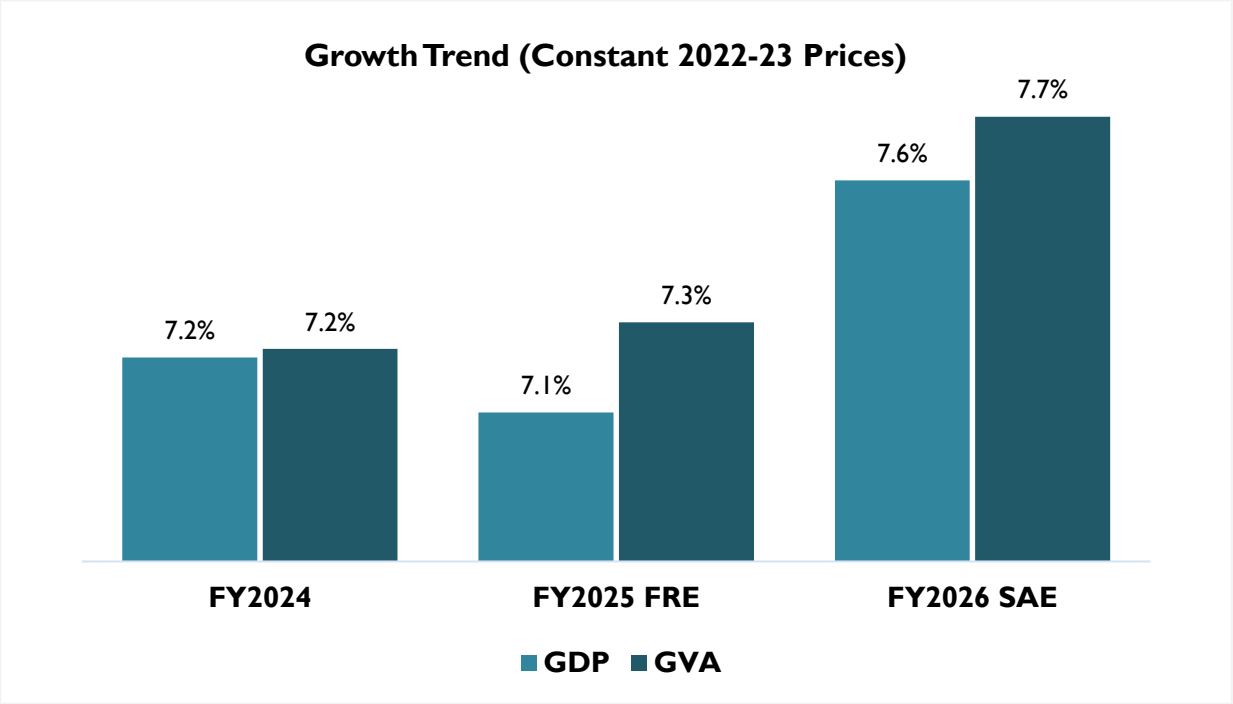
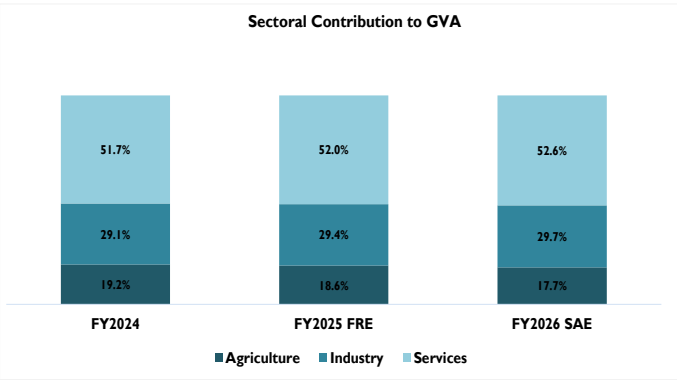
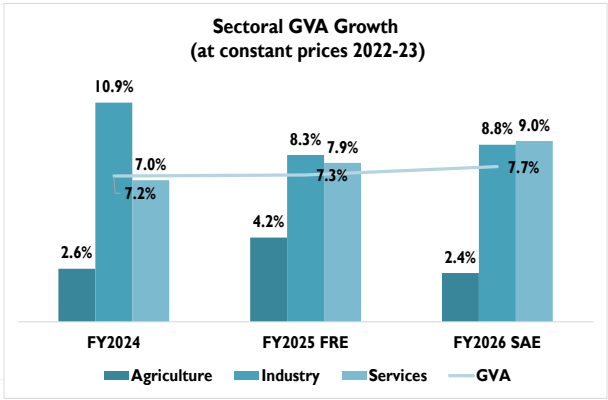


Source: Ministry of Statistics & Programme Implementation (MOSPI), National Account Statistics: FY2025,

FRE is First Revised Estimate, SAE is Second Advance Estimate

Sectoral Contribution to GVA and annual growth trend





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

FRE is First Revised Estimate, SAE is Second Advance Estimate

Sectoral analysis of GVA reveals that the industrial sector experienced steady growth momentum in FY 2026, recording a 7.7% y-o-y growth against 7.3% year-on-year growth in FY 2025. Within the industrial sector, growth moderated across sub sector with mining, and construction activities growing by 4.08%, and 7.08% respectively in FY 2026, compared to 11.69%, and 7.30% in FY 2025. Growth in the utilities sector too moderated to 1.52% in FY 2026 from 2.87% in the previous year. The industrial sector's contribution to GVA moderated marginally from 29.4% in FY 2025 to 29.7% in FY 2026.

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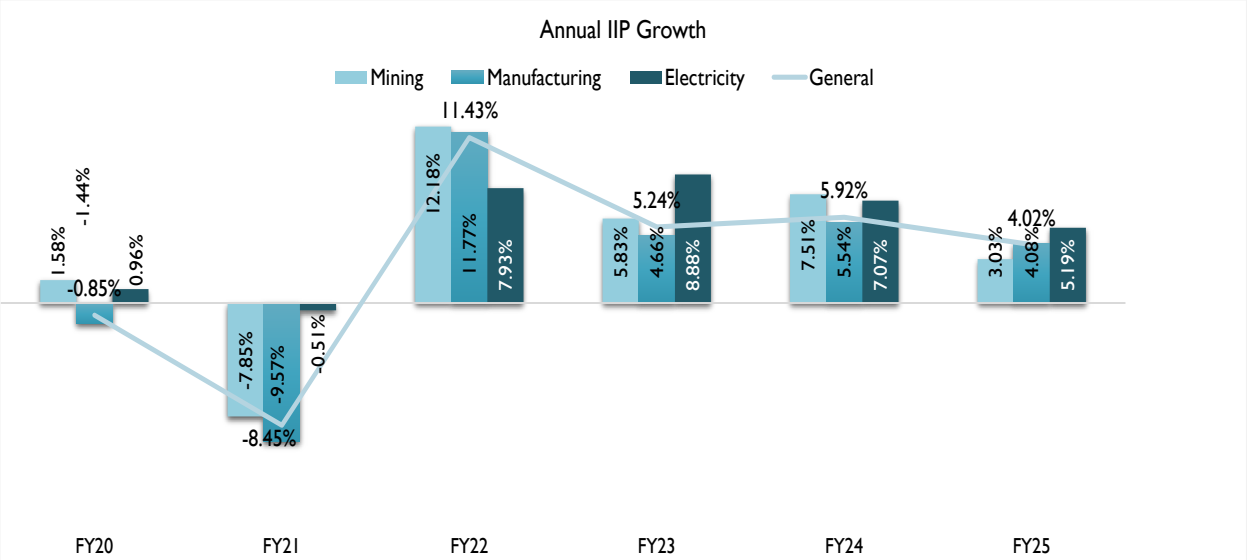
The services sector continued to be the main driver of economic growth. It expanded by 9.0% in FY 2026 from 7.9% in FY 2025. The services sector retained its position as the largest contributor to GVA, rising from 51.7% in FY 2024 to 52% in FY 2025, with a further increase to 52.6% in FY 2026.

The agriculture sector saw an acceleration in growth, increasing from 2.66% in FY 2024 to 4.18% in FY 2025, before moderating to 2.42% in FY 2026. However, its contribution to GVA declined marginally from 19.2% in FY 2024 to 17.7% in FY 2026. Overall, Gross Value Added (GVA) growth rose to 7.7% in FY 2026 from 7.3% in FY 2025.

Annual & Monthly IIP Growth

Industrial sector performance as measured by the IIP index exhibited moderation in FY 2025, recording a 4.02% y-o-y growth against 5.92% increase in the previous year. The manufacturing index showed moderation, increasing by 4.08% in FY 2025 compared with 5.54% in FY 2024. The mining sector index also moderated, growing 3.03% in FY 2025 compared with 7.51% in previous years, while the Electricity sector index moderated by 5.19% in FY 2025 compared with 7.07% in the previous year.



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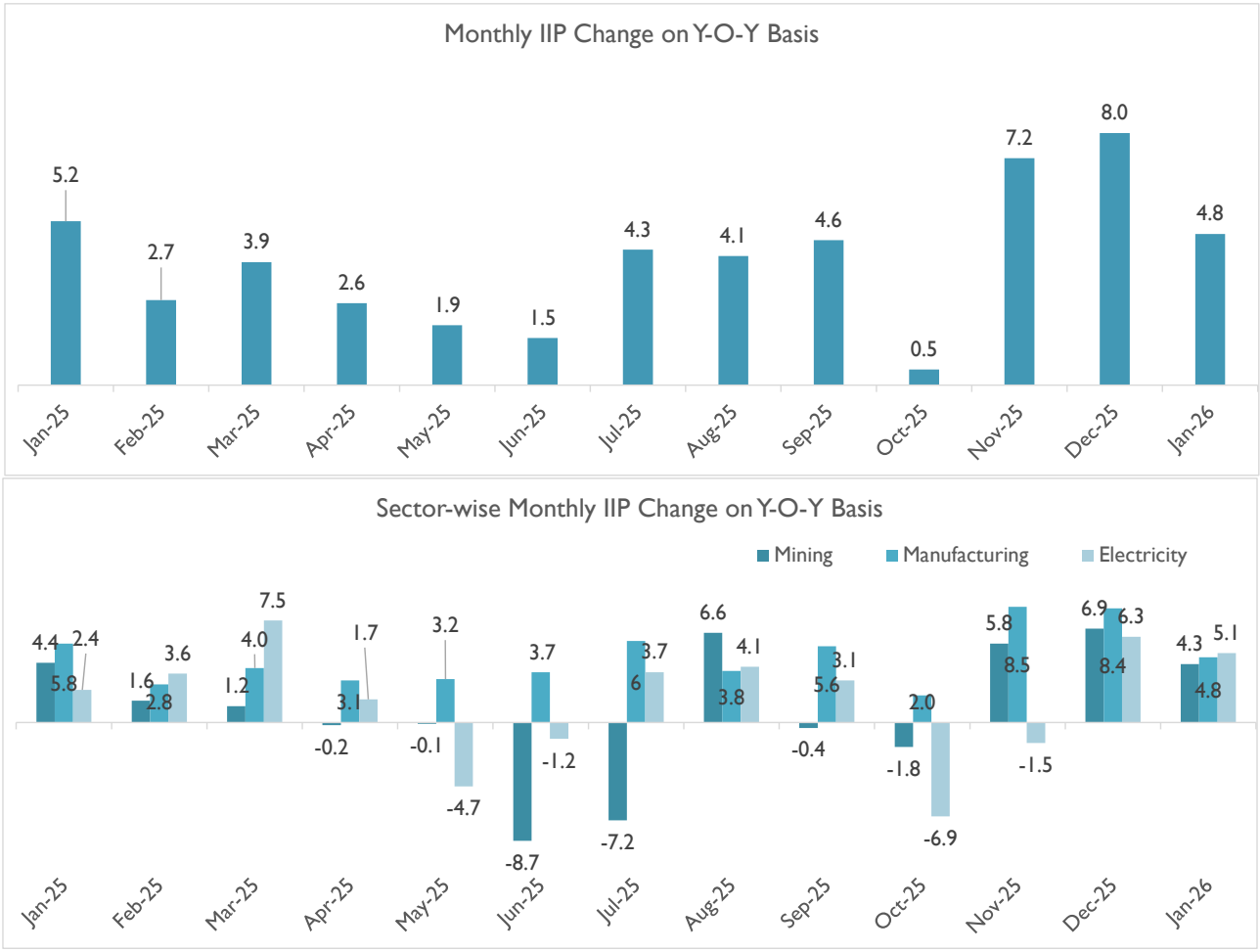

Source: Ministry of Statistics & Programme Implementation (MOSPI)

The IIP growth rate for the month January 2026 is 4.8% which was 8.0% in the month of December 2025. The growth rates of the three sectors, Mining, Manufacturing and Electricity for the month of January2026 were 4.3%, 4.8% and 5.1% respectively.

Annual and Quarterly: Investment & Consumption Scenario

Other major indicators, such as Gross Fixed Capital Formation (GFCF), a measure of investment, increased during FY 2026, registering 7.08% year-on-year growth compared with 6.41% in FY 2025, bringing the GFCF-to-GDP ratio to 32.17%.

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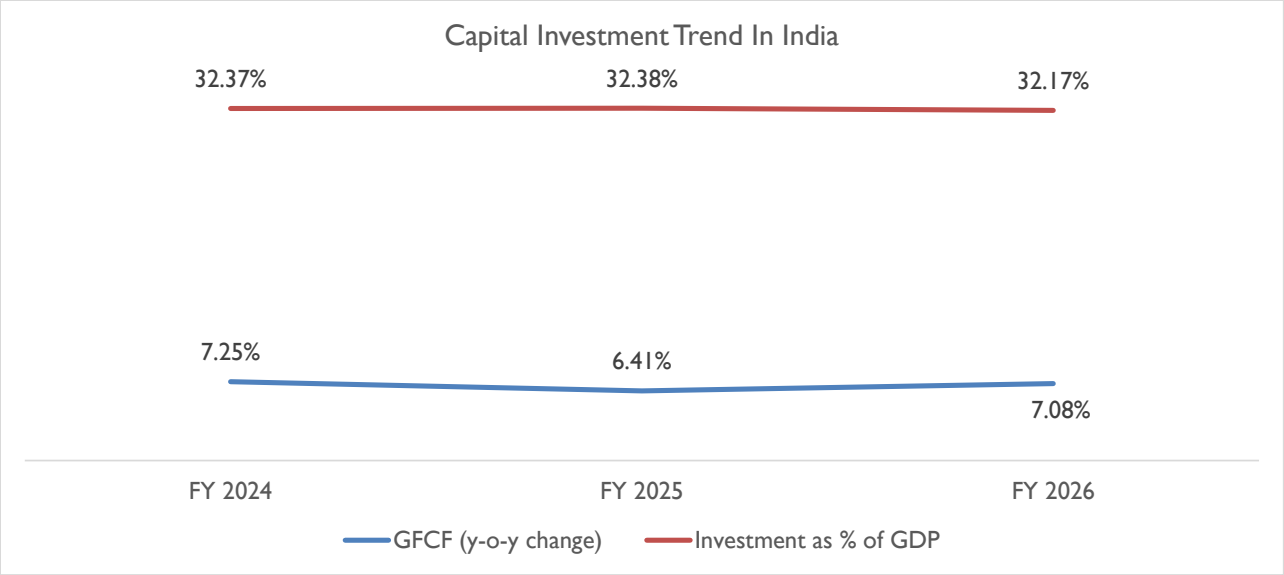

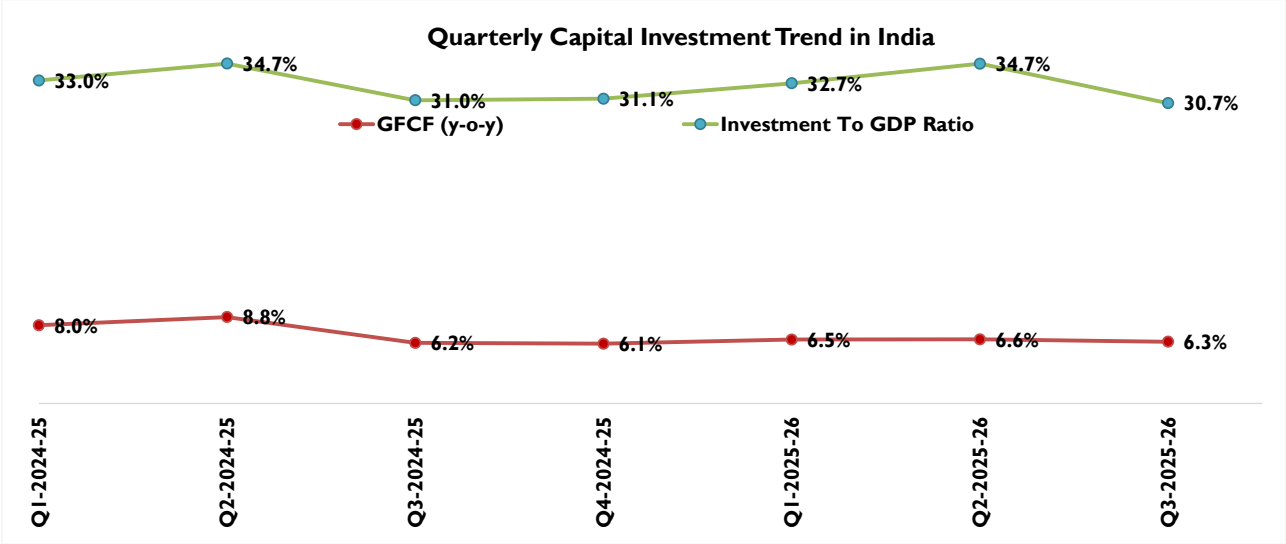

Source: Ministry of Statistics & Programme Implementation (MOSPI), CMIE Economics Outlook

On a quarterly basis, India's capital investment indicators display a pattern of moderate but uneven momentum. The Investment-to-GDP ratio remained above 30% throughout the period but shifted within a narrow and cyclical band—rising from 33.0% in Q1 FY 2025 to 34.7% in Q2, before softening to 31.0% and 31.1% in Q3 and Q4, respectively. The ratio recovered to 32.7% in Q1 FY 2026 and 34.7% in Q2, before easing to 30.7% in Q3, indicating fluctuating capital deployment across quarters. Meanwhile, GFCF (y-o-y) growth also exhibited volatility. After rising to 8.8% in Q2 FY 2025, growth moderated to 6.2% in Q3 and 6.1% in Q4, reflecting a deceleration in both government and private investment activity. Growth improved marginally to 6.5% in Q1 FY 2026 and 6.6% in Q2, but eased to 6.3% in Q3, signalling a plateauing in investment momentum. Overall, the data suggests that while

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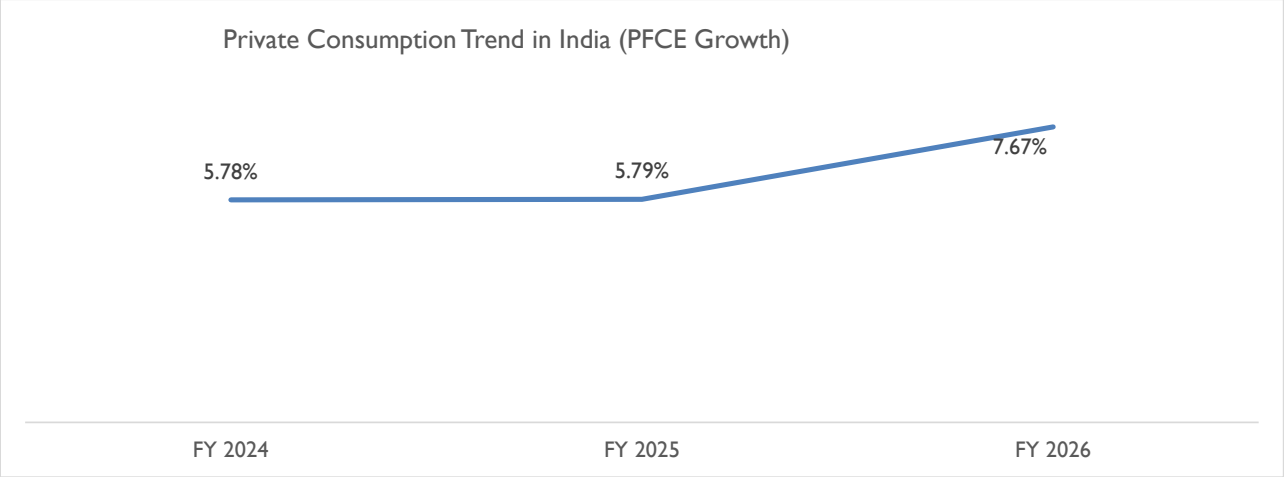
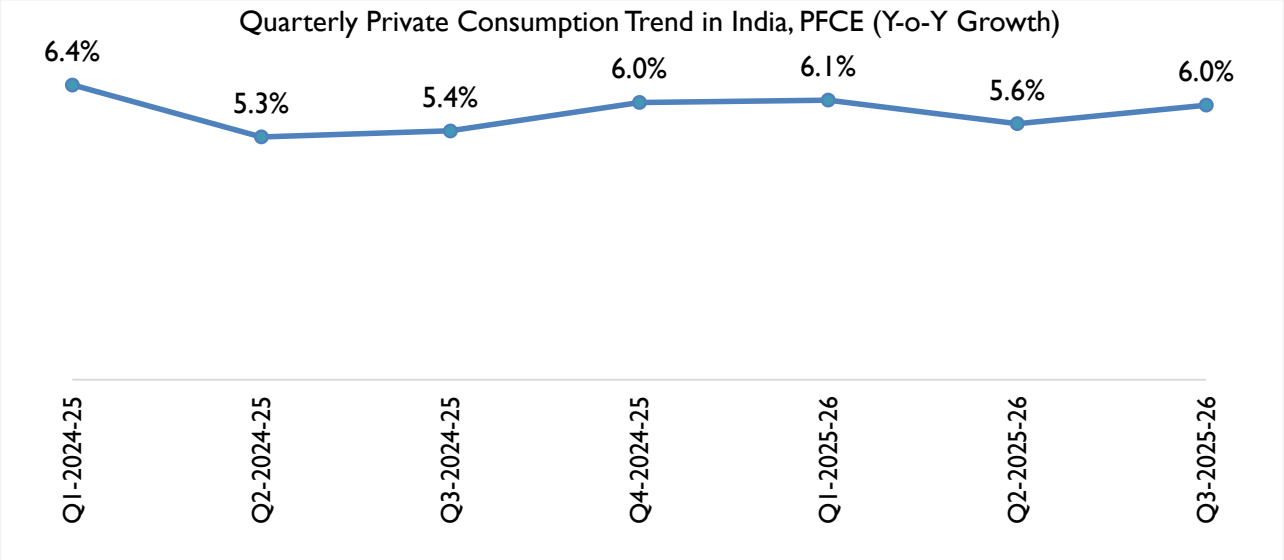
investment levels remain healthy, quarterly volatility persists, underscoring the dependence on fiscal spending patterns and the still-gradual recovery of private capital expenditure.

Private Consumption Scenario





Sources: MOSPI, CMIE Economics Outlook

Private Final Consumption Expenditure (PFCE) is a practical proxy for household spending, observed growth in FY 2026 relative to FY 2025. Quarterly Private Final Consumption Expenditure (PFCE) has reported 6.0% growth rate during Q3 of FY 2025-26 as compared to the 5.6% growth rate in the corresponding period of the previous financial year.

Inflation Scenario

The annual rate of inflation based on All India Wholesale Price Index (WPI) number is 1.81% (provisional) for the month of January, 2026 (over January, 2025). Positive rate of inflation in January,

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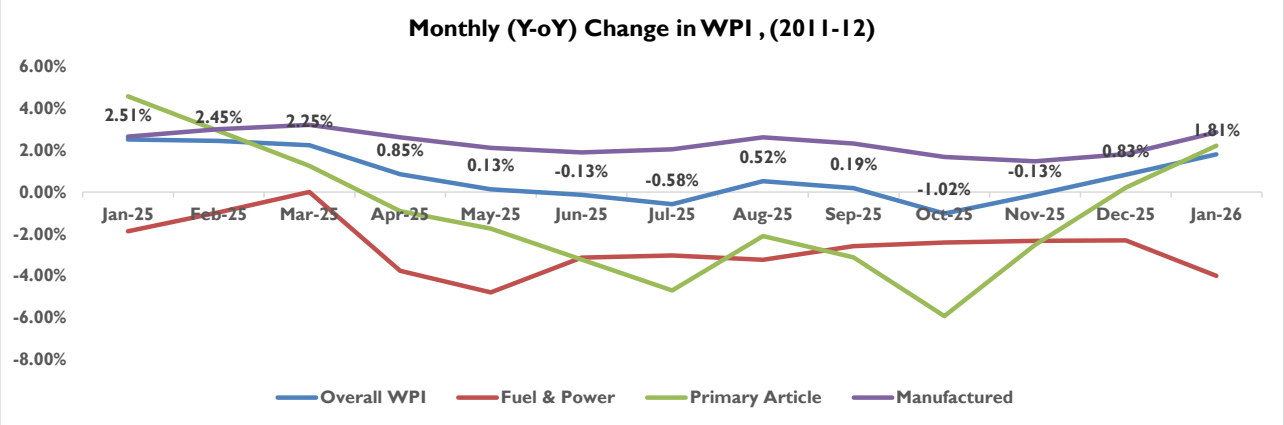
2026 is primarily due to increase in prices of manufacture of basic metals, other manufacturing, non-food articles, food articles and textiles etc.

Primary Articles (Weight 22.62%): - The index for this major group decreased by 0.15 % from 194.2 (provisional) for the month of December, 2025 to 193.9 (provisional) in January, 2026. The Price of food articles (-1.79%) and minerals (-0.47%) decreased in January, 2026 as compared to December, 2025. The Price of non-food articles (5.32%) and Crude Petroleum & Natural Gas (4.27%) increased in January, 2026 as compared to December, 2025.

Fuel & Power (Weight 13.15%): - The index for this major group decreased by 1.62% from 148.3 (provisional) for the month of December, 2025 to 145.9 (provisional) in January, 2026. The Price of electricity (-2.91%) and mineral oils (-1.68%) decreased in January, 2026 as compared to December, 2025. The Price of coal (0.73%) increased in January, 2026 as compared to December, 2025.

Manufactured Products (Weight 64.23%): - The index for this major group increased by 1.30% from 145.6 (provisional) for the month of December, 2025 to 147.5 (provisional) in January, 2026. Out of the 22 NIC two-digit groups for manufactured products, 19 groups witnessed an increase in prices and 3 groups witnessed a decrease in prices. Some of the important groups that showed month-over-month increase in prices were manufacture of basic metals; food products; textiles; other manufacturing and electrical equipment etc. some of the groups that witnessed a decrease in prices were manufacture of pharmaceuticals, medicinal chemical and botanical products; machinery and equipment and furniture in January, 2026 as compared to December, 2025.



Monthly Consumer Price Index (Base year 2024)													
Rural	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26
Urban	101.81	101.33	101.34	101.81	101.78	102.39	103.34	103.84	103.8	103.85	104.16	104.19	104.59
India	101.49	101.3	101.47	101.49	102.06	102.66	103.36	103.6	103.66	103.61	103.83	103.98	104.3
Rural	101.67	101.32	101.39	101.67	101.9	102.51	103.35	103.74	103.74	103.74	104.01	104.1	104.46

Source: MOSPI, Office of Economic Advisor

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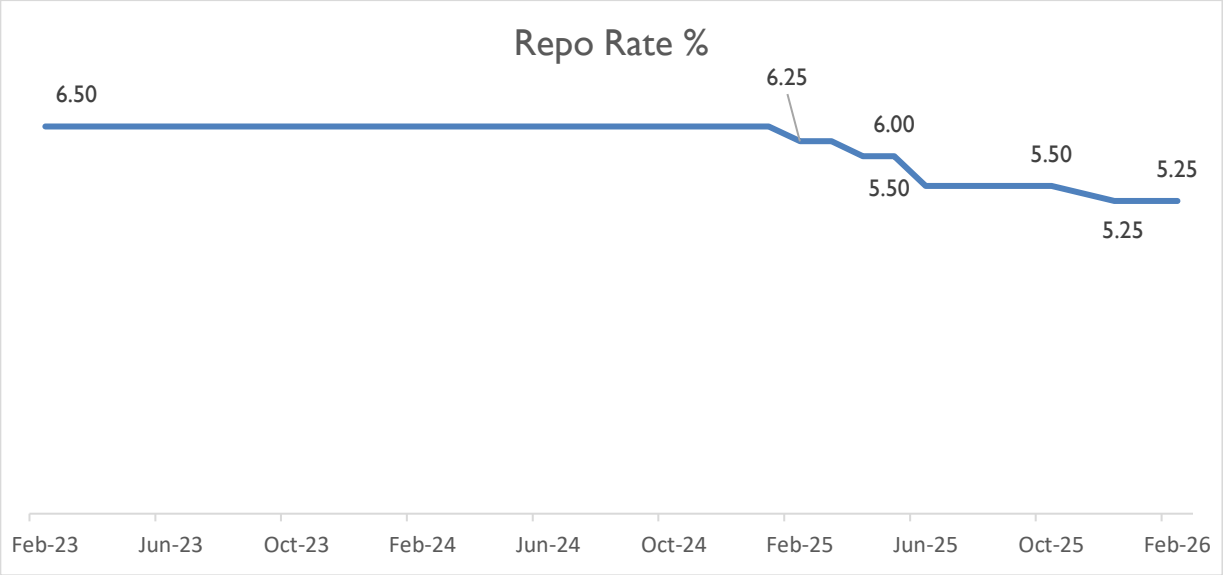
With effect from January 2026, the National Statistics Office (NSO) introduced a revised CPI series with base year 2024=100, drawing revised item weights from the Household Consumption Expenditure Survey (HCES) 2023-24. Under the new series, the weight of food and beverages has been reduced from 45.86% to 36.75%, while housing (including water, electricity, gas, and other fuels) has been expanded to 17.67%. CPI inflation under the new series stood at 2.75% (provisional) for January 2026, with rural inflation at 2.73% and urban inflation at 2.77%, well within the RBI's target band of 2–6%.

On the monetary policy front, the RBI had cumulatively raised the repo rate by 250 basis points between May 2022 and February 2023, bringing it to 6.50%, where it was held steady through January 2025 to anchor inflationary expectations. With inflation moderating below target and growth requiring support, the RBI's Monetary Policy Committee (MPC) commenced an easing cycle in February 2025, delivering a cumulative 125 basis points of rate cuts through four reductions — 25 bps each in February 2025, April 2025, and December 2025, and a larger 50 bps cut in June 2025 — interspersed with pauses in August and October 2025. The repo rate currently stands at 5.25%, following the MPC's decision to hold rates unchanged at its February 2026 meeting, the most aggressive easing cycle since 2019.



Sources: CMIE Economic Outlook

Growth Outlook

The Union Budget 2026–27 sets out a quantitatively strong push to build resilient supply chains and develop next-generation industrial capacity. The record ₹12.2 trillion capital expenditure outlay is aimed to easing logistics bottlenecks and enhancing India's cost competitiveness. Employment measures extend across both urban and rural India in one sweep. In cities and large towns, capex is channelled into "connectors" such as the seven proposed high-speed rail corridors and upgraded Tier-2 and Tier-3 infrastructure, thereby creating construction, logistics, and service jobs while cutting

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commute times. In smaller towns and villages, jobs creation is expected to be supported by mega textile parks, the Mahatma Gandhi Gram Swaraj Initiative's push for khadi and handloom, training for tourist guides, and new waterways and coastal shipping. Together, these steps broaden the wage base instead of providing a short-term bump.

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

The conclusion of the India–EU FTA negotiations mark a major strategic milestone, as it offers near-universal market access for 99.5% of India's exports by value and integrates India more deeply into a USD 24 trillion economic bloc. By providing duty-free entry for key labour-intensive sectors, expanding services access, and establishing a mobility framework for Indian professionals, the agreement strengthens India's export competitiveness, supports high-value job creation, and ensures a predictable, rules-based environment for long-term trade and investment flows.

Similarly, the India–Oman CEPA creates a comprehensive framework covering goods, services, investment, and regulatory cooperation. With bilateral trade at USD 10.61 billion in FY 2024–25, the CEPA grants India 100% duty-free access across 98.08% of Oman's tariff lines (99.38% of export value) from Day One. This access expands opportunities across engineering goods, pharmaceuticals, agriculture, chemicals, electronics, textiles, marine products, and gems & jewellery, while a calibrated exclusion list helps protects sensitive domestic and MSME-linked sectors.

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India Scenario: Electricity Demand

Electricity demand, often referred to as load, represents the amount of electrical power required at a specific moment in time, typically measured in watts. India's electricity demand is experiencing a sustained upward trajectory, mirroring the country's broader economic expansion and urbanization. With rapid industrial growth, rising standards of living, and deeper electrification of rural and semi-urban areas, energy consumption patterns are evolving at an unprecedented pace. The nation's peak electricity demand reached approximately 256 GW in FY2025 and is projected to cross 335 GW by FY2030, highlighting the scale of future energy requirements[3].

One of the key drivers of this growing demand is the surge in residential electricity usage, particularly in urban households where air conditioner penetration, use of home appliances, and digital devices have significantly increased. Simultaneously, India's push for industrialization through manufacturing initiatives, infrastructure development, and logistics expansion has placed greater demand on the grid, especially during daytime and peak hours.

The transition toward electric mobility is also beginning to reflect in electricity consumption, with charging infrastructure expanding across major cities. Similarly, the rapid proliferation of data centres, powered by the digital economy, is emerging as a high-load segment influencing base demand.

Moreover, seasonal factors such as heatwaves and climate-driven weather fluctuations are leading to unprecedented spikes in power consumption, especially during summer months when cooling requirements peak. This creates additional pressure on the system, emphasizing the need for better load forecasting and grid management.

While demand is rising uniformly, regional disparities persist, with power consumption concentrated in industrialized and urbanized states such as Maharashtra, Gujarat, Tamil Nadu, and Uttar Pradesh. These regional variations also underscore the importance of robust interstate transmission infrastructure to ensure efficient energy balancing.

India's electricity demand profile is no longer static or linear; it is becoming increasingly dynamic, shaped by structural economic changes, demographic shifts, climate sensitivity, and technological disruptions. Managing this growing and complex demand landscape will require not only augmentation

[3] Ministry of Power, Press Information Bureau

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of generation capacity but also smarter grid systems, energy storage integration, and policy frameworks that promote both efficiency and sustainability.

Brief overview on the Indian power sector: generation, transmission & distribution

The Indian power sector operates through a structured three-tier system comprising generation, transmission, and distribution, each forming a critical link in the electricity value chain. Power is first produced using various sources, such as coal, natural gas, hydro, nuclear, and renewables, under the generation segment. It is then transmitted over long distances via a nationwide network of high-voltage lines that ensure inter-regional power flow, constituting the transmission phase. Finally, electricity is stepped down and delivered to end-users through regional and local networks in the distribution segment, which serves households, industries, and commercial establishments across the country.

- **Electricity Generation**

India's electricity generation is shaped by a diverse mix of sources, balancing the need for a reliable supply with sustainability goals. As the world's third-largest electricity producer, India draws power from thermal, renewable, hydro, and nuclear sources, reflecting its resource strengths and policy direction.

Thermal power remains the dominant source, contributing over 55% of the installed capacity, primarily through coal-based plants. These facilities use steam turbines powered by coal combustion, though rising emissions and water use have intensified the push for cleaner alternatives. Gas- and diesel-based generation play a smaller role, constrained by fuel availability and cost.

Renewable energy is rapidly transforming the generation mix. With over 125 GW installed capacity, solar and wind are key pillars, India became the world's third-largest producer of electricity from wind and solar in 2024, surpassing Germany. Solar PV thrives in states like Rajasthan and Gujarat, while wind power is concentrated in Gujarat, Tamil Nadu, Karnataka and Maharashtra. Biomass and small hydro add rural diversity to the green portfolio. According to the sixth edition of Ember's Global Electricity Review, wind and solar accounted for 15% of global electricity generation in 2023, with India's share standing at a significant 10%.

Hydropower provides essential grid stability and peak support, but seasonal variability and environmental concerns limit expansion. Nuclear energy, though limited in scale, offers steady base-load power with low emissions, managed by NPCIL with ongoing capacity development.

Electricity generation processes share a common goal: converting potential energy into electricity using turbines or PV technology, depending on the source. Recent innovations—such as hybrid

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renewables, battery storage, rooftop solar, and green hydrogen—signal a shift toward smarter and decentralized systems.

Still, the sector faces challenges including fuel supply risks, regulatory delays, environmental constraints, and the technical complexity of integrating variable renewable sources. To meet future demand sustainably, India must accelerate modernization, embrace digital tools, and improve generation flexibility.

- **Transmission and Distribution**

Transmission and distribution (T&D) are fundamental pillars of the electricity value chain, ensuring that power generated at plants reaches end-users across vast geographies. Power transmission involves the high-voltage transfer of electricity from generating stations whether thermal, hydro, nuclear, or renewable to substations, often across long distances. This process is designed to minimize energy losses and ensure efficient bulk transfer. In India, voltages ranging from 132 kV to 765 kV, and in some cases up to 1200 kV, are used to facilitate this flow. The transmission system is centrally managed and integrated into a unified National Grid, overseen by the Power Grid Corporation of India Limited (PGCIL), enabling interregional power exchange and real-time balancing of supply and demand.

Once the electricity reaches a substation, the distribution phase begins. Here, the voltage is stepped down to medium and low levels suitable for consumption and routed through a network of feeders, transformers, and service lines to homes, businesses, and industries. This final leg, managed by distribution companies (DISCOMs), includes responsibilities such as metering, billing, maintenance, and customer service. India's distribution network comprises a mix of state-owned and private DISCOMs operating in both urban and rural regions.

Together, the transmission and distribution systems form the backbone of India’s power infrastructure. They not only facilitate the delivery of electricity from remote generation hubs to urban and rural areas but also support the integration of renewable energy sources, smart grid deployment, and cross-border electricity trade. Despite their critical role, the T&D sector faces challenges such as technical losses, outdated infrastructure, and financial stress among DISCOMs, which require ongoing policy support and investment to ensure reliability, efficiency, and universal access to power.

Transmission Network

India operates one of the world’s most extensive and technically advanced transmission systems, managed centrally by the Power Grid Corporation of India Ltd. (PGCIL) and regionally by various State Transmission Utilities (STUs). The country’s synchronous national grid connects all states across

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five regions, North, South, East, West, and Northeast, facilitating inter-regional power transfers and grid stability.

With over 450,000 circuit kilometres of high-voltage transmission lines (220 kV and above), India has made significant strides in strengthening its grid. The rollout of high-voltage direct current (HVDC) systems and green energy corridors has enabled efficient evacuation of power from renewable-rich regions, especially in Rajasthan, Gujarat, and Tamil Nadu, to demand centers. Technologies like SCADA systems**,** real-time monitoring, and dynamic reactive power compensation are being deployed to enhance reliability and manage grid fluctuations, especially with rising intermittent renewable input.

Distribution Network

Electricity distribution, handled primarily by state-owned distribution companies (DISCOMs), is the final leg in the electricity value chain. It is responsible for last-mile connectivity and energy delivery to households, commercial establishments, and industries. The distribution network steps down voltage through substations and transformers, Typically, electricity is delivered at 33/11 kV for industrial and high-demand consumers, while 415V (three-phase) or 230V (single-phase) supplies are used for commercial and residential users. This segment plays a vital role in ensuring reliable and efficient access to electricity across urban and rural regions.

Despite achieving near-universal household electrification under schemes like Saubhagya and DDUGJY, the distribution segment continues to face significant operational and financial challenges. High aggregate technical and commercial (AT&C) losses, often due to power theft, outdated infrastructure, and billing inefficiencies, threaten DISCOM viability. To address this, the government is implementing reforms through the Revamped Distribution Sector Scheme (RDSS), focusing on loss reduction, feeder segregation, smart metering, and infrastructure modernization.

Key Trends and Developments

- Smart Grid Adoption: Utilities are increasingly investing in smart meters, GIS mapping, and automated demand-side management systems to enhance transparency and operational control.
- Privatization & Franchising: States like Delhi and Odisha have introduced private players or franchise models to bring in efficiency and improve service reliability.
- Open Access & Market-based Mechanisms: The growth of open access frameworks and real-time electricity markets allows large consumers to source power competitively and flexibly.
- Infrastructure Upgrades: Underground cabling, transformer augmentation, and advanced distribution management systems (ADMS) are being rolled out to improve network resilience.

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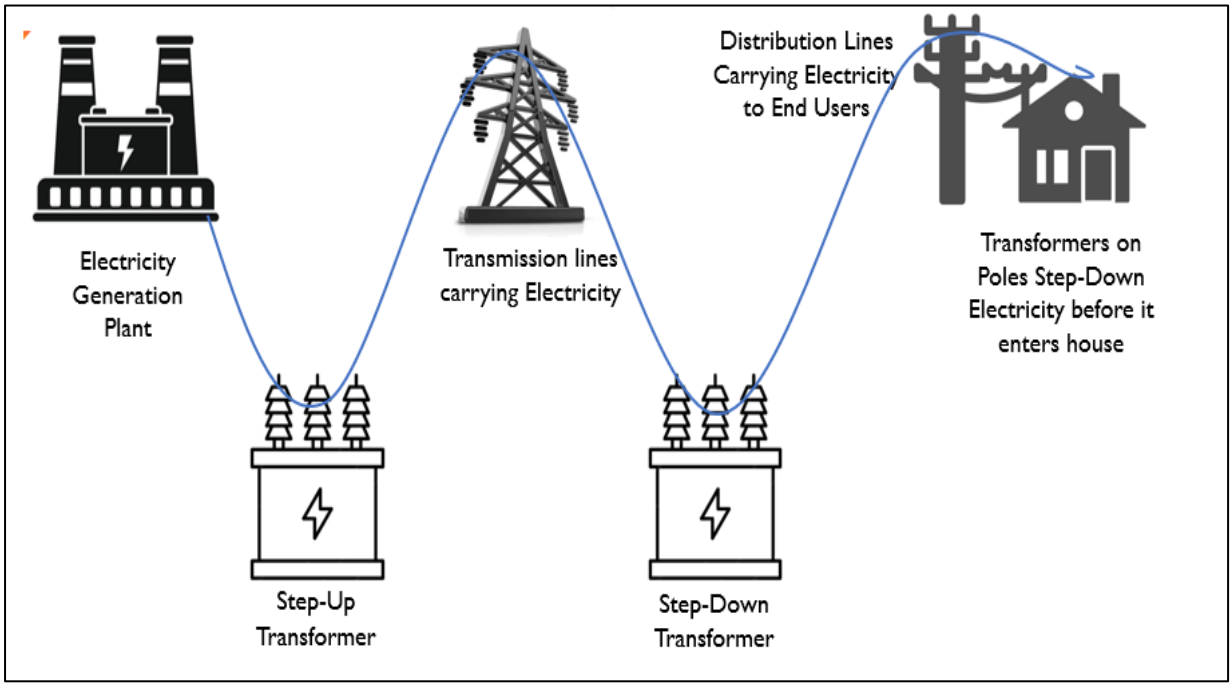
Value Chain from Electricity Generation to Distribution:



The flow chart showcases the electricity supply value chain, detailing how power flows from the point of generation to the end user. This process ensures that electricity generated from various sources reaches consumers efficiently and safely, with the right voltage and minimal losses.

The process initiates at the Electricity Generation Plant, where power is produced using different energy sources like coal, natural gas, nuclear fuel, hydro, wind, or solar. The electricity generated here is at a relatively low voltage, which isn't suitable for long-distance transmission. To overcome this, it is sent to a Step-Up Transformer, which increases the voltage significantly, allowing for effective transmission across long distances while reducing energy losses.

Once the voltage is stepped up, the power is transferred through high-voltage transmission lines. These lines span hundreds of kilometres, forming the backbone of the national transmission grid and enabling inter-regional electricity movement. This phase transports electricity to areas where demand is concentrated.

As the electricity nears consumption centres, it passes through a Step-Down Transformer, which reduces the voltage to levels appropriate for local distribution. This moderated voltage is then carried through distribution lines to reach cities, towns, and villages.

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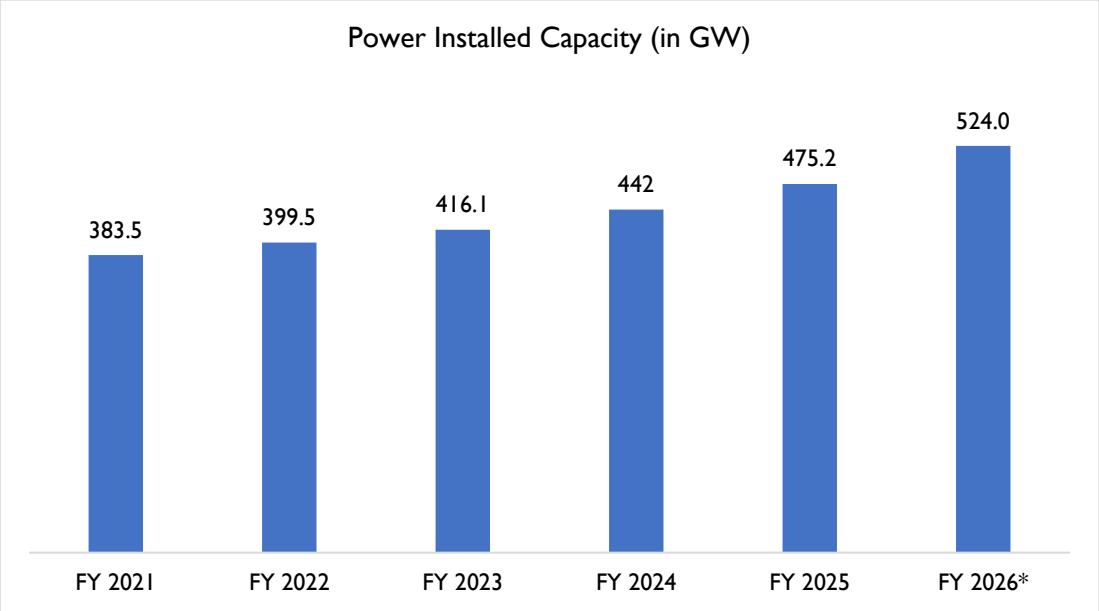
Just before the electricity enters homes and smaller establishments, it passes through pole-mounted transformers. These final transformers further reduce the voltage to the standard household level (typically 230 volts in India), making it safe and usable for appliances and everyday use.

Overall, this value chain, from generation and transmission to distribution, is crucial to delivering reliable and efficient power to consumers. Each stage plays a specific role in managing voltage and maintaining grid stability, ensuring electricity is available where and when it is needed.

Installed capacity & Generation: breakup by type of fuel

Installed Capacity

India's installed power generation capacity has expanded significantly over the past few years, underscoring the nation's commitment to enhancing its energy infrastructure and ensuring reliable electricity access across urban and rural regions. In FY 2021, the installed capacity stood at 383.5 billion units (BU), which marked a phase of stabilization following the initial disruptions caused by the COVID-19 pandemic.



Source: India Climate and Energy Dashboard, MNRE & CEA

* As on 28th February 2026

As economic activities resumed and energy-intensive sectors bounced back, capacity rose to 399.5 GW in FY 2022, driven by increased commissioning of thermal and renewable power projects. The momentum carried forward into FY 2023, with the installed capacity reaching 416.1 GW, supported by policy-level interventions, financial schemes, and growing participation from the private sector in renewable energy. FY 2024 marked a notable jump to 442 GW, reflecting accelerated deployment of solar and wind power, expansion of hydropower installations, and modern upgrades to the

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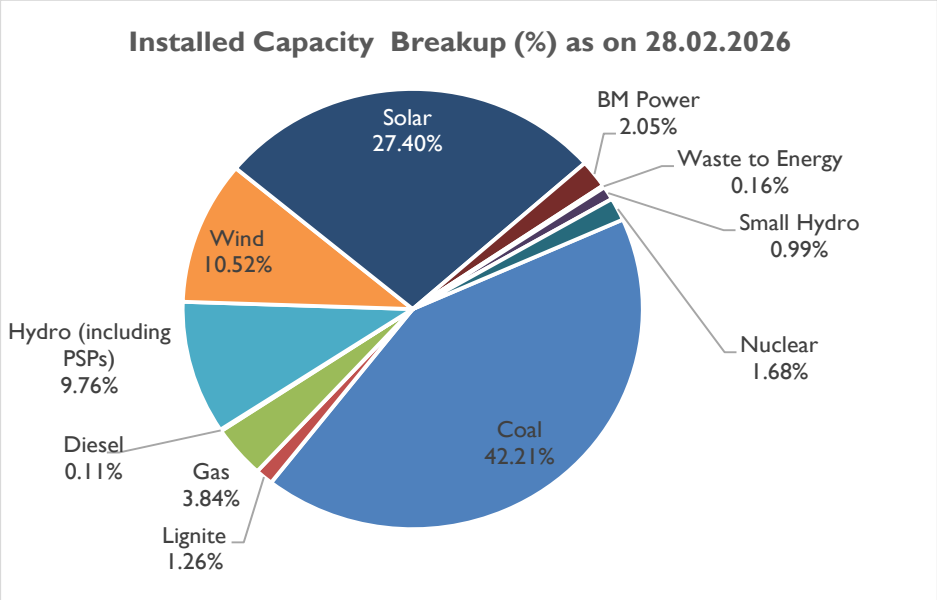
transmission and distribution network under programs like the National Infrastructure Pipeline and RDSS.

FY 2026 is set to witness the highest annual growth in recent years, with the installed capacity surging to over 524 GW, this can be attributed to a convergence of factors including large-scale renewable energy parks, capacity additions in ultra-mega thermal projects, and enhanced cross-border electricity trade. This upward trajectory clearly aligns with India's long-term goals of increasing the share of renewables in its energy mix, achieving 500 GW of non-fossil fuel capacity by 2030, and meeting the growing demand from industrial, residential, and agricultural sectors.

Nonetheless, the overall trend remains firmly positive, as India continues to position itself as a global leader in energy transition. With consistent government support, ambitious renewable targets, and innovations in grid storage and smart metering, the installed power capacity is expected to witness robust growth over the coming decade. Strategic initiatives such as the Green Energy Corridor, Production Linked Incentive (PLI) scheme for solar manufacturing, and round-the-clock renewable energy procurement contracts will further consolidate capacity growth and enhance grid stability.
Building on the analysis of India's expanding power generation capacity, the energy mix for FY 2026 (till 28 Feb 2026) highlights a continued but gradual transition toward cleaner sources while coal remains dominant. Of the total installed capacity of 524 GW in FY 2026*, coal-fired power continues to be the backbone of India's electricity generation, accounting for 42.2% of the mix. This underscores the reliance on thermal power to meet base load requirements, particularly as demand surges from industrial and residential consumers.



Source: CEA,

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However, a significant structural shift is evident in the growing contribution of renewables. Solar energy has emerged as the second-largest contributor, with an installed capacity of 143.6 GW representing 27.4% of the total, a clear indicator of India's policy push under missions like the National Solar Mission and the broader target of 500 GW from non-fossil sources by 2030. Wind energy holds a strong presence as well, contributing 55.13 GW or 10.52%, supported by consistent development in southern and western coastal states.

Hydropower, including large and small hydro projects, contributes a combined 10.75% (51.16 GW from large hydro and 5.17 GW from small hydro), playing a crucial role in grid stability and peak load management. Bio-Mass power adds another 2.05% (10.76 GW), further diversifying the renewable portfolio.

Oil and gas-based power plants make up about 3.95% of the capacity, often used for peaking and balancing load rather than base supply, while nuclear energy provides a modest but steady 2% (8.2 GW, underlining its role in providing clean, base-load power with minimal emissions.

As of FY 2026*, India's total installed power capacity from renewable sources (excluding large hydro), including solar, wind, small hydro, and bio-power, stands at approximately 215.523 GW, accounting for **41.13%** of the total. The remaining **58.87%** comes from non-renewable sources such as coal, oil & gas, nuclear, and large hydro power.

This evolving composition reflects India's dual objectives: meeting its rapidly growing power demand while gradually decarbonizing its energy sector. The emphasis on solar and wind points to a broader commitment to sustainable development, while the persistence of coal indicates the challenges of a full-scale energy transition in a growing economy.

Power Generation

India's power generation landscape has witnessed robust growth over the past five years, driven by rising electricity demand from residential, industrial, and infrastructure sectors. The total electricity generation in India increased from 1,373.2 billion units (BU) in FY 2021 to 1,824.2 BU in FY 2025, reflecting a compounded growth rate of approximately 7.3% CAGR. This growth has kept pace with the rise in installed power generation capacity, which expanded from 383.5 GW in FY 2021 to 475.2 GW in FY 2025, underscoring India's commitment to scaling up its energy infrastructure to support economic expansion and rural electrification.

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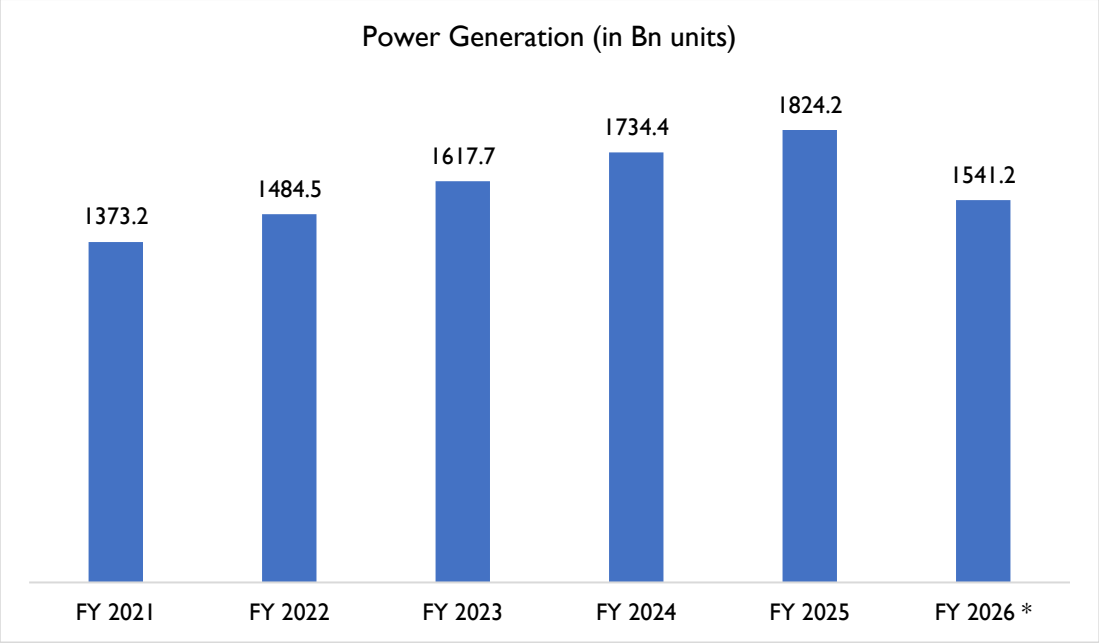

Source: India Climate and Energy Dashboard, MNRE & CEA
*FY 2026- As on 31st January 2026

The generation for FY 2026, reported at 1,541.2 BU as of January 2026 against the planned target of 1,671.02 BU which represent 92.23% achievement against the target. This performance reaffirms the system's operational readiness and capacity utilization amid growing consumption.

A significant portion of India's installed capacity growth is attributed to renewable energy sources—particularly solar and wind, which now collectively contribute over 37.93% of the total installed capacity. However, in actual generation terms, coal-fired power plants remain the mainstay, due to their higher plant load factor (PLF) and consistency in base load supply. In FY 2026, thermal power primary fuel by coal accounted for 221.2 GW, or 42.21% of the total installed capacity and accounted for 70% share in generation, while RES excluding large hydro accounted for 215.52 GW, i.e., 41.13% but contributed just 16.8% share in total generation units with 258.36 BU (in the total 1,541.24 BU)

This divergence between installed capacity and actual generation highlights the ongoing need for energy storage solutions, better grid integration, and round-the-clock renewable power frameworks to make the most of green capacity. Looking ahead, India is expected to continue investing in both conventional and renewable generation capacity, with an increased focus on improving transmission and distribution efficiency, decarbonizing generation, and enhancing grid resilience.

Overall, while India has made significant strides in building renewable generation capacity, its actual utilization and share in total generation still trail conventional sources, particularly coal. This highlights the urgent need for grid modernization, energy storage deployment, and demand-side flexibility to

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Transmission & distribution: Key stakeholders

India's electricity transmission and distribution (T&D) sector functions through a layered institutional structure comprising central government undertakings, state-level utilities, and select private participants. Together, these stakeholders form an interconnected framework that ensures the delivery of electricity from power generation sites to end consumers across the country. Their roles, responsibilities, and decision-making influence span infrastructure development, pricing, grid management, and policy execution, thereby directly shaping the nation's energy security and economic growth.

- **Central Government Stakeholders**

At the apex of the T&D value chain, central Public Sector Undertakings (PSUs) are instrumental in planning, financing, and executing critical infrastructure projects related to generation and interstate transmission. These central entities shape long-term investment priorities, implement national-level energy programs, and uphold the technical standards for power system operations.

- **Power Grid Corporation of India Ltd (PGCIL)** serves as the Central Transmission Utility (CTU) and the backbone of India's high-voltage transmission network. It oversees grid expansion plans, connects regional and state grids, and ensures the smooth transfer of electricity from surplus to deficit regions. PGCIL plays a vital role in grid stability, load dispatch coordination, and integration of renewable energy sources through Green Energy Corridors.
- **NTPC Ltd**, India's largest power generator, contributes not only by producing electricity but also by advising on load balancing, power procurement agreements (PPAs), and long-term planning for grid reliability. Its diversified generation mix (thermal, hydro, solar, wind) gives it strategic input into India's energy transition roadmap.
- **NHPC Ltd** and **Nuclear Power Corporation of India Ltd (NPCIL)** drive strategic decisions in hydropower and nuclear energy, respectively. They liaise with central ministries and regulatory bodies to expand non-fossil generation capacities, balancing sustainability with reliability.
- **Damodar Valley Corporation (DVC)** plays a unique dual role by operating in generation, transmission, and distribution within eastern India, allowing it to implement integrated regional energy strategies.

These PSUs are aligned under the Ministry of Power and actively participate in national forums like the Central Electricity Authority (CEA) and Central Electricity Regulatory Commission (CERC),

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contributing data, insights, and recommendations that influence national electricity tariffs, transmission planning, and policy regulations.

- **State-Level Utilities**

Electricity distribution within states is predominantly managed by State Electricity Boards (SEBs) and their unbundled successors—state-owned distribution companies (DISCOMs) and transmission corporations. These entities are responsible for intra-state transmission, grid maintenance, customer service, and financial management of electricity supply.

Some of the major state utilities include:

- **Andhra Pradesh**: APSPDCL, APEPDCL
- **Delhi**: Delhi Transco Ltd (DTL)
- **Karnataka**: BESCOM, MESCOM, HESCOM, CESC Mysore, GESCOM
- **Maharashtra**: MSEDCL (Mahavitaran)
- **Tamil Nadu**: TANGEDCO
- **Telangana**: TSSPDCL, TSNPDCL
- **Uttar Pradesh**: MVVNL, PVVNL, PuVVNL, DVVNL

These utilities influence decision-making at the grassroots level. They determine local tariff structures in consultation with State Electricity Regulatory Commissions (SERCs), implement central and state government subsidy schemes, and take key decisions related to loss reduction strategies, grid modernization, and service delivery models. Their performance significantly affects consumer satisfaction, the financial viability of the power sector, and the integration of distributed renewable energy systems.

- **Private Sector Participants**

While public players dominate India's power sector, private companies have made substantial inroads, particularly in urban distribution markets. Their entry has often been linked to performance improvements, adoption of advanced technologies, and enhanced consumer engagement models.

- **Tata Power** operates across generation, transmission, and distribution, particularly in Mumbai, Delhi, and Odisha. Its influence lies in the implementation of smart grid technologies, efficient billing systems, and customer-focused service delivery, which serve as models for other utilities.

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- **Adani Electricity Mumbai Ltd (AEML)** ensures stable supply in the Mumbai region and invests in digital infrastructure and renewable energy procurement, setting new benchmarks in urban power management.
- **BSES Rajdhani Power Ltd (BRPL)** and **BSES Yamuna Power Ltd (BYPL)** function in parts of Delhi and play a vital role in bringing down Aggregate Technical and Commercial (AT&C) losses, enhancing metering accuracy, and offering digital tools for customer interface under the oversight of the Delhi Electricity Regulatory Commission (DERC).

These private firms collaborate closely with regulators, technology providers, and consumers. Their decision-making influence extends to investment planning, customer pricing, demand forecasting, and grid automation.

Each stakeholder group has a distinct sphere of influence. Central PSUs shape national energy policy and long-distance grid planning; state utilities implement grassroots distribution and manage consumer connections; and private players push innovation and efficiency in service delivery. Together, they contribute to tariff setting, network expansion, quality standards, and investment flows. Their collaboration with regulatory bodies and the government is essential in achieving national targets such as 24/7 power for all, energy transition, and reduction of transmission and distribution losses.

India's electricity transmission and distribution sector functions as a coordinated ecosystem, where stakeholders do far more than just maintain infrastructure; they actively shape the nation's energy future. Central PSUs like NTPC, PGCIL, and NPCIL not only execute projects but also influence national energy policy, technology adoption, and long-term planning through continuous engagement with the Ministry of Power and regulatory bodies. These entities are instrumental in deploying large-scale infrastructure, balancing regional demand-supply mismatches, and enabling renewable integration through nationwide transmission corridors. State utilities act as the critical interface between policy and consumers, translating central directives into operational programs, managing tariffs, subsidy flows, and last-mile service quality. Meanwhile, private sector entities are becoming innovation drivers, introducing digital tools, demand-side management, and grid automation that improve efficiency and transparency. Regulatory commissions, both at the central and state level, serve as neutral arbiters, ensuring stakeholder accountability, fair pricing, and service standards. Collectively, these actors form an interlinked matrix where technical performance, financial viability, and policy direction are co-determined, making India's power sector one of the most dynamic and decentralized public service systems in the world.

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Power generation scenario in India: demand v/s supply

India's power demand and supply scenario has significantly improved in recent years, with both energy and peak power requirements rising steadily in line with rapid economic expansion, urbanization, and electrification. From FY 2020 to FY 2024, the country's energy requirement increased from 1,291.01 billion units (BU) to 1,626.13 BU, reflecting a compound annual growth rate (CAGR) of 5.91%. Meanwhile, peak power demand surged from 183.80 GW in FY 2020 to 243.27 GW in FY 2024, registering a CAGR of 7.22%. This increase in demand stems from rising residential and industrial consumption, growing use of electrical appliances, and the addition of new commercial infrastructure.

Year	Energy (BU)			Peak (GW)		
	Requirement	Availability	Deficit (%)	Requirement	Availability	Deficit (%)
FY 2020	1291.01	1284.44	0.5%	183.80	182.53	0.7%
FY 2021	1275.53	1270.66	0.4%	190.20	189.40	0.4%
FY 2022	1379.81	1374.02	0.4%	203.01	200.54	1.2%
FY 2023	1513.50	1505.91	0.5%	215.89	207.23	4.0%
FY 2024	1626.13	1622.02	0.3%	243.27	239.93	1.4%
FY 2025	1693.96	1692.37	0.1%	249.85	249.85	0%
FY 2026*	1285.91	1285.55	0.1%	242.77	242.49	0.1%

Source: CEA, Ministry of Power . * Data is cumulative for Apr-Dec 2025)

Despite this growing load, India has maintained an exceptionally low energy deficit, consistently staying below 0.5%. In FY 2020, the energy deficit was 0.5%, and by FY 2024, it had declined further to just 0.3%. The peak power deficit, while more variable, also showed improvement: it peaked at 4.0% in FY 2023 due to operational constraints and weather-induced stress on the grid but was reduced to 1.4% in FY 2024, indicating improved system responsiveness and reserve capacity management.

By FY 2026, according to data available up to December 2025, the energy requirement stood at 1,285.91 BU, with availability at 1,285.55 BU, marking a minimal deficit of 360 MU. On the peak side, demand and availability were perfectly aligned at 242.77 GW and 242.49 GW respectively, resulting in an effectively negligible deficit (0.01%).

This narrowing of the gap between power demand and supply is not only a result of added generation capacity and improved grid infrastructure, but also of effective demand-side interventions, particularly the rollout of Time-of-Day (ToD) tariffs. As highlighted by the International Energy Agency (IEA), India's power ministry introduced static ToD tariffs for industrial, commercial, and public service consumers, where electricity rates are higher between 6:00 PM and 10:00 PM, a critical peak window for power demand.

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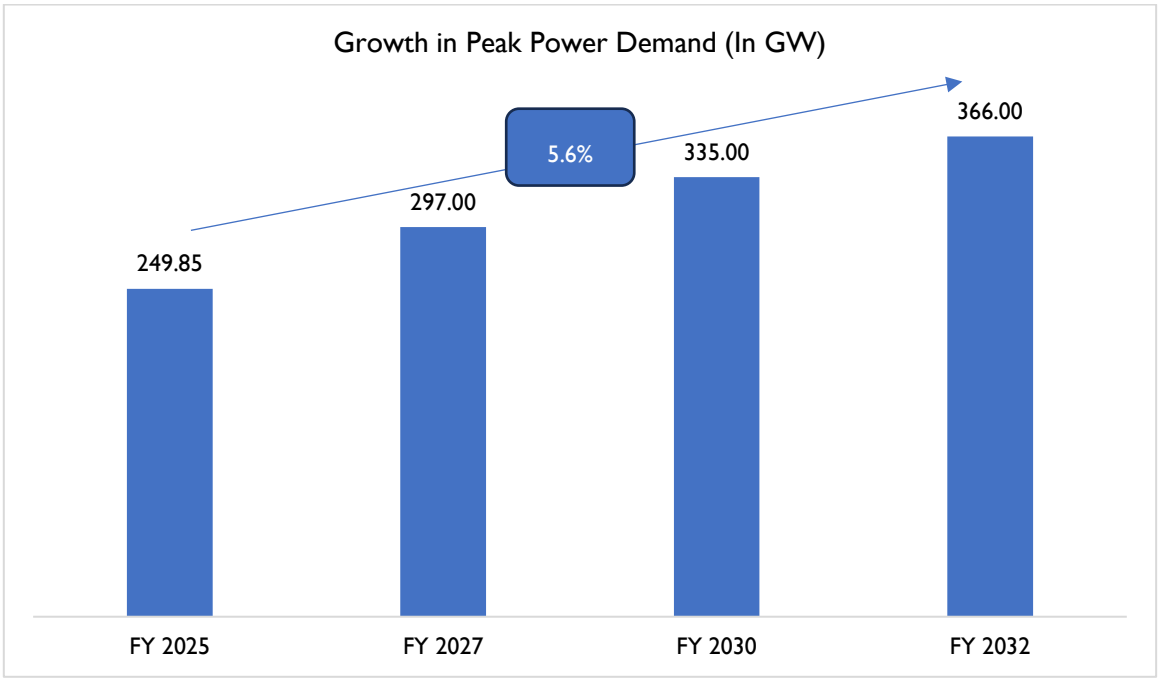
In August 2023, the Ministry of Power further strengthened this mechanism by mandating that during solar hours, electricity tariffs must be at least 20% lower, while during peak hours they should be at least 20% higher. This policy became mandatory from April 1, 2024, for all medium-to-large commercial and industrial consumers and will be extended to smaller consumers (below 10 kW) from April 1, 2025. These pricing signals are effectively helping to flatten demand curves and optimize the use of daytime renewable generation, particularly solar. India's power sector is demonstrating commendable resilience and modernization. With minimal deficits, rising capacity, and evolving pricing mechanisms like ToD, the sector is increasingly well-equipped to meet growing energy needs efficiently and sustainably. However, continuous investment in infrastructure, renewable integration, and demand management will remain crucial to sustaining this progress as consumption patterns evolve.

Expected growth in power demand in India

India's power demand is projected to witness robust growth over the coming years, driven by rapid urbanization, rising incomes, and expanding access to energy-intensive appliances such as air conditioners.

According to estimates, peak electricity demand, which stood at ~249.85 GW in FY 2025, is expected to grow to 297 GW by FY 2027, and further to 335 GW by FY 2030, ultimately reaching 366 GW by FY 2032. This translates to a CAGR of approximately 5.6% between FY 2025 and FY 2032, underscoring the rising electricity intensity of India's economic and residential activity.



Source: Ministry of Power, Industry Sources, Press Information Bureau

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A major contributor to this rising demand is the rapid adoption of air conditioning systems. While currently fewer than 20% of Indian households own air conditioners, the cooling sector already contributed an estimated 60 GW to the country's peak load in 2024. According to the International Energy Agency (IEA), AC sales surged to 14 million units in 2024, marking a 27% increase over the 11 million units sold in 2023. This surge is expected to continue, with cooling equipment projected to account for nearly one-third of India's total peak load by 2030, potentially reaching 140 GW. The impact of temperature on electricity consumption is also becoming more pronounced: in 2024, each 1°C increase in daily average temperature pushed daily peak demand up by over 7 GW, a figure that could exceed 11 GW per degree by 2027, more than double the sensitivity observed in 2019.

At the same time, changing agricultural electricity consumption patterns are reshaping India's load curve. Historically, agricultural pumps were heavily used at night, often relying on subsidised or free electricity supplied through dedicated feeders. In states like Rajasthan, agriculture accounts for as much as 40% of total electricity demand. Previously, this contributed significantly to evening peak loads, particularly between 7:00 and 8:00 PM. However, this pattern has begun shifting due to policy interventions.

The launch of the PM-KUSUM scheme in March 2019, and its expansion in January 2024, has been pivotal in altering agricultural energy usage. By subsidising solar pump installations and incentivising daytime irrigation through the integration of distributed solar PV, the programme has shifted much of the agricultural load to midday hours, aligning better with solar generation peaks. This not only helps flatten evening peak demand but also supports India's broader renewable energy integration goals. Additionally, it has helped curb diesel usage in farming, leading to both cost savings and emissions reductions.

Together, these developments point to a future in which India's power demand will grow significantly, not only in magnitude but also in complexity. Managing this demand will require smart load management, further infrastructure upgrades, and continued policy support to integrate variable renewable energy while ensuring grid stability.

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Power Transmission & Distribution segment in India

Current Scenario: Mapping the power T&D infrastructure in India

The power transmission and distribution (T&D) framework in India forms the critical backbone of the country's electricity supply chain, bridging the gap between power generation sources and end consumers across diverse geographies. Given India's uneven distribution of natural energy resources, such as coal concentrated in the central and eastern regions, hydroelectric potential located mainly in the Himalayan belt, and wind and solar resources dominant in states like Tamil Nadu, Rajasthan, Gujarat, Andhra Pradesh, and Ladakh, a robust and expansive transmission network has become vital for balancing supply and demand across the country. To address this geographical mismatch between energy resource locations and demand centers, largely situated in the northern, western, and southern parts of India, a strong, interconnected national grid has been developed. The transmission infrastructure has grown significantly, enabling the seamless transfer of power from surplus regions to deficit areas. As of 28th February 2026, India's transmission network comprises approximately 503,661 circuit kilometers (ckm) of transmission lines and 14,28,921 MVA of transformation capacity. Notably, the inter-regional transmission capacity has expanded by 169.3% since 2014, reaching 1,428,921 MW, which has been crucial in improving overall grid reliability and efficiency.[4]

Infrastructure growth continues to be robust: during April-Feb FY 2026, 9,287 ckm of lines and 91408 MVA new substation capacity were added, both exceeding revised targets. Intra-state grids account for a growing share, although interstate projects under tariff-based bidding still drive much of the capacity expansion.

The expansion roadmap is bold: the latest National Electricity Plan envisions adding nearly 191,000 ckt km of new lines and 1,270 GVA of substation capacity between 2022 and 2032, pushing transmission network length to around 648,000 ckt km and inter-regional capacity to approximately 168 GW by 2032.[5]

India's transmission and distribution (T&D) infrastructure is being strengthened through a series of transformative trends aimed at improving grid reliability, efficiency, and sustainability. Utilities are increasingly adopting smart technologies, such as SCADA systems, smart meters, High Voltage Direct Current (HVDC) links, and High-Temperature Low-Sag (HTLS) conductors, to improve real-time monitoring, reduce losses, and ensure efficient load management. The deployment of Battery Energy Storage Systems (BESS) in states like Maharashtra and Rajasthan is also gaining momentum, supported by government incentives such as waived transmission charges until June 2028. Urban infrastructure

[4] CEA
[5] Industry Sources

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is being future proofed with underground cabling projects in major cities like Bengaluru, significantly reducing technical losses and enhancing supply resilience in high-density areas.

In parallel, India is advancing regional connectivity through cross-border transmission initiatives and aligning with global programs such as the "One Sun, One World, One Grid" initiative to promote renewable energy exchange and regional grid stability. The private sector continues to play a critical role, with companies like Sterlite Power and Adani leading large-scale interstate transmission projects, bringing in innovation, faster execution, and capital investment. These collective efforts have yielded measurable outcomes, peak and energy deficits have fallen sharply to just 0.1% by FY 2026*, compared to over 0.7% in FY 2020. The national grid, which recorded a peak demand of nearly 250 GW in FY 2025, has successfully absorbed growing loads due to enhanced capacity and operational efficiencies. This comprehensive strengthening of T&D systems positions India for a more flexible, robust, and renewable-ready energy future.

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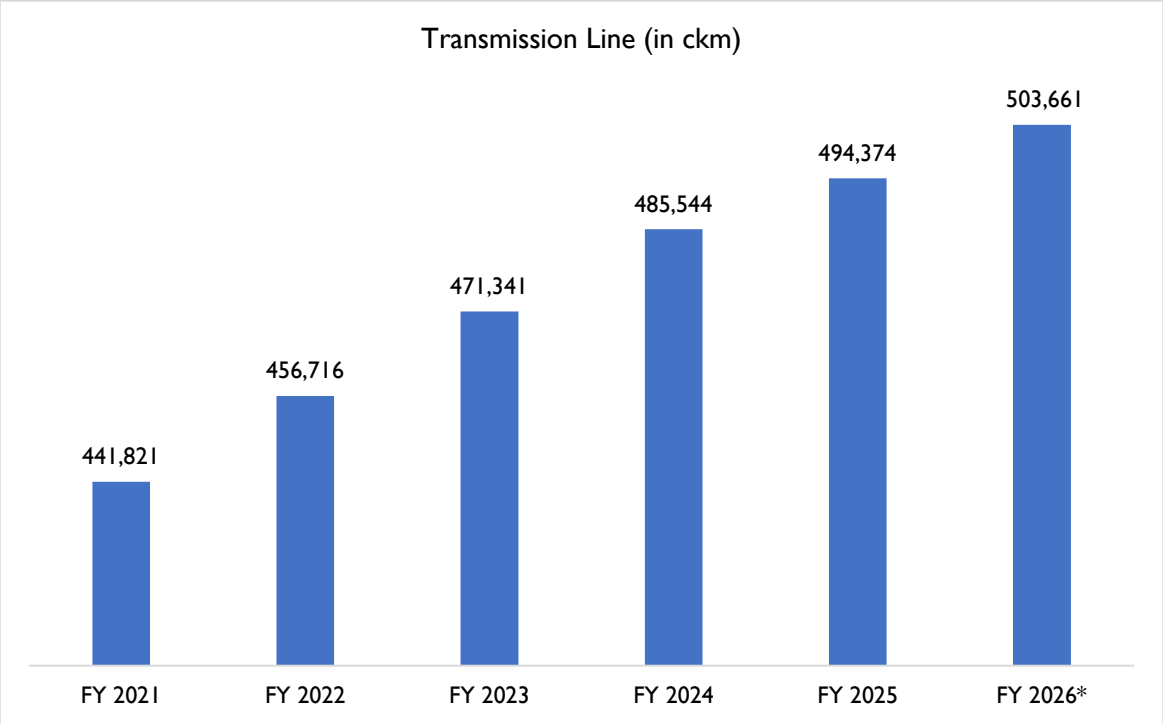
Historical growth trend

India's transmission line network has exhibited steady growth over the past five years, reflecting the country's ongoing efforts to enhance its power evacuation capacity and improve nationwide grid connectivity. In FY 2021, the total length of transmission lines stood at approximately 4,41,821 circuit kilometers (ckm). This expanded consistently each year, reaching 4,56,716 ckm in FY 2022, 4,71,341 ckm in FY 2023, and 4,85,544 ckm in FY 2024. As of FY 2025, the network had grown to 4,94,374 ckm, and by FY 2026 (till 28th Feb), it further inched up to 503,661 ckm.



Source: India Climate and Energy Dashboard, NITI Aayog
*FY 2026- As on 28 February 2025

India's total transmission line length stands at 503,661 ckm, comprising 1,89,823 ckm under central utilities, 2,69,034 ckm under state utilities, and 44,804 ckm managed by joint ventures or private players.[6] This reflects growing participation of private entities in a domain traditionally dominated by central and state transmission companies. This gradual yet consistent expansion, adding over 61,840 ckm between FY 2021 and FY 2026*, highlights India's focus on building a more resilient and integrated transmission infrastructure. The significant capacity addition has supported better integration of renewable energy, facilitated long-distance inter-regional power transfer, and helped reduce power deficits.

India's transmission infrastructure has steadily expanded in terms of both line length and transformation capacity over the last several years, reflecting its commitment to ensuring a reliable

[6] NITI Aayog

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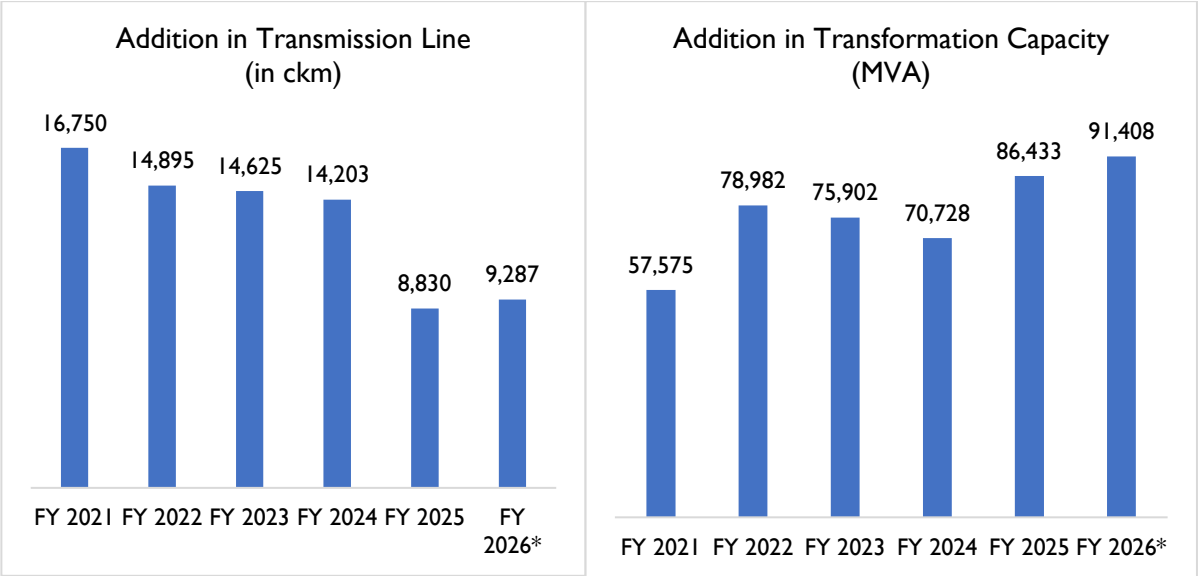
and efficient electricity supply across the country. However, a notable shift in the pace and pattern of additions is becoming increasingly evident.



Source: Ministry of Power
*FY 2026- As on 28 Feb 2026

Annual addition in transmission line indicated improvement in FY 2026 against FY 2025; however, it remained significantly lower compared to annual additions observed between FY 2021- 24. The country consistently added over 14,000 circuit kilometres (ckm) of transmission lines annually, with FY 2021 witnessing the highest addition in that period at 16,750 ckm. This sustained expansion supported inter-regional connectivity, rural electrification, and renewable integration. In FY 2025, the addition of new transmission lines dropped to 8,830 ckm, signaling a transition from rapid network build-out to optimization and capacity augmentation within existing corridors.

In contrast, transformation capacity, the ability to step voltage levels up or down at substations, has shown robust growth throughout this period. Starting from 57,575 MVA in FY 2021, the annual addition of transformation capacity surged to 91,408 MVA in FY 2026(till Feb 2026), reflecting increasing emphasis on strengthening the load-handling capacity of the grid rather than only expanding its physical footprint.

This evolving trend suggests India is maturing in its T&D infrastructure approach, from physical expansion to technological deepening and grid optimization, aligning with its broader energy transition and renewable integration goals.

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Key Demand Drivers: Analysis of factors driving the growth of power T&D infrastructure in India.

Economic Growth and Industrialization

India's rapid economic growth has significantly increased electricity demand from core sectors such as steel, cement, chemicals, textiles, and manufacturing. These energy-intensive industries require stable, high-capacity power supply, which can only be delivered through a robust transmission and distribution network. As India aims to become a USD 5 trillion[7] economy, the need for extensive and reliable power supply is growing, driven by large-scale infrastructure like industrial parks, data centres, and logistics hubs that require 24x7 high-voltage electricity, thus pushing the development of Extra High Voltage (EHV) transmission lines and dedicated substations. The projections for demand for electricity account for the impact of increased adoption of electric vehicles, installation of solar rooftops, green hydrogen production, and the Saubhagya scheme, highlighting the need for continuous investment in transmission corridors, load dispatch centres, and industrial grid connectivity.

Urbanization and Population Growth

India is witnessing one of the fastest urban expansions globally. By CY 2036, over **600 million people** are expected to reside in urban areas, increasing the energy requirements of high-density cities. Urbanization brings higher per capita electricity consumption, more commercial establishments, and energy-intensive infrastructure such as metros, high-rises, malls, and electric mobility. As a result, urban areas require sophisticated distribution systems like underground cabling, ring main units, and GIS substations as well as strong interconnection with regional transmission networks. This urban energy load necessitates upgrades to both intra-city distribution and inter-city transmission networks to avoid grid congestion and blackouts.

Government Policy and Infrastructure Investment

A major enabler of T&D infrastructure growth is strong government support through policies and public investment schemes. The Revamped Distribution Sector Scheme (RDSS) aims to improve the operational efficiency and financial viability of DISCOMs by providing INR 3.03 lakh crore for distribution infrastructure, loss reduction, and smart metering. Additionally, the National Infrastructure Pipeline (NIP) allocates INR 9.15 lakh crore to transmission sector projects. These investments are directly facilitating the development of new transmission substations, laying of high-

7 Ministry of Commerce & Industry, Press Information Bureau

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voltage transmission lines, feeder segregation, and adoption of smart grid technologies all vital for reliable power transmission and distribution across states.

Rural Electrification and Last-Mile Connectivity

India has achieved near-universal village electrification under programs such as Saubhagya and DDUGJY, but the focus has now shifted to improving power quality and reliability for rural households, agriculture, and rural industries. This shift is driving investment in strengthening rural feeders, building new substations, replacing aging transformers, and laying HT/LT lines. Electrification of rural transportation (e-buses and trains) and agricultural mechanization further demands reliable power. Rural grid strengthening is particularly important in states like Bihar, Jharkhand, Odisha, and the North East, where infrastructure is still underdeveloped.

Smart Grid and Digital Infrastructure[8]

India is moving toward intelligent and responsive grid infrastructure through the deployment of smart meters, SCADA, GIS-based asset mapping, and automated substations. These technologies help reduce technical and commercial losses, improve outage response, and enable remote diagnostics. Under RDSS, the government plans to install 250 million (25 crore) smart meters by CY 2025, which will be integrated with digitally enabled power distribution networks. The digital transition mandates the upgrade of legacy T&D systems to accommodate real-time data, control, and monitoring pushing the sector to modernize its architecture at both transmission and distribution levels.

Integration of Renewable Energy[9]

India's push to install 500 GW of non-fossil capacity by 2030 is a significant demand driver for the expansion of power T&D infrastructure. The bulk of this renewable energy especially solar and wind is being developed in remote regions like Rajasthan, Gujarat, and Tamil Nadu, far from major consumption centres. This geographical disconnect necessitates a strong transmission backbone to evacuate and integrate renewable power into the grid. As per the Central Electricity Authority (CEA), achieving this target will require 50,890 circuit kilometres of new transmission lines and 433,575 MVA of substation capacity by 2030. This scale of infrastructure is critical for ensuring seamless renewable energy flow and grid reliability.

Growth of Green Hydrogen and Emerging Energy Clusters[10]

[8] Ministry of Power, Press information Bureau
[9] Ministry of Power
[10] Department of New and Renewable Energy

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Under the National Green Hydrogen Mission, India aims to become a global hub for the production, use, and export of green hydrogen, targeting the development of at least 5 MMT (Million Metric Tonnes) per annum of green hydrogen capacity supported by 125 GW of associated renewable energy by CY 2030. This will require significant upgrades in power Transmission & Distribution (T&D) infrastructure to support emerging energy clusters, particularly in coastal and industrial states like Gujarat, Tamil Nadu, and Odisha. These hubs will need dedicated high-capacity transmission corridors, integration with grid storage, and robust grid connectivity to manage continuous high-load demand. The mission is expected to attract over INR 8 lakh crore in investments, create 6 lakh jobs, reduce fossil fuel imports by more than INR 1 lakh crore, and cut greenhouse gas emissions by 50 MMT annually. This surge in energy demand and infrastructure development is reshaping the scale and geography of T&D planning across India.

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Capital Expenditure Trend in Power T&D

Insights on investments planned in power T&D sector: flagship policies, Ongoing projects / Recently announced projects

India's capital expenditure trend in the power Transmission & Distribution (T&D) sector has seen a strong upward trajectory, reflecting a strategic shift from generation-heavy investments to grid-centric development. India's Transmission & Distribution (T&D) sector is poised for a major expansion, with an estimated capital expenditure of INR 9.1 trillion expected between FY2025 and FY2032. This shift is largely driven by the country's growing renewable energy footprint and the need for a more robust and flexible grid. With India targeting 500 GW of non-fossil capacity by 2030, the focus has moved to strengthening inter-regional connectivity, integrating variable renewable sources, and enhancing the reliability of supply. Investment in high-voltage transmission corridors, such as Green Energy Corridors and HVDC lines from regions like Khavda and Ladakh, exemplify this trend. Simultaneously, large-scale modernization of the distribution segment is underway through the INR 3.03 trillion[11] Revamped Distribution Sector Scheme (RDSS), aimed at reducing technical losses, digitizing infrastructure, and implementing smart metering.

Policy reforms have also catalyzed private sector involvement, particularly through the Tariff-Based Competitive Bidding (TBCB) model, which has allowed private players like Adani Transmission and Sterlite Power to gain a significant foothold alongside Power Grid Corporation of India Ltd. (PGCIL). Moreover, central support mechanisms such as the waiver of ISTS charges for renewable power and government-backed funding for battery energy storage systems (BESS) have further accelerated the pace of investment. Overall, T&D capital expenditure in India is no longer limited to physical expansion but is increasingly focused on grid intelligence, digital integration, and resilience—marking a clear evolution toward a smarter and greener power infrastructure.

India's Power Transmission & Distribution (T&D) sector is experiencing strong capital expenditure growth, backed by rising power demand, renewable integration targets, and the need for grid modernization. Around INR 25 lakh crore is expected to be invested over the next five years in expanding generation, transmission lines, substations, and storage infrastructure.

The government aims to add over 17,000 circuit kilometers of transmission lines and 80,000 MVA of transformation capacity annually to support 500 GW of renewable energy by 2030. This is further driven by increased demand from sectors like data centres, cement, and steel, along with rising public

[11] Ministry of Power, Press Information Bureau

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capex allocation. Upgrades such as HVDC corridors, smart grids, and underground cabling are also accelerating, making T&D a key pillar in India's infrastructure growth story.[12]

Flagship Policies

- **Revamped Distribution Sector Scheme (RDSS):**

The Central Government has approved the RDSS with an outlay of INR 3,03,758 crore for FY 2022 to FY 2026. This scheme is designed to improve the operational and financial health of state-owned distribution companies (DISCOMs), with a focus on reducing Aggregate Technical and Commercial (AT&C) losses to 12-15% and eliminating the gap between average cost of supply and average revenue realized (ACS-ARR) by FY 2025. The scheme supports prepaid smart metering, system metering, and modernization of distribution infrastructure. Funds are disbursed based on performance benchmarks and action plans, which are subject to annual appraisal.

- **Reforms-Linked Distribution Scheme (Budget 2025):**

The Union Budget 2025-26 introduced a new scheme with an allocation of INR 16,021 crore to incentivize state-level reforms in power T&D infrastructure. States are offered additional borrowing limits (0.5% of GSDP) contingent on implementing reforms, including public-private partnerships (PPP), privatization, and adoption of franchisee models. The scheme aims to ensure 24x7 sustainable power for all and a financially viable distribution sector.

- **Green Energy Corridor (GEC):**[13]

The GEC initiative is being implemented in two phases. GEC-I (inter-state transmission) was completed in 2020, enabling the evacuation of 6 GW of renewable energy. GEC-II (intra-state transmission) is currently underway, with an outlay of INR 12,031 crore, aiming to add 10,750 circuit kilometers (ckm) of transmission lines and 27,500 MVA of substation capacity across seven states by March 2026. This will connect an additional 20 GW of renewable energy to the grid.

Ongoing and Recently Announced Projects

- **Transmission Network Expansion:**

The Ministry of Power, under the leadership of Prime Minister Shri Narendra Modi, has taken significant steps to strengthen India's transmission infrastructure as part of its 100-day agenda. The finalized National Electricity Plan (2023-2032) outlines a comprehensive strategy to meet a projected peak demand of 458 GW by 2032. This includes expanding the transmission network from 4.85 lakh

[12] Industry Sources
[13] Ministry of Power

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ckm in 2024 to 6.48 lakh ckm and increasing transformation capacity from 1,251 GVA to 2,342 GVA. Nine new High Voltage Direct Current (HVDC) lines with a total capacity of 33.25 GW will be added, and the inter-regional transfer capacity will rise from 119 GW to 168 GW. With a planned investment of INR 9.15 lakh crore, these developments will facilitate the integration of renewable energy and green hydrogen into the grid, while also ensuring system reliability and energy access across the country.

To support renewable energy evacuation, transmission infrastructure for 50.9 GW of capacity was approved within the first 100 days, with projects spread across key states such as Gujarat, Rajasthan, Tamil Nadu, and Karnataka. This includes infrastructure for offshore wind power and pumped storage projects, critical to India's clean energy transition. As part of this effort, 42 GW of capacity has already been completed, 85 GW is under construction, and 75 GW is under bidding. The remaining 82 GW will be approved in due course. Additionally, 83,596 Particularly Vulnerable Tribal Group (PVTG) households have been electrified in remote regions, and 49,512 agricultural feeders with high load have been segregated to ensure reliable daytime power for farmers. These initiatives reflect the Ministry's focus on expanding access, enhancing system resilience, and supporting the transition to a sustainable energy future.

- **Tariff-Based Competitive Bidding (TBCB):**

Since 2009, 135 interstate transmission system (ISTS) projects have been bid out, with 60 commissioned as of January 2025. Of these, 61 projects have been secured by Power Grid Corporation of India Limited (PowerGrid) and 74 by private players. This mechanism has encouraged significant private sector participation in the transmission segment.

- **High-Voltage Direct Current (HVDC) Projects:**[14]

India plans to expand its HVDC transmission capacity by 33 GW between FY 2022 and FY 2032 to support long-distance, inter-regional power transfer and integration of renewable energy, as per the National Electricity Plan (Transmission) 2024. This is part of a broader transmission expansion of over 1,91,000 circuit-km of lines and 1,270 GVA of transformation capacity by FY 2032, aimed at strengthening grid stability and enabling green energy hubs.

- **Green Power Evacuation:**

Under the GEC-II scheme, intra-state transmission systems are being developed in eight renewable-rich states for the evacuation of approximately 24 GW of renewable energy. As of now, around 18.72 GW of RE capacity has already been commissioned and connected to the grid through projects

[14] Ministry of Finance, Press Information Bureau

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established under InSTS-GEC. Most of the remaining projects are nearing completion, with certain states receiving extensions until FY 2025 due to delays in land acquisition and statutory clearances.

Investment outlook by Indian Government in modernizing power T&D infrastructure in India

- **Scale of Investment and Coverage**

The Government of India has committed to a massive investment of over INR 9.1 trillion[15] to be spent on power transmission and distribution (T&D) infrastructure between FY25 and FY32. This plan, outlined in the National Electricity Plan (NEP), aims to meet the country's growing electricity demand and facilitate the integration of renewable energy and green hydrogen into the grid.

- **Transmission Network Expansion**

The plan targets the addition of more than 1,91,000 circuit kilometers (ckm) of transmission lines at 220 kV and above by 2032. Alongside, the transformation capacity across central and state networks will be expanded by 1,274 GVA (1,274,000 MVA), ensuring robust power transfer capability across the country.

- **High Voltage Direct Current (HVDC) and Advanced Technologies**

Nine new HVDC bi-pole links with a total capacity of 33.25 GW are planned, supplementing the existing HVDC network. The plan also includes the upgradation of the grid to 1200 kV AC systems and the adoption of advanced technologies such as battery energy storage systems (BESS), flexible AC transmission systems (FACTS), and digital management tools.

- **Renewable Energy Integration**

A central focus is on integrating 500 GW of renewable energy by 2030 and over 600 GW by 2032. The transmission system will be expanded to efficiently evacuate power from renewable-rich regions to demand centers. Inter-regional transmission capacity will be increased from 119 GW in 2025 to 143 GW by 2027 and 168 GW by 2032, supporting large-scale renewable energy and green hydrogen projects.

- **Modernization and Digitalization**

The plan emphasizes the deployment of smart grids, advanced metering infrastructure (AMI), GIS substations, high-capacity conductors, and underground cabling to address urbanization and land challenges. Digital project management, AI-based planning, and modular construction methods will be used to accelerate implementation and improve efficiency.

[15] Ministry of Power, Press Information Bureau

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- **Public-Private Partnerships and Competitive Bidding**

Expansion of the T&D sector will leverage tariff-based competitive bidding (TBCB) to encourage private sector participation. Over 135 interstate transmission projects have already been bid out since 2009, and the government is promoting the use of green bonds and financial reforms to attract more private investment.

- **Flagship and Regional Projects**

Key projects include the Green Energy Corridor (GEC) for renewable energy evacuation in eight states, and High-Capacity Power Transmission Corridors (HCPTCs) for bulk power transfer from resource-rich regions. Intra-state system strengthening is prioritized in states such as Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, and Tamil Nadu.

Investment outlook/announcements by multilateral agencies

- **Major Financing for Low-Carbon Transition**

The World Bank has demonstrated strong and sustained support for India's low-carbon energy transition. In June 2024, it approved an additional USD 1.5 billion in financing[16], following a similar commitment in June 2023. This funding is directed towards expanding renewable energy capacity, developing a robust green hydrogen market, and modernizing India's power grid. Key focus areas include incentivizing battery energy storage and updating grid codes to facilitate seamless integration of renewable energy sources.

- **Green Hydrogen and Renewable Integration**

Through these initiatives, the World Bank aims to enable the annual production of at least 450,000 metric tons of green hydrogen and installation of 1,500 MW of electrolyzers starting FY25/26. These efforts are expected to significantly boost renewable energy capacity and contribute to an annual reduction of 50 million tons of carbon emissions.

- **Transmission Infrastructure Projects**

Targeted investments have been made to strengthen transmission infrastructure, such as a USD 25 million loan for the Rewa Solar Park's transmission facilities, with a total allocation of USD 100 million for shared infrastructure at the park. These projects are critical for efficient evacuation and integration of renewable energy into the national grid.

[16] World Bank

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- **Intra-State Transmission Strengthening**

The World Bank has also supported state-level utilities, such as Jharkhand Urja Sancharan Nigam Limited, in constructing new substations, transmission lines, and upgrading scheduling and communication systems. These projects are often complemented by technical assistance aimed at institutional development and capacity building.

- **Distribution and Capacity Building**

World Bank–backed projects have contributed to strengthening and augmenting intra-state transmission, sub-transmission, and distribution networks across several states. As of September 2024, these interventions have achieved over 98% of their targeted construction and rehabilitation of lines and substations, underscoring the effectiveness of the support.

- **Broader Multilateral Support**

Beyond direct financing, multilateral agencies provide technical assistance for project management, procurement, financial management, and automation of business processes within state utilities. This holistic approach ensures not only infrastructure development but also sustainable capacity building and institutional reform.

- **Long-Term, Concessional Lending**

A hallmark of multilateral support is the provision of long-term, concessional loans. For instance, the World Bank's loan for the Rewa Solar Park transmission infrastructure is structured with a 40-year tenure and a minimal 0.25% interest rate, making it highly attractive for large-scale, long-gestation infrastructure projects.

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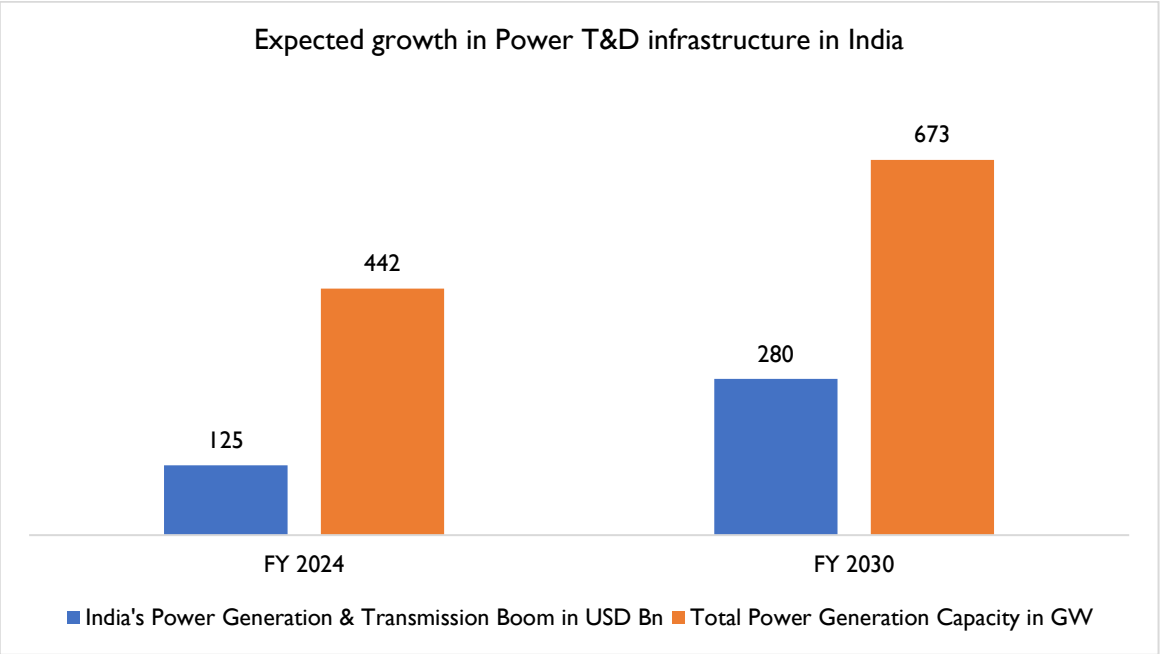
Growth Forecast

Expected growth in power T&D infrastructure in India (till 2030)



Source: D&B Research, Secondary Research

India's power generation and transmission sectors are projected to **expand 2.2 times, reaching USD 280 billion** between FY24 and FY30, compared to FY17- 23. The country's total power generation capacity is expected to increase from **442 GW in FY24 to 673 GW by FY30**. Thermal power plants, operating at a 65-70% plant load factor (PLF), will continue to play a key role, with the average annual PLF anticipated to exceed peak levels observed in FY08 by FY28. Renewable energy capacity is also set to expand, with annual capacity additions projected to increase **3.5 times** between FY24 and FY27 compared to FY10- 20, aligning with India's target of achieving **500 GW of renewable energy by 2030**.

India's Power Transmission & Distribution (T&D) infrastructure is expected to grow, supported by government initiatives and increasing electricity demand. The **"One Nation – One Grid – One Frequency"** initiative has interconnected regional grids, enhancing power availability and transfer across the country.

The government plans to add approximately 17,500 ckm of transmission lines and 80,000 MVA of transformation capacity annually over the next three years. This expansion is aimed at integrating over 500 GW of renewable energy capacity by 2030, supporting India's energy transition efforts.

The power transmission sector is also expected to grow, with the bid pipeline increasing from less than INR 150 billion in February 2021 to INR 1 trillion in projects currently up for bidding. This growth is being driven by the government's focus on expanding renewable energy capacity and increasing demand for storage, green hydrogen, data centers, and electric vehicle infrastructure.

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Evolving trends & developments

- **Surge in Capital Expenditure and Infrastructure Expansion**

India's T&D infrastructure is undergoing unprecedented scale-up, driven by the need to support a growing population, rapid industrialization, and the country's clean energy transition goals. Between FY2025 and FY2032, total capital expenditure in the T&D sector is projected to reach INR 9 trillion (~USD 110 billion). The government has laid out plans to add approximately 114,687 circuit kilometers (ckm) of transmission lines and 776,330 MVA of transformation capacity by FY2027.[17] This massive expansion is closely tied to the goal of integrating over 500 GW of non-fossil fuel capacity into the grid by 2030, especially from solar and wind energy-rich states like Rajasthan, Gujarat, and Tamil Nadu.

- **Increased Role of the Private Sector through Competitive Bidding**

While PSUs like Power Grid Corporation of India Ltd. (PGCIL) remain dominant, there has been a marked shift toward Tariff-Based Competitive Bidding (TBCB). This model has led to increased private sector involvement from firms like Sterlite Power, Adani Transmission, and IndiGrid. In fact, more than 75% of recent TBCB projects have been awarded to private developers. The transmission project bid pipeline has jumped significantly, from less than INR150 billion in 2021 to around INR 650 billion by 2025, and is expected to hit INR 1 trillion soon,[18] reflecting investor confidence and growing project opportunities in renewable evacuation, storage, and cross-border transmission.

- **Technological Upgradation and Smart Grid Deployment**

To make the power system more efficient and future-ready, utilities are rapidly adopting Smart Grid technologies. This includes the implementation of:

- Supervisory Control and Data Acquisition (SCADA) systems for real-time monitoring
- High Voltage Direct Current (HVDC) links for long-distance power transfer
- High-Temperature Low-Sag (HTLS) conductors to enhance capacity
- Gas-Insulated Substations (GIS) and XLPE cables in urban settings
- Smart meters to improve billing efficiency and reduce aggregate technical and commercial (AT&C) losses

These upgrades are vital for minimizing outages, integrating distributed renewable energy, and improving demand-response capabilities.

[17] Industry Sources
[18] Industry Sources

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- Grid-Scale Battery Energy Storage System (BESS) Integration

With rising solar and wind penetration, battery energy storage systems (BESS) are becoming crucial for balancing supply and demand. The Ministry of Power has launched schemes with Viability Gap Funding (VGF) to promote storage adoption. For example, Rajasthan was recently allocated 4,000 MWh of BESS projects with central financial assistance of INR 720 crore[19]. Companies like IndiGrid and JSW Energy are aggressively bidding for large-scale storage tenders (e.g., 500 MW / 1,000 MWh). The national target is to achieve 30 GWh of BESS by 2030.

- **Cross-Border Power Connectivity and "One World, One Grid" Vision**

India is also expanding its power trade capabilities under the vision of **"One Sun, One World, One Grid."** Cross-border transmission lines have been built with Nepal, Bhutan, and Bangladesh, and future connectivity with Sri Lanka and Southeast Asia is being explored. These projects not only stabilize domestic grid operations but also position India as a regional energy hub, enabling renewable energy trade and energy diplomacy.

- **Significant Reduction in Power Deficits**

Thanks to expanded capacity and smarter operations, India has drastically reduced its peak and energy deficits from over 4% in 2014 to just 0.4% by 2021. Moreover, the grid successfully handled a record peak power demand of more than 250 GW in FY 2025 with minimal congestion or curtailment. This indicates the effectiveness of recent transmission upgrades and robust demand management practices.

India's power T&D infrastructure is evolving into a digitally enabled, decentralized, and renewable-integrated system. Supported by significant policy backing, capital investment, and technology deployment, the country is building a flexible and reliable grid that not only meets current demand but is also capable of supporting EV charging, green hydrogen production, and distributed renewables. The synchronized efforts of central agencies, private players, and state utilities are ensuring that the grid is well-prepared for the energy needs of a USD 5 trillion economy by the end of the decade.

[19] Industry Sources

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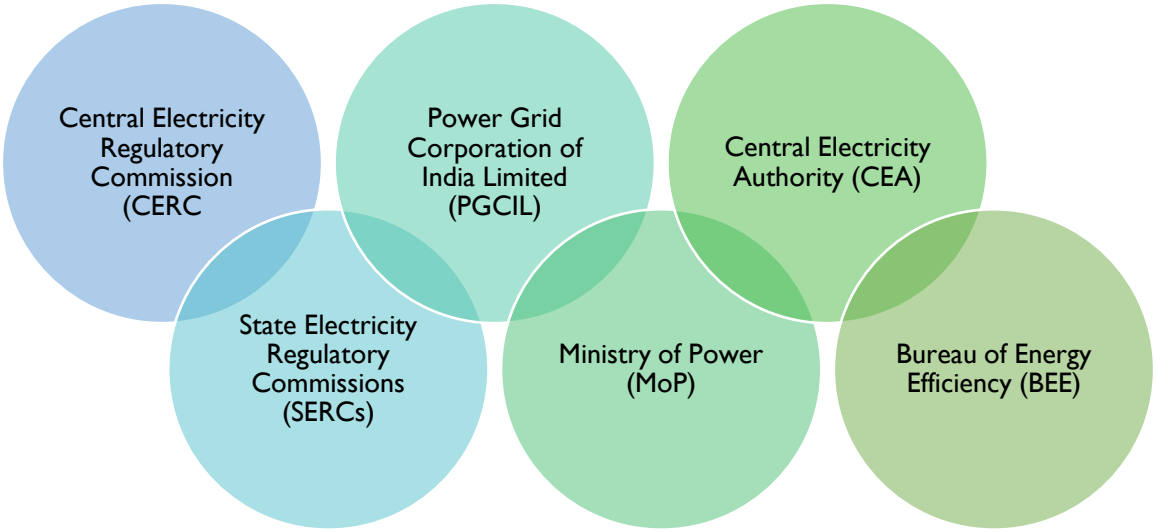
Regulatory Landscape: Power Transmission & Distribution Segment

Major Regulatory Bodies



Central Electricity Regulatory Commission (CERC)

The Central Electricity Regulatory Commission (CERC) is a statutory body established under the Electricity Act, 2003, tasked with regulating India's interstate electricity sector. Its primary functions include setting tariffs for centrally owned power generating companies and those operating across multiple states, regulating interstate transmission of electricity, issuing licenses for interstate transmission and trading, and adjudicating disputes involving generating companies and transmission licensees. CERC also formulates and enforces grid standards, promotes competition and efficiency in the electricity market, and advises the government on national electricity and tariff policies, thereby ensuring transparency, efficiency, and reliability in the sector.

State Electricity Regulatory Commissions (SERCs)

State Electricity Regulatory Commissions (SERCs) are autonomous statutory bodies established by state governments under the Electricity Act, 2003, to oversee the generation, transmission, and distribution of electricity within their respective states. SERCs are responsible for determining tariffs for intrastate electricity operations, issuing licenses, regulating power purchase and procurement processes, and resolving disputes at the state level. By ensuring transparency, efficiency, and consumer protection, SERCs play a crucial role in the effective functioning and financial health of the power sector at the state level.

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Power Grid Corporation of India Limited (PGCIL)

Power Grid Corporation of India Limited (PGCIL), also known as POWERGRID, is the Central Transmission Utility (CTU) of India under the Ministry of Power. It is responsible for the planning, implementation, operation, and maintenance of the interstate transmission system and the management of the national and regional power grids. PGCIL ensures the reliable and efficient transmission of electricity across states, facilitates grid integration for renewable energy, and supports the development of a robust and modern transmission infrastructure in India.

Ministry of Power (MoP)

The Ministry of Power (MoP) is the apex policymaking body for the power sector in India. It oversees policy formulation, implementation, and the functioning of regulatory bodies such as CERC and PGCIL. The MoP is responsible for ensuring the development of reliable, affordable, and sustainable power infrastructure, promoting investment, and driving reforms across generation, transmission, and distribution segments to meet the country's growing energy needs.

Central Electricity Authority (CEA)

The Central Electricity Authority (CEA) serves as the technical advisor and planner for the power sector, as reconstituted by the Electricity Act, 2003. Its functions include providing expert advice on technical and safety standards for electricity infrastructure, assisting in the development of national power plans, and supporting the regulatory framework with technical insights. CEA plays a key role in bridging the gap between power demand and supply and ensuring the safe and efficient operation of the electricity system in India.

Bureau of Energy Efficiency (BEE)

The Bureau of Energy Efficiency (BEE) is a statutory body established under the Energy Conservation Act, 2001, and operates under the Ministry of Power. BEE's primary mandate is to promote energy efficiency and conservation across all sectors of the Indian economy. It sets energy performance standards for appliances and buildings, certifies energy managers and auditors, and mandates energy audits for large energy-consuming entities. BEE implements key programs such as the Standards & Labeling scheme, which rates appliances for their energy efficiency, and the Perform, Achieve, and Trade (PAT) scheme aimed at improving industrial energy use. Through these initiatives, BEE plays a crucial role in reducing the country's energy intensity, supporting sustainable development, and helping India meet its energy conservation goals.

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Impact of Major Policy Power T&D Infrastructure

- **Revamped Distribution Sector Scheme (RDSS)**

The Revamped Distribution Sector Scheme (RDSS), launched in FY 2022 and running through FY 2026, aims to reduce Aggregate Technical & Commercial (AT&C) losses to below 12% and eliminate the gap between Average Cost of Supply (ACS) and Average Revenue Realized (ARR) by FY 2025. It promotes modernization of power distribution through smart metering, feeder segregation, and integration of Information Technology (IT) and Operational Technology (OT) systems. The scheme has a financial outlay of INR 3.03 lakh crore, with INR 97,631 crore as Central Government support. It is being implemented by all state-owned Distribution Companies (DISCOMs).

Impact:

RDSS has transformed the distribution segment by improving the financial and operational performance of DISCOMs. Smart meters have led to accurate billing, reduced theft, and enabled real-time monitoring. Distribution transformers and feeders have been upgraded, resulting in more reliable power delivery. IT/OT integration has improved grid visibility and fault detection. The financial health of DISCOMs has improved, enabling reinvestment into system upgrades and better customer service.

- **National Smart Grid Mission (NSGM)**

The National Smart Grid Mission (NSGM), operational since 2015, aims to deploy smart grid technologies in India, including Advanced Metering Infrastructure (AMI), Supervisory Control and Data Acquisition (SCADA) systems, and automated demand-side management. In Phase II, INR 990 crore was allocated, including INR 312 crore as Central Government support. Pilot projects have been completed in several urban centers like Chandigarh and Kanpur, helping DISCOMs modernize their distribution infrastructure.

Impact:

NSGM has introduced real-time monitoring and automation across select urban distribution networks. SCADA systems allow DISCOMs to track power flows, detect faults, and respond quickly to grid disturbances. Smart grid applications have led to better energy efficiency, load management, and integration of renewable energy. The mission has also laid the groundwork for digital grid transformation, including future integration of electric vehicle charging and rooftop solar.

- **Electricity (Rights of Consumers) Rules, 2020**

The Electricity (Rights of Consumers) Rules, 2020 were issued to ensure quality, reliable power supply to consumers and protect their rights. They mandate timely services from DISCOMs, including new

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connections, metering, billing, and grievance redressal. Smart prepaid meters are compulsory under these rules, which apply uniformly across the country.

Impact:

These rules have indirectly pushed improvements in distribution infrastructure. DISCOMs have been compelled to adopt smart metering and customer service automation to meet mandated timelines. This has resulted in fewer billing disputes, reduced AT&C losses, and better accountability. The enforcement of service standards has led to more efficient operations and encouraged the adoption of digital tools in power delivery.

- **Tariff Policy, 2016 (with Amendments)**

The Tariff Policy, 2016 provides a regulatory framework for cost-based and consumer-friendly tariff setting. It promotes open access, reduces cross-subsidies, and encourages performance-linked incentives for DISCOMs. The policy guides state electricity regulatory commissions in ensuring financial viability and infrastructure development within the power sector.

Impact:

By linking performance to financial incentives, the policy has motivated DISCOMs to reduce technical losses and invest in modern infrastructure. Open access provisions have encouraged grid modernization to support third-party energy suppliers. This has helped DISCOMs focus on efficiency, consumer satisfaction, and better network reliability. The policy also fosters transparency in pricing and accountability in utility management.

- **Green Energy Corridor (GEC)**

The Green Energy Corridor (GEC) project was launched to create dedicated transmission infrastructure for renewable energy evacuation from solar and wind hubs. Phase I as on October 2024 achieved the creation of 9,135 circuit kilometers (ckm) of transmission lines and 21,313 MVA of substation capacity, integrating over 18.72 GW of renewable energy. GEC Phase II is underway in states like Tamil Nadu to handle additional capacity from new renewable projects.

Impact:

GEC has expanded the interstate and intrastate transmission network to accommodate large-scale renewable energy. It has allowed seamless transfer of power from generation points to load centers, improving grid stability and reliability. The enhanced infrastructure has minimized renewable energy curtailment and enabled better balancing of conventional and green power sources. This is a cornerstone initiative for India's transition toward a sustainable, low-carbon energy system.

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Revamped Distribution Sector Scheme[20]

Objective

The RDSS is a flagship reform initiative launched by the Government of India in July 2021, with the primary aim of enhancing the operational efficiency and financial sustainability of Distribution Companies (DISCOMs) and Power Departments. The scheme provides conditional financial assistance for strengthening supply infrastructure, focusing on measurable improvements in the following areas:

- **Reduction of AT&C Losses:** Targeting a reduction to pan-India levels of 12-15% by FY 2025.
- **Elimination of ACS-ARR Gap:** Aiming to reduce the gap between the Average Cost of Supply (ACS) and Average Revenue Realized (ARR) to zero by FY 2025, ensuring DISCOMs operate sustainably.
- **Development of Institutional Capabilities:** Enhancing the capabilities of DISCOMs to manage modern distribution systems.
- **Improvement in Power Supply Quality:** Ensuring a reliable, affordable, and quality power supply to consumers.

Key Components

The scheme is structured into two main parts:

Part A: Infrastructure and Smart Metering

- **Prepaid Smart Metering:** Deployment of prepaid smart meters for consumers, along with Advanced Metering Infrastructure (AMI), to improve billing accuracy, reduce theft, and empower consumers with real-time monitoring and energy accounting.
- **System Metering:** Implementation of metering at feeder and distribution transformer levels with communication features to monitor and manage the distribution network effectively.
- **Distribution Infrastructure Upgradation:** Modernization and augmentation of the existing distribution infrastructure to handle growing demand and reduce technical losses, including substation upgrades, line reconductoring, High Voltage Distribution Systems (HVDS), and underground cabling in urban areas.
- **Feeder Segregation:** Separation of agricultural feeders to enable better load management, reduce losses, and ensure reliable daytime electricity for farmers—aligned with the PM-KUSUM scheme for solarization of agriculture feeders.

[20] Ministry of Power, Government of India

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Part B: Training and Capacity Building

- **Skill Development:** Enhancing the skills of personnel involved in the distribution sector through targeted training programs.
- **IT/OT Integration:** Leveraging Information Technology and Operational Technology for data-driven decision-making, predictive analytics, and automation.
- **Consumer Service Benchmarking:** Establishing performance benchmarks for consumer service and implementing reforms to improve service quality.
- **Enabling Activities:** Undertaking enabling and supporting activities to ensure the smooth implementation of the scheme.

Progress and Achievements

- **Financial Outlay:** Over INR 3 lakh crore (INR 3,03,758 crore) has been allocated for the scheme, with INR 97,631 crore as direct Central Government support.
- **Implementation Timeline:** The scheme runs from FY 2022 to FY 2026.
- Action Plans and KPIs: States and Union Territories (UTs) are required to submit detailed action plans with measurable key performance indicators (KPIs), which are linked to the release of funds.
- **Performance Monitoring:** DISCOM performance is evaluated annually against predefined benchmarks, including AT&C losses, ACS-ARR gaps, infrastructure upgrades, and consumer services, using IT-enabled dashboards such as PRAAPTI and URJA apps.
- **Results-Linked Funding:** Financial support is contingent on DISCOMs meeting loss reduction and reform targets, ensuring accountability and incentivizing performance.
- **Smart Metering Target:** Approximately 25 crore consumers are targeted for prepaid smart metering.
- **Feeder Segregation:** Separation of 10,000 agriculture feeders to provide dedicated supply to farmers.
- **AI Integration:** Leveraging Artificial Intelligence to analyze data from IT/OT devices for better energy management.

Special Features

- **Mandatory Energy Accounting and Auditing:** Regular energy accounting and auditing ensure transparency and help in identifying and plugging losses.

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- **Consumer Indexing and GIS Mapping:** Creating a comprehensive database of consumers and mapping network assets using Geographic Information Systems (GIS) for better asset management and service delivery.
- **Support for Renewable Energy Integration:** Facilitating the integration of renewable energy at the distribution level, supporting India's clean energy transition.
- **Empowerment Through Data:** Leveraging artificial intelligence (AI) and data analytics from smart meters and IT/OT devices to generate monthly energy accounting reports, enabling DISCOMs to make informed decisions on loss reduction, demand forecasting, Time of Day (ToD) tariff, and renewable energy integration.

All India Smart Metering Progress Report till June 2026

Sr. No	Particulars	Values
1	Sanctioned Meters (Nos)	20,33,93,531
2	Sanctioned Cost (INR Lakhs)	1,30,64,002.33
3	Awarded Meters (Nos)	11,93,00,101
4	Award Rate (INR/unit)	10,377.34
5	Awarded Cost (INR Lakhs)	1,23,80,176.76
6	Annual Targets (Nos)	1,08,93,976
7	Delivered Meters (Nos)	2,02,27,260
8	Installed Meters (Nos)	2,04,88,950
9	Charged Meters (Nos)	2,02,80,495
10	Communicating Meters (Nos)	1,97,42,702
11	Prepaid Mode Meters (Nos)	54,74,691

Source: Ministry of Power, Government of India

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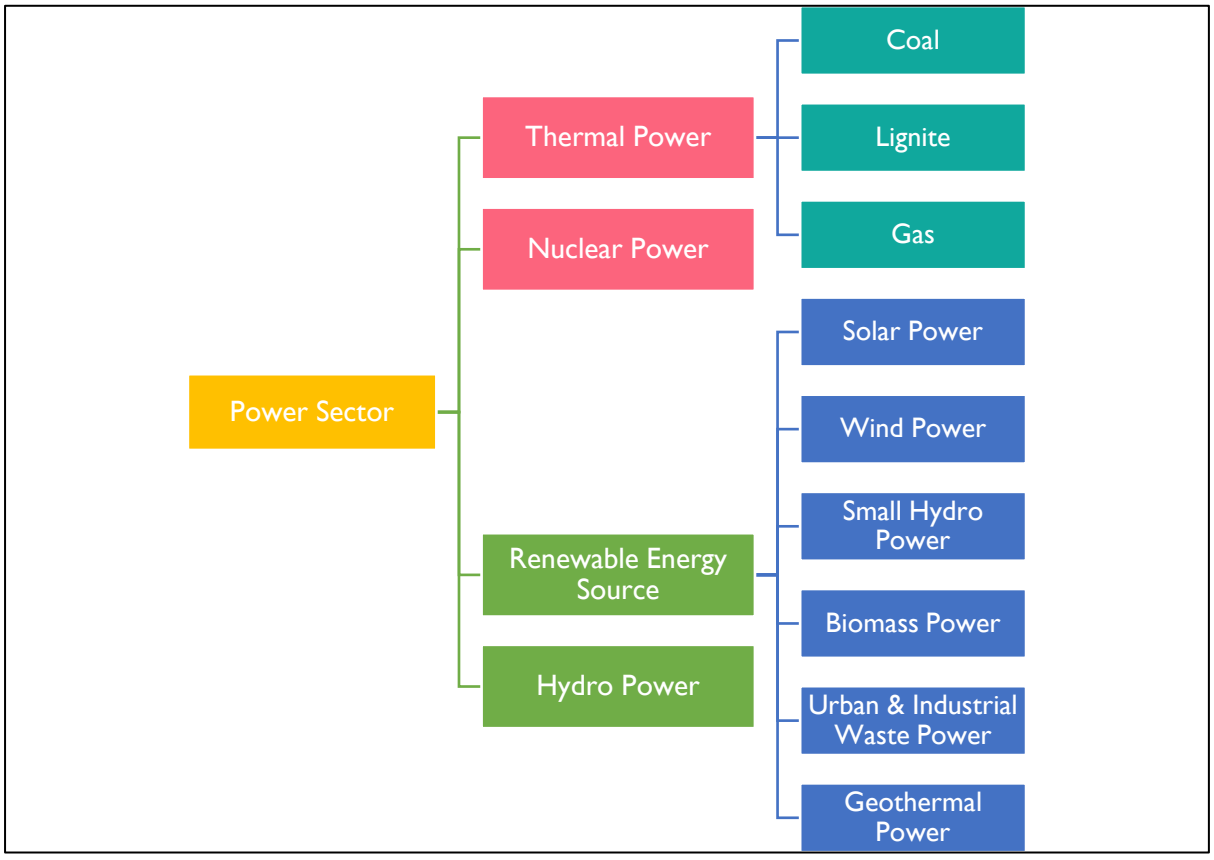
EPC in Power Segment

India's power sector is one of the largest and most diverse in the world, structured across thermal, nuclear, renewable, and hydro power sources. As the country strives to meet rising energy demands while transitioning to a cleaner energy mix, the role of EPC players has become more integral and multifaceted.

The sector is currently undergoing a transformational shift from fossil fuel dependency to renewable diversification driven by policy mandates, technology upgrades, climate targets, and investment in infrastructure. This transformation has redefined the project development lifecycle, making EPC services more strategic, specialized, and innovation-driven.

Qualitative overview of the structure of the Power EPC market (key client types, key factors impacting the industry)



- **Thermal Power (Coal, Lignite, Gas)**

Thermal power has historically dominated India's energy mix, especially coal-based power plants, which still account for the largest share of electricity generation. Despite India's renewable energy push, thermal plants continue to provide critical base load power due to their reliability and ability to

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operate continuously. Thermal power still generates strong EPC demand, especially in plant modernization, environmental retrofits (like FGD Flue Gas Desulfurization systems), efficiency upgrades, and replacement of aging infrastructure. While new thermal projects have slowed due to environmental concerns and policy shifts, select large-scale projects in industrial corridors or regions with coal availability are still being awarded. EPC firms with strong mechanical and structural capabilities remain active in this segment.

- **Nuclear Power**

Nuclear energy is a strategic pillar of India's long-term low-carbon transition. Though it forms a smaller portion of the current mix, it is critical for energy security and long-duration base load power. India has planned expansion in nuclear power with indigenous reactor development under "Make in India" initiatives. Nuclear projects are highly capital intensive, technically complex, and require EPC firms with strong credentials in safety, precision engineering, and compliance with global standards. These projects are long-cycle, and typically government-controlled, with limited but significant EPC opportunities for specialized players in civil works, heavy engineering, and systems integration.

- **Renewable Energy Sources (Solar, Wind, Biomass, Geothermal, Waste-to-Energy)**

This is the most dynamic and fast-growing segment of the power sector. India is targeting 500 GW of non-fossil fuel capacity by 2030, with solar and wind leading the way. Decentralized biomass, small hydro, and waste-to-energy projects are also gaining policy and financial support, especially in rural and urban infrastructure development. The renewable energy boom has significantly reshaped the EPC market. Solar EPC, in particular, is highly competitive, with players needing to focus on speed, cost efficiency, and integration with storage and hybrid systems. Wind energy EPCs are also seeing growth in repowering and new capacity in high-wind corridors. Additionally, hybrid RE parks (solar + wind + storage) require advanced EPC capabilities in design optimization and grid integration. The decentralization of power generation has also opened doors for smaller EPC players in biomass and waste-to-energy segments.

- **Hydro Power (Large Hydro & Small Hydro)**

Hydropower, both large and small scale, plays a key role in grid stability due to its storage and peaking capability. Small hydro projects are especially promoted in hilly states and remote areas. However, large hydro faces ecological and social challenges that slow project execution. Hydro power projects demand EPC contractors with expertise in civil construction (dams, tunnels, reservoirs), hydromechanical installations, and long-duration project execution in remote terrains. These projects offer fewer but high-value contracts and are typically awarded to firms with strong execution and financial capabilities. With increasing focus on pumped hydro storage (PHS) systems to complement solar power, EPC opportunities are expected to grow in the coming years.

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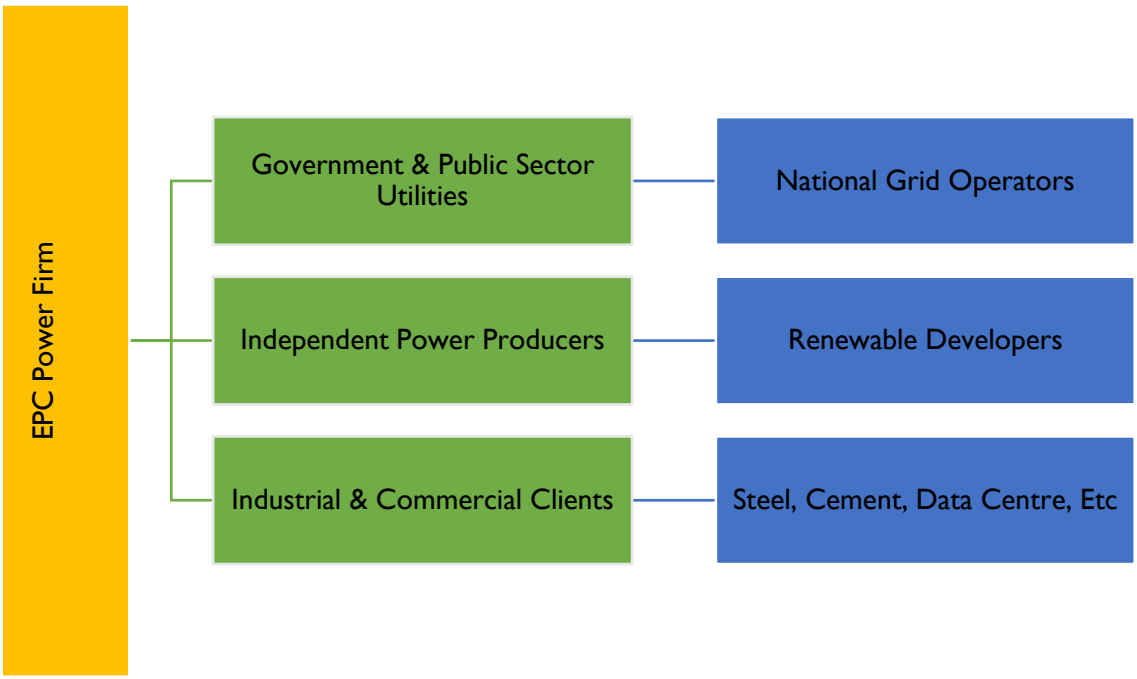
Key Clients

The Power EPC (Engineering, Procurement, and Construction) market in India caters to a diverse range of clients, each with unique requirements, project scales, and procurement processes. These clients drive demand for EPC services across the generation, transmission, and distribution segments of the power sector. With India's evolving energy mix and infrastructure push, the client landscape is increasingly shaped by government-backed utilities, independent developers, and industrial power users. Each client type plays a critical role in shaping project timelines, investment models, and technology adoption across the EPC value chain.



- **Government & Public Sector Utilities**

Government-owned utilities are among the largest clients for EPC power firms in India. These include central and state electricity boards, power generation companies, and transmission corporations. Their focus is typically on large-scale infrastructure projects such as grid expansion, rural electrification, hydro power plants, and thermal power stations. The government sector often emphasizes compliance with policy mandates, cost efficiency, and timely execution. With India's emphasis on "Power for All" and infrastructure development under initiatives like the Revamped Distribution Sector Scheme (RDSS), public sector orders remain a major driver for EPC companies

- **Independent Power Producers (IPPs)**

Independent Power Producers are non-governmental companies that own and operate power generation facilities for sale to utilities or directly to large consumers. They typically undertake projects

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under the tariff-based competitive bidding mechanism. With liberalization and private sector participation, IPPs have become significant clients for EPC contractors. They focus on quick turnaround, high efficiency, and cost-effective execution. EPC firms are often chosen through competitive tenders, where performance history, financial capability, and execution speed are key selection criteria.

- **Industrial & Commercial Clients**

Large industrial and commercial establishments—including steel and cement manufacturers, data centers, textiles, and IT parks—are increasingly turning to captive power generation and renewable energy installations to ensure reliable, cost-efficient, and green power supply. These clients require EPC services for setting up rooftop solar, captive thermal plants, cogeneration units, and grid connections. With rising electricity costs and sustainability targets, these businesses are investing in custom power solutions, making them important clients for EPC players that offer end-to-end energy infrastructure services.

Key Factors Impacting the Industry

- **Rising Electricity Demand**

India's growing population, expanding urbanization, and industrialization have led to a continuous surge in electricity demand. With increasing electrification in rural areas and rising energy consumption across sectors like IT, manufacturing, and infrastructure, the country requires significant additions in generation, transmission, and distribution capacity. This rising demand has intensified the need for timely execution of power projects, offering substantial opportunities for EPC contractors. The growing adoption of electric vehicles and digital technologies is also placing additional load on the grid, prompting new investments in grid reinforcement and smart infrastructure.

- **Infrastructure Development**

Massive infrastructure development under government initiatives such as "Make in India", "Smart Cities Mission", and "PM Gati Shakti" is driving power demand across regions. New industrial corridors, data centers, metro rail networks, and logistic hubs require reliable power supply, which in turn necessitates large-scale power infrastructure projects. EPC players are increasingly being engaged for turnkey solutions that include not only power generation but also substation installation, transmission line setup, and rural electrification works. These projects demand timely execution, cost optimization, and coordination across multiple stakeholders, making the role of EPC firms critical.

- **Labor and Skill Availability**

The timely delivery of power projects in India is often hindered by the shortage of adequately trained workforce. While the EPC sector has access to a large labor pool, the availability of technically skilled

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and experienced personnel particularly in project management, electrical engineering, and specialized renewable installations remains a challenge. Delays due to lack of skilled labor can affect project costs and timelines, especially in remote or high-capacity projects. Although several government and private skill development programs are underway, the industry continues to face a gap between demand and availability of trained manpower in the power sector.

- **Fuel Mix Transition (Thermal to Renewables)**

India's strategic shift towards clean energy is reshaping the power EPC landscape. With the government targeting a renewable energy capacity of 500 GW by 2030, the share of solar, wind, and hybrid projects is rapidly increasing in new installations. This transition is reducing the dependence on coal-fired thermal power, which traditionally dominated the EPC space. Consequently, EPC firms are adapting to renewable project requirements, including modular construction techniques, battery storage integration, and hybrid plant design. This change demands technological expertise and flexibility, creating new opportunities and challenges for EPC players amid this decarbonization drive.

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Overview of entry barriers for Power EPC in India

Stringent Prequalification and Eligibility Criteria

- Most EPC contracts, especially those floated by central or state utilities such as PGCIL or SEBs, include rigorous prequalification norms. Bidders are required to have executed similar projects in terms of voltage level, scope, and contract size. Additionally, financial criteria like high turnover and net worth benchmarks further limit participation. These thresholds are intended to ensure reliability and execution capability but often exclude technically competent but smaller or newer entrants from competing in large bids.

High Capital Intensity and Working Capital Constraints

- The power EPC business in India demands significant upfront investment due to the scale and complexity of infrastructure involved. Transmission lines, substations, and renewable energy projects require heavy equipment, advanced technology, and substantial manpower. Moreover, contractual payment structures often include delayed payments, retention clauses, and milestone-based disbursements. This puts considerable pressure on working capital, making it difficult for new or smaller firms without strong financial backing or access to credit to sustain operations or scale up.

Low Margins and Intense Price Competition

- The EPC industry in India is highly competitive and operates under thin margins due to the dominance of L1 (lowest cost) bidding practices. This leads to aggressive pricing, which can compromise quality or execution speed if not managed well. Established firms mitigate this through scale efficiencies, backward integration (e.g., owning tower manufacturing or logistics assets), and experienced project management. New entrants, lacking these buffers, find it difficult to remain viable while matching low bid prices.

Need for Technological Competence and Skilled Manpower

- India's power sector is rapidly evolving with an increasing focus on digital substations, grid automation, GIS (Gas Insulated Substations), and HVDC (High Voltage Direct Current) transmission. The ability to implement these systems requires specialized knowledge, engineering expertise, and access to high-end technologies. Larger firms have in-house technical teams and global OEM partnerships, giving them a competitive edge. For new players, building these capabilities from scratch can be both time-consuming and cost-intensive.

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Power EPC business model and associated aspects

The Power EPC (Engineering, Procurement, and Construction) model in India serves as the backbone for executing large-scale power infrastructure projects across thermal, hydro, solar, wind, transmission, and distribution segments. EPC contractors take full responsibility for delivering turnkey solutions, covering engineering design, material procurement, civil and electrical works, system integration, commissioning, and post-handover support. Their clientele includes both central and state-owned utilities such as NTPC, PGCIL, and SEBs, as well as a growing number of private renewable energy developers. Given the increasing complexity of power projects, EPC providers are expected not just to execute but to innovate across all project stages.

- **End-to-End Engineering & Design**

The initial phase of any EPC contract involves comprehensive engineering that lays the foundation for the project's cost, schedule, and performance outcomes. This includes feasibility assessments, site-specific studies, grid compatibility evaluations, structural layout planning, and detailed design of electrical systems. EPC players must adhere to stringent technical guidelines and statutory norms, often tailored to the standards of bodies like BIS, CEA, and CBIP. A major focus lies in optimizing the design to balance capital costs with long-term operational efficiency, especially in renewable and high-voltage transmission projects.

Procurement & Vendor Management

EPC contractors shoulder the responsibility of sourcing all critical components, from power transformers, conductors, and tower materials to automation systems like SCADA, GIS switchgear, and battery systems in case of storage-linked projects. Effective vendor management involves negotiating favourable contracts with both domestic and global suppliers, ensuring timely deliveries, and enforcing strict quality control. Material delays or procurement cost overruns can derail project schedules and erode profit margins, making supply chain optimization a strategic focus area. Increasingly, contractors also need to align with green procurement practices and localization norms, particularly for solar modules and high-voltage equipment.

- **Construction & Execution**

This is the most resource-intensive phase where engineering plans are translated into on-ground assets. It involves site mobilization, land development, civil foundation work, erection of towers and substations, stringing of transmission lines, and installation of electrical systems. EPC players must coordinate a large, often multi-location workforce, manage safety compliance, and synchronize

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activities of civil, mechanical, and electrical teams. Real-time project management tools are commonly deployed to monitor progress, mitigate risks, and ensure adherence to timelines. Execution efficiency often becomes the defining factor in the firm's profitability and long-term reputation.

- **Testing, Commissioning, & Grid Integration**

Once physical construction is completed, the project enters the testing and commissioning stage. Here, the EPC contractor conducts various functional and safety tests, such as high-voltage testing, relay protection schemes, synchronization checks, and performance benchmarks to ensure grid stability. All systems must meet the parameters set by the utility client and regulatory authorities before final commissioning. This stage also includes integration with the national or state grid and ensures system compatibility with load dispatch centres. A detailed commissioning report and documentation are required before project handover.

- **Financial & Contractual Framework**

The Power EPC business operates under milestone-linked, fixed-price contracts, where contractors must deliver within pre-agreed budgets and schedules. This model inherently transfers execution risks, such as cost escalations, regulatory delays, or equipment failures, to the contractor. Many projects are funded through multilateral or public financing, which imposes additional reporting, audit, and procurement protocols. While some contracts may include escalation clauses, most firms must manage cost fluctuations internally. Cash flow management, working capital sufficiency, and performance security (in the form of bank guarantees) are key financial disciplines EPC firms must navigate carefully.

- **Operations During Defect Liability Period**

After project commissioning, EPC contractors continue to remain liable for defect resolution and operational performance during the Defect Liability Period (DLP), which typically spans one to two years. During this phase, the contractor must address any technical issues, replace faulty components, and ensure seamless operation of the project. Some contracts may extend into Operation & Maintenance (O&M) agreements, especially in renewable or substation projects, adding another layer of recurring responsibility. This period is critical for maintaining the client's trust and ensuring a positive reference for future tenders.

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- **Market Dynamics & Growth Trends**

The Indian Power EPC landscape is undergoing structural shifts driven by the transition toward renewable energy, digital grid modernization, and government-led electrification efforts. With initiatives such as 'Revamped Distribution Sector Scheme' (RDSS), 'One Nation, One Grid', and the 500 GW renewable target for 2030, there is significant project pipeline in solar parks, interstate transmission corridors, and rural electrification. Additionally, private sector participation in TBCB (Tariff-Based Competitive Bidding) projects is opening up opportunities for newer players. However, the space remains highly competitive, with pricing pressure, regulatory uncertainties, and execution challenges becoming key hurdles. Firms that can leverage digital technologies, form strategic partnerships, and build execution depth are best positioned to succeed.

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Key trends and growth drivers for Indian power EPC market

Key Trends

- **Surge in Renewable Energy Capacity**[21]

India's renewable energy sector has witnessed remarkable growth, with the total installed capacity reaching 226.75 GW as of May 2025, significantly up from 75.52 GW in March 2014. The country aims to achieve 500 GW of non-fossil fuel-based capacity by CY 2030. Key developments include solar power with an installed capacity of 110.83 GW, comprising ground-mounted installations (approx. 82.39 GW), rooftop solar (17.69 GW), hybrid projects (2.89 GW), and off-grid systems (4.98 GW). Wind power stands at 51.29 GW, small hydro power at 5.10 GW, biomass (bagasse) cogeneration at 9.82 GW, biomass (non-bagasse) cogeneration at 0.92 GW, waste to power at 0.31 GW, and waste to energy (off-grid) at 0.54 GW.

- **Modernization of Transmission Infrastructure**

To support the growing renewable energy capacity, India has made significant investments in transmission infrastructure. In FY 2025, the country added 8,830 circuit kilometers (ckm) of transmission lines, bringing the total network length to 494,374 ckm. Additionally, substation capacity increased by 86,433 megavolt-amperes (MVA), reaching a total of 1,337,513 MVA. These developments are part of the government's broader efforts to modernize and strengthen the national power transmission network.

- **Adoption of Smart Grid Technologies**

The integration of smart grid technologies is enhancing the efficiency and reliability of the power distribution system in India. As of March 2025, the Ministry of Power reported the installation of 7.1 million smart meters under the National Smart Grid Mission. Furthermore, eleven smart grid pilot projects have been implemented across various states, focusing on advanced metering infrastructure, distribution automation, and grid modernization. These initiatives are significantly driving the adoption of digital infrastructure and creating new opportunities for EPC players.

- **Development of Smart Cities**

The Government of India's Smart Cities Mission is advancing the development of sustainable and efficient urban infrastructure. Under this mission, smart power infrastructure initiatives include the implementation of underground cabling, advanced metering, and real-time load management systems. These developments are generating substantial demand for modern power infrastructure and opening up new avenues for EPC companies involved in urban energy solutions.

[21] Ministry of new and renewable energy

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- **Growth in Mining & Metals Sector**

Government initiatives such as Aatmanirbhar Bharat are bolstering investment in the mining and metals sector, consequently increasing demand for EPC services. In resource-intensive states like Odisha, Jharkhand, and Chhattisgarh, infrastructure development in the form of improved power supply, substation construction, and related EPC services is on the rise, making the sector a key driver of EPC activity.

- **Expansion of Nuclear Power**[22]

India's power EPC market is witnessing new opportunities with the government's strategic push toward nuclear energy. In Union Budget FY 2026, INR 20,000 crore was allocated for the development of Small Modular Reactors (SMRs), with a target to operationalize five indigenously developed SMRs by CY 2033. This initiative is part of a broader goal to achieve 100 GW of nuclear capacity by CY 2047. To support this, amendments to the Atomic Energy Act and the Civil Liability for Nuclear Damage Act are being considered to enable private sector participation. These developments are driving demand for EPC services in civil construction, safety systems, and nuclear infrastructure.

- **Focus on Green & Sustainable EPC Solutions**

There is a growing prioritization of sustainable and energy-efficient solutions across the power EPC sector. EPC players are increasingly adopting low-carbon technologies, green buildings, and energy-efficient power plants. The push is supported by government schemes such as the National Green Hydrogen Mission and the Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM), both of which are promoting sustainable energy development and providing growth opportunities for eco-conscious EPC providers.

[22] Department of Atomic Energy, Press information Bureau

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Growth Drivers

The Indian power EPC (Engineering, Procurement, and Construction) market is experiencing robust and sustained growth, propelled by several critical factors that reflect the country's rapidly evolving energy landscape and economic development.

1. Rising Electricity Demand[23]

India's growing economy and population are driving an ever-increasing demand for electricity. In FY 2024, the country generated approximately 1,739.091 billion units (BUs) of electricity. For FY 2025 generation stood at 1,829 BUs. This rising trend in power generation reflects the expanding needs of urbanization and industrial growth, which in turn require enhanced generation capacity and a robust transmission and distribution (T&D) network. These infrastructure demands are directly translating into large-scale Engineering, Procurement, and Construction (EPC) opportunities across both conventional and renewable energy projects.

Government Initiatives for Electrification and Infrastructure Development

The Indian government's initiatives, such as the Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and the Integrated Power Development Scheme (IPDS), have played a crucial role in expanding power infrastructure across rural and urban areas. DDUGJY focuses on ensuring continuous power supply in rural regions by improving feeder segregation and strengthening sub-transmission and distribution networks. Meanwhile, IPDS aims to modernize urban power systems through projects like smart meter deployment and underground cabling. These programs have collectively boosted the demand for EPC services by promoting reliable, efficient, and modernized power infrastructure development throughout the country.

Surge in Renewable Energy Capacity[24]

India is aggressively expanding its renewable energy capacity as part of its clean energy transition. As of May 2025, the total installed renewable energy capacity stands at 226.75 GW, including 110.83 GW of solar power and 51.29 GW of wind power. The ambitious target of reaching 500 GW of non-fossil fuel-based capacity by 2030 ensures a steady pipeline of large-scale solar parks, wind farms, hybrid projects, and off-grid installations. This growth fuels extensive EPC work in areas such as solar panel installation, wind turbine construction, and related transmission systems.

[23] Ministry of power
[24] Ministry of new and renewable energy

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Growing Investments in Energy Storage Solutions

To address the intermittency challenges of renewables, India is investing significantly in energy storage technologies, including grid-scale battery storage projects and pumped hydro storage. The National Energy Storage Mission targets accelerating energy storage deployment to support grid stability and renewable integration. Early pilot projects totaling hundreds of megawatts are already in development, signaling increasing EPC opportunities in storage infrastructure that integrates with renewable and conventional power plants.

Emphasis on Green and Sustainable Power Solutions[25]

Sustainability has become a core focus area, with initiatives like the National Green Hydrogen Mission, targeting the production of 5 million tonnes of green hydrogen annually by 2030. This mission is projected to attract investments exceeding INR 8 lakh crore, creating extensive EPC demand for hydrogen production plants, electrolysers, and associated renewable power generation infrastructure. Additionally, schemes like PM-KUSUM promote solarization of agricultural pumps and decentralised renewable energy, further driving EPC work focused on sustainable energy projects.

Industrialization and Urbanization[26]

India's rapid industrial growth and urban expansion are significant electricity consumption drivers. The urban population is expected to reach 600 million by CY 2036, intensifying demand for electricity in residential, commercial, and industrial sectors. The ongoing Smart Cities Mission, covering 109 cities, emphasizes sustainable urban infrastructure with smart power distribution, underground cabling, and real-time energy management systems. These initiatives generate substantial EPC opportunities in urban power infrastructure development, distribution automation, and grid modernization.

Accelerating Digitalization in Power Sector

Digital technologies are transforming India's power sector. The installation of 7.1 million smart meters under the National Smart Grid Mission as of March 2025 demonstrates the country's push toward a more efficient and transparent power distribution system. Smart grid pilot projects in multiple states focus on advanced metering infrastructure, automation, and real-time monitoring. This digitalization trend necessitates EPC expertise in implementing sophisticated grid technologies and IT-enabled energy solutions.

[25] **National Green Hydrogen Mission, Press Information Bureau**
[26] World Bank

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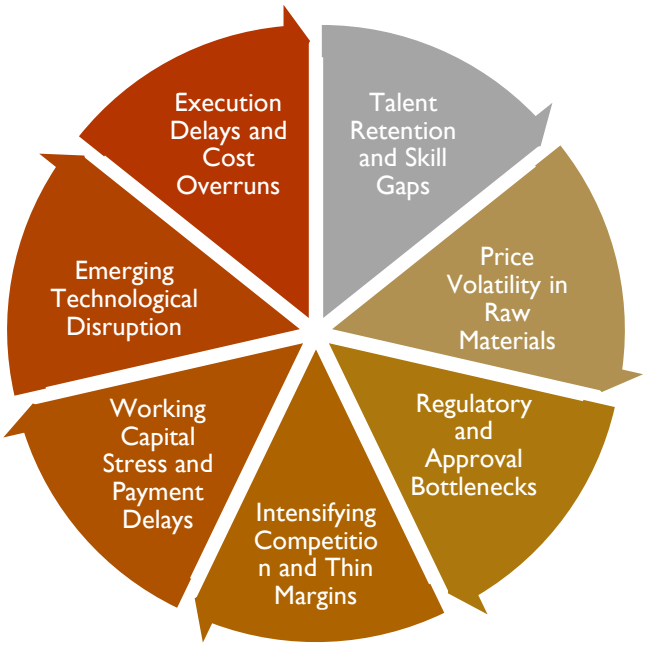
Key threats and challenges in power EPC



- **Execution Delays and Cost Overruns**

Power EPC projects are highly complex and span several months to years, often involving remote geographies, large workforces, and multiple stakeholders. Delays due to land acquisition hurdles faced by clients, environmental clearances, logistical constraints, labor issues, or client-side indecision are common. However, if the project is delayed due to inefficiencies on the part of the EPC player, it not only inflate project costs but can also lead to liquidated damages under fixed-price contracts. Moreover, any mismatch in planning and on-site realities results in time overruns, eroding the contractor's margins significantly.

- **Regulatory and Approval Bottlenecks**

The sector operates under a dense web of regulatory frameworks governed by central and state bodies. EPC companies must navigate approvals from government agencies. Delays in getting permits, especially for transmission projects involving forest or agricultural land, can derail project timelines. Constant policy shifts and compliance with evolving environmental norms—such as those related to ESG or emissions—also increase complexity.

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- **Price Volatility in Raw Materials**

A significant share of EPC cost structure is tied to commodities like steel, aluminum, copper, and transformers. Fluctuations in global commodity prices, without adequate escalation clauses in contracts, can compress profitability. EPC firms often face difficulty in renegotiating terms after contract award, leaving them exposed to margin shocks. Supply chain disruptions—such as those caused by geopolitical tensions or pandemics—can further aggravate this risk.

- **Working Capital Stress and Payment Delays**

EPC projects are capital-intensive, requiring large upfront investments in equipment, labor, guarantee, and material. Payments are typically milestone-based and subject to third-party certification. Delays in milestone approvals or fund releases from public sector clients can result in prolonged receivables, affecting liquidity. Many small to mid-sized EPC firms face working capital crunches and are forced to rely heavily on short-term debt, increasing financial risk.

- **Intensifying Competition and Thin Margins**

The Indian Power Engineering, Procurement and Construction (EPC) market has become increasingly competitive, particularly with the entry of new private players and international firms through joint ventures. Price undercutting in bid-based projects has resulted in persistently thin profit margins. In Tariff Based Competitive Bidding (TBCB) projects or Lowest Cost Bidder (L1)-based tenders, the emphasis is often placed on achieving the lowest project cost rather than evaluating technical capabilities or execution quality. This pricing-driven approach creates challenges for companies in maintaining sustainable margins, necessitating scale expansion, operational efficiency, or differentiation through technological capabilities and project execution expertise.

- **Talent Retention and Skill Gaps**

The sector suffers from shortages in skilled project managers, electrical engineers, and technical workers, especially in remote and tier-2/3 project sites. High attrition and migration of skilled labor to more lucrative sectors (like metro infrastructure or renewables) adds to operational difficulties. Building in-house capabilities in emerging areas such as digital substations, SCADA, and battery integration also remains a challenge for many traditional EPC players.

- **Emerging Technological Disruption**

As India shifts toward smarter, decentralized, and renewable-focused grids, EPC contractors need to quickly adapt to new technologies such as high-voltage DC (HVDC) lines, smart grid automation, and

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battery storage integration. Firms that would fail to invest in digital capabilities, smart engineering tools, and advanced monitoring systems risk obsolescence. Keeping pace with global standards and integrating these innovations into legacy project models requires both financial and technical readiness.

List of Ongoing Projects in Power T&D Sector in India

Company Name	Project Name	Cost (Rs.million)	Expected completion by dates	Location state
POWERGRID WEST CENTRAL TRANSMISSION LTD.	Transmission System for Evacuation of Power from Potential Renewable Energy Zone in Khavda area of Gujarat under Phase-V (8 GW) Part A Project	248190	May 2029	Multi States
RAJASTHAN PART I POWER TRANSMISSION LTD.	Transmission System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase-III Part-I Project	226760	July 2029	Multi States
POWER GRID CORPN. OF INDIA LTD.	Transmission System for Evacuation of RE power (13 GW) from Renewable Energy Parks in Leh (5 GW Leh-Kaithal Transmission Corridor) Project	207737	March 2031	Multi States
K P S III HVDC TRANSMISSION LTD.	Transmission System for Evacuation of Power from Potential Renewable Energy Zone in Khavda area of Gujarat under Phase-V (8GW): Part C Project	120000	December 2029	Gujarat
POWER GRID CORPN. OF INDIA LTD.	Transmission Scheme for Offshore Wind Zone Phase-1 (500 MW VGF off coast of Gujarat for Subzone B3) Project	69000	March 2029	Gujarat
RAJASTHAN IV 4B POWER TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-4: 3.5 GW): Part B Project	63950	April 2027	Rajasthan
POWER GRID CORPN. OF INDIA LTD.	Transmission System for Offshore Wind Farm in Tamil Nadu (500 MW VGF) Project	62420	March 2030	Tamil Nadu
POWERGRID BIKANER IV	Transmission System for Evacuation of Power from Rajasthan	59685	March 2027	Multi States

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TRANSMISSION LTD.	REZ Ph-IV (Part-3: 6GW) [Bikaner complex]: Part-A Project			
POWERGRID GHIROR TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-4: 3.5 GW): Part A Project	58460	March 2027	Multi States
KURNOOL-IV TRANSMISSION LTD.	Transmission System for Integration of Kurnool-IV REZ-Phase-I (for 4.5 GW) Project	55500	March 2027	Multi States
KHAVDA IV C POWER TRANSMISSION LTD.	Transmission System for Evacuation of power from Potential Renewable Energy Zone in Khavda area under Phase-IV (7 GW): Part C Project	53900	October 2026	Multi States
POWERGRID SIWANI TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-3: 6GW) [Bikaner complex]: Part-B Project	53573.6	March 2027	Multi States
RAJASTHAN V POWER TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-V (Part-1: 4 GW) [Sirohi/Nagaur] Complex Project	50276.1	March 2027	Rajasthan
POWERGRID SOUTH OLPAD TRANSMISSION LTD.	Transmission System for Evacuation of Power from potential renewable energy zone in Khavda area of Gujarat under Phase-IV (7GW): Part B Project	47660	March 2027	Gujarat
POWERGRID VATAMAN TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-1) (Bikaner Complex): Part-A Project	47410	June 2026	Rajasthan
ANANTAPUR II REZ TRANSMISSION LTD.	Transmission System for Integration of Ananthapur-II REZ-Phase I (for 4.5 GW) Project	46790	March 2027	Multi States
POWER GRID CORPN. OF INDIA LTD.	Transmission Network Expansion in Gujarat to increase its ATC from ISTS Part B Project	45462.5	May 2026	Multi States
POWERGRID KHAVDA II-C	Transmission Scheme for Integration of	44450	June 2026	Karnataka

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TRANSMISSION LTD.	Renewable Energy Zone (Phase-II) in Koppal-II (Phase-A & B) and Gadag-II (Phase-A) in Karnataka Project			
VATAMAN TRANSMISSION LTD.	Transmission System for Evacuation of Additional 7GW RE Power from Khavda RE Park under Phase-III Part B Project	42314.9	December 2026	Gujarat
KHAVDA IVA POWER TRANSMISSION LTD.	Transmission System for Evacuation of power from Potential Renewable Energy Zone in Khavda area under Phase-IV (7 GW): Part A Project	40910	August 2026	Gujarat
JAMNAGAR TRANSMISSION LTD.	Network Expansion Scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area Project	38150	March 2027	Gujarat
POWERGRID KURAWAR TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-2: 5.5 GW)(Jaisalmer/Barmer Complex): Part H1 Project	36740	March 2027	Madhya Pradesh
POWER GRID CORPN. OF INDIA LTD.	Transmission System for Kurnool Wind Energy Zone/Solar Energy Zone (AP)-Part-A & Part-B Project	35469.4	July 2026	Andhra Pradesh
RAJGARH NEEMUCH POWER TRANSMISSION LTD.	Transmission System for Evacuation of Power from RE Projects in Rajgarh (1500 MW) SEZ Phase III and Evacuation of Power from RE Projects in Neemuch (1000 MW) SEZ in Madhya Pradesh-Phase II Project	34720	September 2027	Madhya Pradesh
PUNE-III TRANSMISSION LTD.	Transmission System for Evacuation of Power from Potential Renewable Energy Zone in Khavda Area of Gujarat under Phase-IV (7G W): Part D Project	34550	September 2027	Maharashtra
CHITRADURGA BELLARY REZ	Transmission Scheme for Integration of Davanagere /	34530	September 2027	Karnataka

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TRANSMISSION LTD.	Chitradurga and Bellary REZ in Karnataka Project			
ANANTHAPURAM II POWER TRANSMISSION LTD.	Transmission System for Integration of Ananthapuram-II REZ-Phase-II (3 GW) Project	33390	April 2028	Multi States
POWERGRID SIROHI TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Phase IV (Part 2: 5.5 GW) (Jaisalmer/ Barmer Complex): Part B Project	32790	December 2026	Rajasthan
POWERGRID KHAVDA II-C TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-1) (Bikaner Complex): Part-D Project	32710	June 2026	Multi States
POWERGRID MEWAR TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Phase IV (Part 2: 5.5 GW) (Jaisalmer/ Barmer Complex): Part E Project	32510	March 2027	Multi States
HALVAD TRANSMISSION LTD.	Transmission System for Evacuation of Additional 7GW RE Power from Khavda RE Park under Phase-III Part A Project	31000	June 2026	Gujarat
RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.	Jaisalmer 765/400 KV Substation Associated Transmission Lines & Works Project	30608.9	March 2026	Rajasthan
KURNOOL III PS RE TRANSMISSION LTD.	Transmission System Strengthening at Kurnool-III PS for Integration of Additional RE Generation Project	28860	March 2027	Andhra Pradesh
T P GOPALPUR TRANSMISSION LTD.	Eastern Region Expansion Scheme-XXXIX (ERES-XXXIX) Project	28280	December 2027	Odisha
MUNDRA I TRANSMISSION LTD.	Transmission System for Supply of Power to Green Hydrogen/Ammonia Manufacturing Potential in Mundra area of Gujarat under Phase-I: Part B1 Scheme (3 GW at Navinal S/s) Project	28170	March 2028	Gujarat
POWERGRID BARMER I	Transmission System for Evacuation of	27350	June 2027	Rajasthan

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TRANSMISSION LTD.	Power from Rajasthan REZ Ph-IV (Part-2-5.5 GW (Jaisalmer/Barmer Complex) Part F Project			
POWERGRID MANDSAUR TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Phase IV (Part 2: 5.5 GW) (Jaisalmer/ Barmer Complex): Part C Project	27080	December 2026	Madhya Pradesh
BEAWAR TRANSMISSION LTD.	Transmission System for Evacuation of Power from REZ in Rajasthan (20 GW) under Phase III Part F Project	26000	March 2026	Rajasthan
T P PARADEEP TRANSMISSION LTD.	Eastern Region Expansion Scheme-XXXIV (ERES-XXXIV) Project	25642.4	September 2027	Odisha
TP BIKANER III NEEMRANA II TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Ph-IV (Part-1) (Bikaner Complex): Part-C Project	24400	August 2026	Rajasthan
POWERGRID VATAMAN TRANSMISSION LTD.	Transmission System for Evacuation of Power from REZ in Rajasthan (20GW) under Phase-III Part-D Phase-I Project	24230	July 2026	Multi States
NAVINAL TRANSMISSION LTD.	Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area Project	23840	July 2026	Gujarat
VINDHYACHAL VARANASI TRANSMISSION LTD.	Inter-Regional (NR-WR) Transmission System Strengthening to Relieve the Loading of 765 kV Vindhyachal-Varanasi DC Line Project	23682.6	October 2027	Multi States
POWERGRID BEAWAR-MANDSAUR TRANSMISSION LTD.	Transmission System for Evacuation of Power from Rajasthan REZ Phase IV (Part 2: 5.5 GW) (Jaisalmer/ Barmer Complex): Part D Project	22270	August 2026	Multi States

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Threat & Challenges

Analysis of major threats & challenges impacting the industry

The EPC (Engineering, Procurement, and Construction) industry faces several challenges that impact its integration into modern infrastructure development. A key issue is the lack of standardization in project execution, leading to variations in quality, cost overruns, and delays. This challenge is further intensified by supply chain disruptions and rising material costs, which not only increase project expenses but also affect the timely availability of critical components.

The growing emphasis on sustainability and environmental concerns also requires EPC companies to align with evolving green energy and infrastructure standards, adding another layer of complexity.

To address these challenges, the industry must focus on implementing standardized processes, investing in digital transformation, and embracing innovation. With rising demand for efficient, cost-effective, and sustainable infrastructure, EPC firms need strategic planning to stay competitive in a rapidly changing environment.

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Challenges:

Financial and Economic Instability:

The EPC industry is highly sensitive to economic fluctuations, making financial stability a critical concern. Various factors, such as rising material costs, delayed payments, and currency volatility, can significantly impact project budgets and overall profitability.

Regulatory and Compliance Issues:

The EPC industry operates in a highly regulated environment, requiring firms to navigate multiple legal and policy frameworks. Regulatory challenges such as complex approval processes, stringent environmental regulations, and frequent policy changes can lead to project delays, increased costs, and legal risks.

Supply Chain and Logistics Constraints:

Efficient supply chain management is crucial for EPC projects, as delays or disruptions can lead to cost overruns and extended timelines. Challenges such as material shortages, transportation bottlenecks, and vendor reliability issues can significantly impact project execution.

Technological Challenges:

The EPC industry is undergoing a digital transformation, but many firms face challenges in adopting new technologies and integrating advanced solutions. These issues can impact efficiency, project accuracy, and overall competitiveness.

Workforce and Labor Challenges:

The EPC industry relies heavily on a skilled workforce to execute complex projects efficiently. However, challenges such as labor shortages, high employee turnover can significantly impact project timelines, quality, and overall operational efficiency.

Project Execution and Operational Risks:

EPC projects are complex, involving multiple stakeholders, dynamic work environments, and strict deadlines. Challenges such as unforeseen site conditions, coordination issues, and scheduling delays can disrupt project execution, leading to increased costs and inefficiencies.

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SWOT Analysis: Indian Power Transmission & Distribution (T&D) EPC Industry

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Competitive Landscape

The EPC industry in India's power Transmission & Distribution (T&D) sector plays a crucial role in grid expansion, modernization, and rural electrification. Driven by rising electricity demand, government initiatives, and renewable energy integration, the sector provides opportunities across urban, semi-urban, and rural regions. The market structure includes a mix of large infrastructure companies and mid-sized specialized firms, operating under a competitive, tender-based environment.

Entry into this sector requires technical expertise, financial capability, and regulatory approvals, making it relatively challenging for new players. Many companies pursue backward integration through in-house manufacturing to improve cost and quality control. The majority of projects are funded or supported by government programs, with a strong focus on project execution, compliance, and timely delivery.

Key trends shaping the competitive landscape include increasing adoption of underground cabling, digital substations, smart metering, and T&D infrastructure to support renewable energy. The ability to manage complex projects, maintain institutional relationships, and adapt to evolving technology and policy requirements is critical for success in this evolving and opportunity-rich sector.

Absolute Projects (India) Limited (APIL), along with peers like Rajesh Power Services, Salasar Techno Engineering Ltd., and operates in the EPC space for power T&D. These companies focus on turnkey solutions such as cabling, substations, and O&M services, primarily catering to government utilities and infrastructure developers across India. Each brings distinct capabilities like in-house manufacturing, HV/EHV expertise, or multi-sector project execution.

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Peer Profile:

Salasar Techno Engineering Ltd.

Company Overview:

Salasar Techno Engineering Ltd. is an Indian infrastructure and steel fabrication company engaged in engineering, manufacturing, and delivery of infrastructure solutions across multiple sectors such as telecommunication, power transmission, renewable energy, smart cities, and heavy structural steel. Incorporated in 2001 and expanding since 2006 with a focus on tower manufacturing, Salasar has evolved into an infrastructure partner offering both manufactured steel products and Engineering, Procurement & Construction (EPC) services. Headquartered in Noida, India, the company serves 600+ clients across more than 25 countries, delivering steel solutions supported by manufacturing facilities and strategic collaborations (e.g., with Ramboll for design and quality control).

Salasar operates multiple manufacturing plants in Uttar Pradesh with galvanization and fabrication capacity of over 211,000 MTPA, supporting projects across telecom towers, power infrastructure, smart city solutions, and heavy steel structures.

Products / Services Offered:

- Telecom towers, monopoles, and smart poles
- Power transmission towers, substation structures, and utility poles
- Solar mounting structures and wind energy towers
- Smart city poles and integrated urban infrastructure components
- Heavy and fabricated steel structures
- EPC services including design, fabrication, erection, and commissioning

Key Customer Segments Served:

- **Telecommunication sector:** Telecom operators and infrastructure providers requiring towers, monopoles, and related structures
- **Power utilities:** Central and state power transmission and distribution companies
- **Renewable energy developers:** Solar and wind project developers requiring structural components
- **Urban infrastructure bodies:** Smart city authorities and municipal corporations

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- **Industrial & infrastructure companies:** Clients requiring heavy steel fabrication for industrial plants, railways, and large construction projects.

Rajesh Power Services Limited

Company Overview:

Rajesh Power Services Limited, established in 1971 and headquartered in Gujarat, India, is an infrastructure engineering, procurement, and construction (EPC) company focused on underground power transmission and distribution systems. The company provides end-to-end services including design, procurement, construction, commissioning, and maintenance. Rajesh Power works across utility and industrial segments, offering solutions for substations, underground cabling, and associated electrical infrastructure.

Product Offerings:

Rajesh Power Services Limited offers a range of services across the power sector:

- **Turnkey Projects:** Execution of EHV underground cabling, transmission lines, and GIS/AIS substations.
- **O&M Services:** Operation and maintenance of substations and solar power systems.
- **Utility Services:** Cable fault detection, rectification, transformer and switchgear retrofitting, and routine substation work.
- **Cable and Equipment Testing:** Testing services for electrical equipment across HV, MV, and LV networks.
- **Design and Consultancy:** Engineering support for layout, system design, and third-party inspection services.

Key Customer Segments Served:

- State power transmission and distribution utilities
- Public sector undertakings involved in power infrastructure
- Private sector clients from industrial and infrastructure domains
- EPC and renewable developers requiring project execution and support services

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Vikran Engineering Limited

Company Overview:

Vikran Engineering Limited, established in 2008 and headquartered in Mumbai, is an infrastructure EPC company engaged in delivering engineering, procurement, construction, testing, commissioning, and maintenance services across multiple sectors. The company operates in power transmission and distribution, solar, water supply, and railway/metro electrification projects. It undertakes projects across several Indian states, with a focus on both overhead and underground systems for high-voltage and extra-high-voltage transmission lines and substations.

Product & Service Offerings:

- **Power Transmission Lines:** EPC execution of high-voltage and extra-high-voltage overhead lines up to 765 kV.
- **Substations (AIS/GIS):** Turnkey development of AIS and GIS substations up to 400 kV.
- **Power Distribution:** Implementation of urban and rural distribution systems, including smart metering and feeder separation.
- **Solar Power Projects:** EPC services for solar photovoltaic systems and balance-of-system components.
- **Railway & Metro Electrification:** Installation of overhead electrification systems, traction substations, and related infrastructure.
- **Water Infrastructure:** Development of rural water supply schemes, covering intake systems, pumping stations, WTPs, distribution networks, and household tap connections.

Key Customer Segments Served:

- Government electricity boards and utilities
- Public sector bodies in the power, water, and transport sectors
- Rural infrastructure development agencies
- Private developers in renewable energy and urban infrastructure

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Comparative financial analysis

Particular	Unit	Absolute Projects (India) Limited				Salasar Techno Engineering Limited				Rajesh Power Services Limited				VIKRAN Engineering Limited			
		As at end for Fiscal				As at end for Fiscal				As at end for Fiscal				As at end for Fiscal			
		H1 FY 2026	Fiscal 2025	Fiscal 2024	Fiscal 2023	H1 FY 2026	Fiscal 2025	Fiscal 2024	Fiscal 2023	H1 FY 2026	Fiscal 2025	Fiscal 2024	Fiscal 2023	H1 FY 2026	Fiscal 2025	Fiscal 2024	Fiscal 2023
Total Revenue	₹ in Millions	1,382.88	3,121.19	2,510.73	1,416.82	7,133.88	14,176.28	12,003.39	10,024.20	6,400.73	10,792.01	2,950.61	2,111.76	3,391.10	9,223.60	7,914.40	5,291.80
Revenue From Operations	₹ in Millions	1,358.02	3,066.69	2,482.45	1,409.95	7,105.58	14,126.10	11,969.23	10,000.57	6,378.18	10,720.68	2,849.70	2,071.79	3,354.50	9,158.50	7,859.50	5,243.10
YOY Growth	in %	-45.30%	117.50%	140.56%	36.63%	-49.70%	18.02%	19.69%	44.75%	-40.51%	276.20%	37.55%	41.12%	-63.37%	16.53%	49.90%	10.25%
EBITDA	₹ in Millions	167.87	344.31	235.44	67.76	687.71	1,315.68	1,232.16	929.98	861.90	1,304.05	450.35	180.05	517.50	1,667.40	1,387.90	858.90
EBITDA Margin	in %	126.58	292.38	196.77	41.01	9.68%	9.31%	10.29%	9.30%	13.51%	12.16%	15.80%	8.69%	15.43%	18.21%	17.66%	16.38%
PAT	₹ in Millions	93.93	210.05	146.45	29.01	265.79	507.10	513.07	400.95	580.61	872.98	260.15	67.03	155.30	778.10	748.50	428.40
PAT Margin	in %	0.07	0.07	5.90%	2.06%	3.74%	3.59%	4.29%	4.01%	9.10%	8.14%	9.13%	3.24%	4.63%	8.50%	9.52%	8.17%
Operating Cash Flow	₹ in Millions	258.46	703.97	116.79	-69.63	208.95	186.90	471.13	-38.36	-231.28	-207.88	-221.08	172.19	-1,665.80	-1,290.70	-664.80	55.40
Net Worth	₹ in Millions	1,248.07	1,032.57	567.58	415.88	7,579.00	7,313.50	4,480.61	3,998.95	3,113.87	2,562.20	843.01	586.66	11,605.40	4,678.70	2,912.90	1,311.30
Debt Equity Ratio	In Times	0.81	0.86	0.55	0.57	0.45	0.43	0.78	0.68	0.26	0.22	0.91	1.02	0.27	0.58	0.63	1.18
Return on Equity	in %	0.08	0.20	25.80%	6.98%	3.51%	6.93%	11.45%	10.03%	18.65%	34.07%	30.86%	11.43%	1.34%	16.63%	25.70%	32.67%
Return on Capital Employed	in %	0.07	0.18	26.23%	9.86%	5.61%	11.40%	14.19%	12.69%	21.75%	41.54%	27.52%	14.42%	3.42%	22.11%	28.39%	28.74%
Return on Assets	in %	0.03	0.07	7.28%	2.08%	1.53%	3.15%	4.51%	4.40%	8.86%	16.59%	10.82%	3.38%	0.79%	5.74%	7.80%	6.01%
Interest Coverage Ratio	In Times	4.65	7.45	6.91	2.77	2.37	2.38	2.59	2.72	16.55	8.61	4.32	2.01	1.52	3.06	3.97	2.91
Gearing Ratio	In Times	0.81	0.86	0.55	0.57	0.45	0.43	0.78	0.68	0.26	0.22	0.91	1.02	0.27	0.58	0.63	1.18
Debtor Days	In Days	227.01	80.18	25.92	86.67	250.98	111.37	96.46	119.44	99.58	61.86	146.07	136.14	667.04	252.80	215.44	257.51
Working Capital Cycle	In Days	220.48	53.10	-21.07	-16.89	426.95	185.38	179.05	185.28	67.84	50.89	152.67	140.31	40.14	64.70	49.12	35.29
Order book	₹ in Millions	-	-	-	-	-	21,550.00	24,600.00	15,220.00	0.00	36,280.00	23,581.70	-	-	20,433.18	21,148.00	20,457.90

Note: We have used standalone statements for all the companies

Formula Used

Parameter	Formula
Total Revenue	Total Income includes Revenue from Operations and Other income.
Revenue From Operations	Revenue from operations means the revenue from operations as appearing in the restated statement of profit & loss for the relevant year/period.
EBITDA	PBT + Finance Cost + Depreciation - Other Income
EBITDA Margin	EBITDA / Revenue from Operations
PAT Margin	PAT / Revenue from Operations
Net worth	Total Assets - Total Liabilities
Debt Equity Ratios	Short-term Borrowing + Long-term Borrowing / Shareholder Equity
Return on Equity	PAT / Shareholder Equity
Return on Asset	PAT / Total Asset
Return on Capital Employed	(PBT+Finance Cost) / (Shareholder's Equity + Short Term Borrowings + Long Term Borrowings)
Key Operating Cost	Total Expenses - Finance Cost
Current Ratio	Current Assets / Current Liabilities
Interest Coverage Ratio	(EBITDA – Depreciation) / Finance Cost
Inventory Days	(Average Inventory /Cost of Goods Sold)* Days in year
Average Inventory	(Opening inventory + Closing inventory) / 2
Cost of Goods Sold	Cost of Materials Consumed + Purchases of Stock-in-Trade + Changes in Inventories of Finished Goods, Stock-in-Trade and Work-in-Progres
Debtor Days	(Trade Receivables/Revenue from operation) * Days in year
Creditor Days	(Average Trade Payable / Cost of Goods Sold) * Days in year
Average Trade Payable	(Opening Trade Payables + Closing Trade Payables) / 2
Gearing Ratio	Total Debt / Total Equity
Debtor Days	(Trade Receivables / Revenue from operation) * Days in year
Working Capital Cycle	(Inventory Dats + Debtor Days) - Creditor Days
YOY Growth %	(Value in Current Period – Value in Previous Period) / Value in Previous Period) * 100

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Company Profile: Absolute Projects (India) Limited (APIL)

Company Overview:

Established in 1995, Absolute Projects (India) Limited (APIL) is a New Delhi-based EPC (Engineering, Procurement, and Construction) company operating in the electric power infrastructure sector. Founded to deliver structured project execution in transmission and distribution, Over the years, the company has developed an operational presence across 12 states and 3 union territories in India, including Rajasthan, Punjab, Uttar Pradesh, Haryana, Himachal Pradesh, Odisha, Andhra Pradesh, Uttarakhand, Himachal Pradesh, Bihar, Jharkhand, West Bengal, Arunachal Pradesh, Delhi, Ladakh, and Jammu & Kashmir, and also has a presence in Nepal.

APIL's business model covers turnkey execution of substations (from 66 kV to 400 kV), transmission lines, HT/LT distribution systems, and consumer metering infrastructure. Its manufacturing facility in Roorkee, Uttarakhand supports the in-house production of electrical components such as galvanized steel structures, isolators, and hardware fittings. With vendor approval from organizations such as Power Grid Corporation of India Ltd. (PGCIL) and NTPC, APIL has executed contracts with public and private-sector clients. The company follows ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 standards and emphasizes process compliance, quality assurance, and timely delivery.

Product & Service Offerings:

The Company operates across four primary business verticals: (i) Power EPC Projects; (ii) Supply of in-house manufactured electrical and structural components; (iii) Civil Construction; and (iv) Operation and Maintenance Services.

i. Power EPC Projects

The Company provides engineering, procurement and construction (EPC) services for power transmission and distribution infrastructure. The scope of services includes survey, design and engineering of substations, transmission lines, and distribution systems; procurement and supply of equipment and materials; erection and installation of overhead and underground transmission and distribution lines; and testing and commissioning of substations.

The Company undertakes EPC works for both air insulated substations (AIS) and gas insulated substations (GIS). The scope also includes electrification works in rural and urban areas as part of electricity distribution network development.

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ii. Supply of In-House Manufactured Electrical and Structural Components

The Company operates manufacturing facilities located in Roorkee, Uttarakhand. Manufacturing Facility I has been operational since 2008, while Manufacturing Facility II has been established and is pending commencement of commercial operations.

The product portfolio includes electrical control panels, lighting and distribution boards, feeder pillars, aerial bundled cable accessories, and high-tension switchgear such as isolators, drop-out fuse sets, and horn gap fuse sets. The Company also manufactures hot dip galvanized transmission towers up to 220 kV, substation structures, and line structures for 11 kV and 33 kV applications, along with earthing materials.

iii. Civil Construction

The Company undertakes civil construction activities including reinforced cement concrete works and earthworks. These activities are carried out either as part of EPC projects or as standalone assignments.

iv. Operation and Maintenance Services

The Company provides operation and maintenance (O&M) services for transmission lines and substations. These services include periodic inspections, preventive maintenance, and corrective maintenance activities. O&M services are undertaken both as part of EPC project execution and as independent service offerings, supporting the operational continuity of power infrastructure assets.

Key Customer Segments Served:

- **Government Utilities and Power Transmission Corporations**: Entities responsible for managing and operating power transmission and distribution networks at the government level.
- **Public Sector Undertakings**: State-owned enterprises in the power and energy sector involved in generation, transmission, and distribution.
- **State Electricity Boards**: Regional electricity authorities managing power supply and infrastructure within individual states.

Key Strengths:

- **Experience in execution of power EPC projects**

The Company has been engaged in the execution of power EPC projects since its incorporation in 1995. Over time, the scope of operations has expanded from undertaking smaller projects for private sector

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clients to executing projects awarded by government and government-controlled entities, including select projects outside India.

The Company undertakes EPC execution across transmission and distribution infrastructure, including overhead transmission lines, underground cables, substations, and associated distribution systems. This experience across project types supports execution of projects involving varied technical and operational requirements.

- **In-house manufacturing supporting EPC execution**

The Company has established in-house manufacturing capabilities for select electrical and structural components used in power EPC projects. The product portfolio includes electrical control panels, distribution boards, feeder pillars, aerial bundled cable accessories, high-tension switchgear, transmission towers up to 220 kV, substation structures, and line structures.

These capabilities support availability of key inputs, coordination with project timelines, and quality control. In addition to internal consumption, the Company also supplies these products to third-party customers.

- **Capabilities across project lifecycle including civil and O&M services**

The Company undertakes activities across multiple stages of project execution and asset lifecycle. In addition to EPC execution, the Company provides operation and maintenance (O&M) services for transmission lines and substations, including inspection, preventive maintenance, and corrective maintenance.

The Company also undertakes civil construction works, including reinforced cement concrete works and earthworks, either as part of EPC projects or as standalone assignments. These capabilities support coordination across different stages of project implementation.

- **Approvals and compliance with industry standards**

The Company has received vendor approvals from various government utilities and transmission entities, including Jodhpur Vidyut Vitran Nigam Limited, Ajmer Vidyut Vitran Nigam Limited, Haryana Vidyut Prasaran Nigam Limited, Uttar Pradesh Power Transmission Corporation Limited, Uttarakhand Power Corporation Limited, Power Grid Corporation of India Limited, and Nepal Electricity Authority.

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The Company's manufacturing facility is certified under ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 standards. These approvals and certifications support participation in tenders and reflect adherence to specified quality, environmental, and safety requirements.

- **Strong financial performance and capital structure**

The Company has reported an increase in revenue from operations from ₹1,409.95 million in Fiscal 2023 to ₹3,066.69 million in Fiscal 2025. EBITDA increased from ₹67.76 million in Fiscal 2023 to ₹344.31 million in Fiscal 2025, and profit after tax increased from ₹29.01 million to ₹210.05 million over the same period.

The Company's net worth increased from ₹415.88 million in Fiscal 2023 to ₹1,032.57 million in Fiscal 2025. The debt-equity ratio stood at 0.86 times as of Fiscal 2025, and the Company has reported positive operating cash flows in recent periods.

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