

POWER SECTOR

Electric vehicles, data centres and green hydrogen to support electricity demand growth of more than 6.0% over the medium term

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Low per capita consumption, economic growth and emerging areas like electric vehicles, data centre capacity and Green Hydrogen are expected to support healthy electricity demand growth over the medium term.

ICRA estimates power generation capacity to increase to over 700 GW by March 2030 from 475 GW as of March 2025 to meet the growing demand.



- **India's electricity demand has shown a consistent upward trend.** Over the past decade, the demand grew at a compound annual growth rate (CAGR) of 4.7%, while gross domestic product (GDP) expanded at around 6.0%. This linkage underscores electricity's role as a fundamental driver of economic activity, with industrialisation, infrastructure development, and rising household consumption contributing significantly to this.
- **Electricity demand has grown at a 4.7% CAGR over the past decade,** with industry being the top consuming segment, followed by domestic and agricultural sectors. While the rise in industrial and commercial consumption broadly mirrors the overall expansion, the demand growth in domestic, railway traction and others (mainly public utilities) has been relatively higher due to factors such as growing urbanisation, 100% rural electrification and electrification push by the Railways.
- **India's per capita electricity consumption of 1.4 MWh remains significantly below the global average of 3-4 MWh,** far behind the developed nations. With increasing urbanisation, appliance usage, and digital infrastructure, there is substantial room for growth. As rural electrification improves and smart technologies proliferate, ICRA expects India's per capita electricity consumption to rise sharply in the coming years.
- **Electricity demand in India is projected by ICRA to grow at 6.0-6.5% over the medium term,** driven by emerging sectors like electric vehicles (EVs), data centres (DCs), and Green Hydrogen (GH). This marks a structural shift towards digital and sustainable energy consumption. These three segments are expected to contribute to 25% of the incremental demand between FY2025 and FY2030, apart from general economic growth.
- **Given the expected electricity demand growth of 6.0-6.5% over the medium term, there is a need to scale up the installed generation capacity to meet this demand.** Under ICRA's base case, the installed generation capacity is set to rise to over 700 GW as of March 2030 from 475 GW in March 2025, with over 80% of the addition driven by the renewable energy (RE) segment. While RE is the major driver, the Central and state governments are encouraging new thermal power projects to ensure sufficient buffer in the installed capacity to meet the growing demand.



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