

MODERNISATION OF THE POWER SECTOR AND RELIABLE ELECTRICITY SUPPLY

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Electricity is a concurrent subject and power distribution is handled by distribution utilities that function under the guidance of their respective State Electricity Regulatory Commission (SERC) and State Government.

Government of India is primarily responsible for undertaking comprehensive planning (through the Central Electricity Authority) and brings supportive policies from time-to-time in order to ensure the realization of these plans. Further, the Government of India supplements the efforts of the States through various schemes to help them achieve the objective of providing quality and reliable power supply to all consumers.

During FY 2025–26, 9,470 MW of fossil fuel-based capacity and 55,225 MW of non-fossil fuel-based capacity were added. In addition, 2,668.54 MW / 7,785.6 MWh of Battery Energy Storage System (BESS) capacity was added during 2026. Further, during FY 2025–26, 12,139 circuit kilometres (ckm) of inter-State and intra-State transmission lines were added.

Further, the Central Government has taken following specific measures:

1. Renewable Energy (RE) Integration and Grid Modernisation

- i. Coordinated transmission planning is undertaken in the National Electricity Plan (Transmission) to avoid congestion, minimize curtailment and optimize network augmentation requirements. To address the intermittency associated with RE sources, the Government is promoting a combination of energy storage and hybrid solutions to ensure grid stability and reliable power supply. Under the plan, around 47 GW of Battery Energy Storage Systems (BESS) has been considered for integration by 2031-32. Further, roadmap for integrating 100 GW Pumped Storage Plants (PSPs) from the year 2025-26 to 2035-36 has been prepared.
- ii. Development of RE Zones and pooling stations, enabling optimal evacuation of large renewable capacities through shared infrastructure.
- iii. The Central Government through Ministry of New Renewable Energy (MNRE) extended budgetary support for the Intra-State transmission projects under Green Energy Corridor (GEC) scheme for integration of RE.
- iv. Strengthening of grid operations, including improved forecasting, scheduling, real-time dispatch and ancillary services, to reduce balancing costs; and
- v. Market reforms, such as real-time electricity markets and flexibility mechanisms, allowing better utilization of existing resources and lower system integration costs.

- vi. As per the Third Amendment to the Central Electricity Regulatory Commission (CERC) General Network Access (GNA) Regulations, 2022, connectivity is granted separately for solar and non-solar hours by assessing available margins at RE pooling stations, ensuring better utilisation of existing transmission assets and lowering overall system costs.
- vii. Connectivity quantum is assessed for hybrid projects to optimise the overall RE quantum, thereby, facilitating efficient grid utilization.
- viii. The intra-state transmission network is being strengthened in line with the planned addition of renewable energy capacity. Further, the Inter-State Transmission System (ISTS) for renewable energy schemes are being interconnected with the intra-state transmission network to enhance the overall grid reliability.
- ix. A number of state-of-the art Static Synchronous Compensators (STATCOM) and Static VAR Compensator (SVC) are being deployed to dynamically adjust the reactive power flow in the grid for maintaining stable voltage levels.
- x. The generators with high ramp rate (e.g., hydro or gas) are also scheduled optimally to maintain load generation balance.

2. Energy Storage

- i. The Ministry of Heavy Industries has launched the PLI scheme namely “National Programme on Advanced Chemistry Cell (ACC) Battery Storage,” approved in May 2021 with a total outlay of ₹18,100 crore to establish 50 GWh of domestic Advanced Chemistry Cell manufacturing capacity, out of which 10 GWh is earmarked for Grid Scale Stationary Storage (GSSS) applications.
- ii. MoP in March, 2022 notified the Guidelines for Procurement and Utilization of Battery Energy Storage Systems as part of Generation, Transmission and Distribution assets, along with Ancillary Services.
- iii. Tariff-Based Competitive Bidding (TBCB) Guidelines for procurement of ESS (BESS & PSP) by distribution licensees are notified, creating a transparent mechanism for large-scale storage procurement.
- iv. A National Framework for Promotion of Energy Storage Systems was issued in September 2023, providing a comprehensive roadmap for deployment, market integration and regulatory facilitation of storage technologies.
- v. Government of India, in September 2023, approved a Viability Gap Funding (VGF) scheme for development of Battery Energy Storage Systems (BESS). BESS capacity of 13.22 GWh is under implementation with a budgetary allocation of Rs 3,760 Cr. under this scheme. Considering the increasing demand of BESS, Ministry of Power, in June 2025, has approved another VGF scheme for development of 30 GWh BESS capacity with a financial support of Rs 5,400 Cr from Power System Development Fund (PSDF).
- vi. 100% waiver of ISTS charges for BESS projects commissioned by June 2025 and for Hydro Pumped Storage Projects (PSP) projects wherein construction work is awarded by June, 2025, with 25% annual reduction in waiver thereafter. For Co-located Battery Energy Storage Systems (BESS) projects, 100% ISTS charges waiver has been extended for the projects commissioned upto June 2028. For PSP projects, 100% ISTS charges waiver has been extended for the projects for which construction work is awarded by June 2028.
- vii. MoP, vide order dated 01.08.2025, has increased the limit for concurrence of hydro generating stations, off- stream open loop and on-stream PSP by Central Electricity Authority from ₹1,000 crore to ₹3,000 crore. Further, off-stream closed loop PSPs has been exempted from the requirement of concurrence from the Authority.
- viii. In February 2025, CEA issued an advisory on co-location of ESS with solar power projects, recommending storage capacity of at least 10% of installed solar capacity for a minimum

duration of two hours, to improve dispatchability of solar power.

- ix. Through amendment of the Electricity Rules in September 2025, energy storage systems have been permitted to be developed, owned, leased or operated by consumers, expanding the range of ownership and business models.

3. Distribution

- i. Government of India (GoI) launched the Revamped Distribution Sector Scheme (RDSS) in July 2021 with the objective of improving the quality of power supply to consumers through a financially sustainable and operationally efficient distribution sector. Under the scheme, loss reduction and smart metering works have been sanctioned for Rs. 1.53 lakh Cr and Rs 1.31 lakh Cr respectively. The smart metering sanction covers 19.79 crore consumer meters, 52.53 lakh Distribution Transformer (DT) meters and 2.05 lakh feeder meters, totaling 20.33 crore smart meters, sanctioned based on the proposals submitted by the States/ distribution utilities. Till date, 5.73 crore smart meters have been installed under the scheme. In addition, smart meters have been installed by States under their State plans/ other schemes. Overall, 7.24 crore smart meters have been installed across the country under various schemes.
- ii. In addition to RDSS, following initiatives have been taken for distribution sector:
 - Additional borrowing space of 0.5% of Gross State Domestic Product (GSDP) has been made available to State Governments, which is conditional upon them undertaking specific reforms in the power sector including financial performance of the distribution utilities.
 - Additional Prudential Norms have been laid down for sanctioning of loans to State-owned power utilities based on performance of power distribution utilities against prescribed conditions.
 - Rules for implementation of Fuel and Power Purchase Costs Adjustment (FPPCA) and cost-reflective tariff have been framed so as to ensure that all prudent costs for supply of electricity are passed through.
 - Rules and Standard Operating Procedure have been issued for proper subsidy accounting and their timely payment

With concerted efforts of the Central and State Governments and as a result of various reform measures undertaken, there has been a reduction in overall transmission and distribution losses. AT&C losses across the country have reduced from 21.91% in FY21 to 15.04% in FY25. These collective efforts have also resulted in distribution utilities, on an aggregate basis, achieving a profit after tax (PAT) of Rs 2,701 crore in FY25 for the first time since coming into force of Electricity Act, 2003. Further, the availability of power supply in rural areas has increased from 12.5 Hours in FY 2015 to 22.6 Hours in FY 2025. The power supply in urban areas has increased to 23.6 Hours in FY 2025.

The measures relating to distribution, grid modernisation, transmission, energy storage and localised generation and consumption of electricity would strengthen India's long-term energy security by promoting resilient local energy supply chains, electrification of economy, reducing dependence on imported fossil fuels, and enabling reliable integration of domestic renewable energy resources.

This information was given by The Minister of State in the Ministry of Power, Shri Shripad Naik, in a written reply in the Rajya Sabha today.

NR/AP

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