

FRAMEWORK FOR BALANCING ELECTRICITY FINANCIAL SUSTAINABILITY AND AFFORDABILITY

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Government has established a comprehensive policy and regulatory framework under the provisions of the Electricity Act, 2003 to ensure financial sustainability of the electricity sector while safeguarding consumer interests. The framework comprises, inter alia, the National Electricity Policy, the Tariff Policy, and subordinate legislation framed by the Appropriate Government, Central Electricity Authority, and the Electricity Regulatory Commissions.

Electricity tariffs in India are determined by the Appropriate Electricity Regulatory Commissions under the Electricity Act, 2003. These Commissions are guided by the National Tariff Policy formulated by the Central Government. State Electricity Regulatory Commissions determine the retail tariff considering power procurement, transmission, wheeling and supply costs. State Governments may provide subsidy to any class of consumers including domestic consumers in the tariff determined by the State Commission.

Central Government has taken various initiatives aimed at reducing the cost of electricity. Guidelines have been issued for competitive procurement of electricity by Distribution licensees. Distribution licensees have been enabled to purchase electricity from power exchanges at competitive prices. Under the scheme for flexibility in utilisation of domestic coal, plants supplying electricity to Distribution licensees have been allowed to use cheaper coal for generation. Lower-cost inter-state generating stations are being prioritised for dispatch of electricity. Distribution licensees have also been incentivised to reduce their technical and commercial losses under Revamped Distribution Sector Scheme (RDSS).

Draft National Electricity Policy, 2026 proposes that distribution licensees prepare Resource Adequacy Plans to ensure least-system-cost based power procurement. It further provides that tariffs should progressively recover fixed costs through demand/fixed charges so that tariff design better reflects the cost of supply while promoting efficient consumption. The Draft Policy also proposes that variations in power purchase costs, including fuel costs, be passed through to consumers through automatic monthly Fuel and Power Purchase Cost Adjustment (FPPCA) mechanisms. Further, it envisages the creation of suitable stabilisation fund to moderate the impact of fluctuations in power purchase costs on consumers.

The Draft Policy further provides that State Electricity Regulatory Commissions should ensure that tariffs progressively reflect the prudent cost of supply without the creation of regulatory assets. It also proposes timely annual tariff revisions, including through suitable indexation-based mechanisms where appropriate, in cases where tariff orders are not issued within the defined timelines, so as to maintain the financial sustainability of distribution licensees.

Consumer protection has been strengthened through the Electricity (Rights of Consumers) Rules, 2020, which prescribe standards relating to new electricity connections, quality and reliability of supply, metering, billing, grievance redressal, compensation for specified service deficiencies, and consumer-centric service delivery. In addition, the Draft National Electricity Policy, 2026 proposes that distribution

licensees ensure reliable, affordable and quality 24×7 electricity supply, and strengthen grievance redressal through robust online complaint registration, tracking and disposal mechanisms, including virtual hearings by Consumer Grievance Redressal Forums and the Ombudsman.

Government of India has supplemented the efforts of the States earlier through schemes like Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) and currently under Revamped Distribution Sector Scheme (RDSS), to help them achieve the objective of providing quality and reliable supply of power.

In addition to above, to support the power distribution licensees, some of the key initiatives taken, in addition to RDSS, are as under:

- a. Additional Borrowing consent of 0.5% of Gross State Domestic Product (GSDP) to State Governments, which is conditional on them undertaking specific reforms in the power sector.
- b. Additional Prudential Norms for sanctioning of loans to State owned power utilities contingent on the performance of power distribution licensees against prescribed conditions.
- c. Rules for implementation of Fuel and Power Purchase Cost Adjustment (FPPCA) and cost reflective tariff so as to ensure that all prudent cost of supply of electricity is passed through.
- d. Rules and Standard Operating Procedure issued for proper subsidy accounting and their timely payment.

(iii) The measures taken by the Government to expand the integration of renewable energy are enclosed at **Annexure**.

(iv) The Draft National Electricity Policy, 2026 further provides a long-term roadmap for strengthening the power sector by achieving single-digit AT&C losses through smart metering, regular energy audits, GIS-based asset mapping, and consumer indexing. It also proposes strengthening of corporate governance of distribution licensees, introduction of shared distribution networks, and establishment of Distribution System Operators (DSOs) to facilitate integration of distributed renewable energy, energy storage systems and Vehicle-to-Grid (V2G) technologies. For effective transmission capacity expansion and integrating higher shares of renewable energy, the draft policy envisages modernization of the transmission network through adoption of technologies such as Flexible AC Transmission Systems (FACTS), Dynamic Line Rating, underground cabling where appropriate, simplified utilisation-based transmission connectivity, use of dated thermal generating stations as synchronous condensers and accelerated deployment of energy storage systems to support a resilient and flexible grid.

Any impact of changes in fuel prices or electricity demand on consumer tariffs is assessed by the State Electricity Regulatory Commissions in accordance with the applicable tariff regulations, including the Fuel and Power Purchase Cost Adjustment (FPPCA) mechanism, and is allowed to be recovered through tariffs only with due regulatory scrutiny.

Government of India has taken following measures to ensure affordable, reliable and sustainable electricity supply:

- i. As per National Electricity Plan (Generation), installed generation capacity in 2031-32 is likely to be 874 GW. With a view to ensure generation capacity remains ahead of projected demand, all the States, in consultation with CEA, have prepared their “Resource Adequacy Plans (RAPs)”, which are dynamic 10-year rolling plans and includes power generation as well as power procurement planning.
- ii. All the States were advised to initiate process for creating/ contracting generation capacities; from all generation sources, as per their Resource Adequacy Plans.

iii. In order to augment the power generation capacity, the Government of India has initiated following capacity addition programme:

a. Thermal Capacity Addition: The projected thermal (coal and lignite) capacity requirement by the year 2035–36 is estimated at approximately 3,15,000 MW. To meet this requirement, Ministry of Power has envisaged to set up an additional minimum 1,05,000 MW coal and lignite based thermal capacity.

Accordingly, Thermal capacities of around 21,080 MW have been commissioned since April 2023 till 30.06.2026. In addition, 47,545 MW of thermal capacity (including 4,845 MW of stressed thermal power projects) is currently under construction. The contracts of 16,000 MW have been awarded and are due for construction.

b. Central Electricity Authority has projected hydro power capacity addition of about 16,448 MW during the period 2026–27 to 2031–32. Of this, 400 MW has been commissioned as on 30.06.2026 and 12,973 MW are presently under construction.

c. Nuclear Capacity Addition: 8,000 MW of nuclear capacity is under construction and targeted to be completed by 2031-32. 5,600 MW of nuclear capacity is under various stages of planning and approval.

d. Renewables Capacity Addition: 1,47,720 MW renewable capacity including 119,580 MW of solar (including Hybrid-Solar) and 27,720 MW of wind (including Hybrid-wind) is under construction while 47,830 MW of renewable capacity including 44,440 MW of solar is at various stages of planning and targeted to be completed by 2029-30.

e. Addition of Energy Storage Systems: As on 30.06.2026, 15,870 MW/95,220 MWh Pumped Storage Projects (PSPs) are under construction. Further, a total of 6,580 MW/39,480 MWh capacity of PSPs are concurred and yet to be taken up for construction. As on 30.06.2026, 15,754 MW / 42,530 MWh Battery Energy Storage System (BESS) capacity are under construction, 11,747 MW / 38,425 MWh has been awarded and 19,192 MW / 67,574 MWh BESS capacity are under tendering stage.

(iv) Coordinated transmission planning is undertaken in the National Electricity Plan (Transmission) to avoid congestion, minimize curtailment and optimise 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.

In addition to the above, the Ministry of Power has issued guidelines dated 14.06.2024, 21.03.2025 and 15.12.2025 regarding the payment of compensation for Right of Way (RoW) for transmission lines, wherein the land rate has been linked to the prevailing market rate. These guidelines address the key challenges of RoW arising from landowners demanding higher compensation than the rates determined by the State Government.

v. Government of India launched RDSS in July 2021 with the objective of improving the quality and reliability of power supply to consumers through a financially sustainable and operationally efficient distribution Sector. The scheme has an outlay of Rs. 3,03,758 Cr. and estimated Gross Budgetary Support (GBS) from Central Government of Rs. 97,631 Cr. Under the scheme, financial assistance is being provided to the Distribution licensees (excluding Private Sector licensees) for loss reduction infrastructure works and smart metering works. Projects worth Rs. 1.53 lakh crore for loss reduction

infrastructure and Rs. 1.31 lakh crore for smart metering works have been sanctioned under the scheme which would help improve the reliability and quality of power supply in the country.

With the concerted effort of Central and State Government, the average hours of supply in rural areas have increased from 12.5 hours in FY14 to 22.6 hours in FY26 and in urban areas the same has increased from 22.1 hours in FY 14 to 23.4 hours in FY26.

ANNEXURE

A few of the key measures taken by the Government to expand the integration of renewable energy are:

- i. Development of RE Zones and pooling stations, enabling optimal evacuation of large renewable capacities through shared infrastructure;
- ii. Setting up of Regional Energy Management Centers (REMCs) for better forecasting of renewable power and to assist grid operators to manage variability and intermittency of renewable power.
- iii. 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;
- 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 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.
- xi. 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.
- xii. 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.
- xiii. 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.
- xiv. 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.

- xv. 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).
- xvi. 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.
- xvii. 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.
- xviii. 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.
- xix. 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.

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/MD

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