

GRID STABILITY AND ENERGY STORAGE

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As per the National Electricity Plan (Generation) Gazette notified in May, 2023, the projected Battery Energy Storage System (BESS) installed capacity requirement by the year 2026-27 and 2031-32 are 8.68 Giga Watt (GW) / 34 Giga Watt hour (GWh) and 47.24 GW / 236 GWh respectively with an estimated investment of about Rs 3.49 lakh Crores by 2031-32.

The projected Pumped Storage Plant (PSP) installed capacity requirement by the year 2026-27 and 2031-32 are 7.45 GW / 47 GWh and 26.69 GW / 175 GWh respectively with an estimated investment of about Rs 1.29 lakh Crores by 2031-32.

NITI Aayog in its Report titled Sectoral Insights: Power (Vol. 7) released in February, 2026, has mentioned that Energy storage is going to emerge a critical requirement for managing the variability associated with RE integration. The Government has already undertaken a series of coordinated policy, regulatory, demand-side, and supply-side measures to promote the development and deployment of Energy Storage Systems (ESS), including BESS. The details of these measures are provided below.

I. Policy and Regulatory Measures

1. The Electricity Rules were amended in December 2022 to explicitly recognize Energy Storage Systems (ESS) as an integral part of the power system, enabling their participation across generation, transmission and distribution functions.
2. In October 2022, ESS were included in the Harmonised Master List of Infrastructure of the Ministry of Finance, facilitating access to long-tenure and lower-cost financing.
3. In June 2023, the Government issued Guidelines for Preparation of Resource Adequacy Plans by State utilities, under which energy storage has been incorporated as a key planning resource for meeting peak demand and ensuring system reliability.
4. 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.
5. CEA (Measures Relating to Safety and Electric Supply) (First Amendment) Regulations, 2025 has been notified on 30.03.2026, which includes the safety requirements for BESS.

6.CEA's (Technical Standards for Construction of Electrical Plants and Electric Lines) Amendment Regulations, 2026 has been notified to specify the construction standards for BESS

II. Demand-Side Enablers and Market Development Measures

7. ISTS Charges Waiver: 100% waiver for BESS projects commissioned by June 2025 with 25% annual reduction in waiver thereafter and Hydro Pumped Storage Projects (PSP) projects wherein construction work is awarded by June 2028. For Co-located Battery Energy Storage Systems (BESS) projects, 100% ISTS charges waiver has been extended for the projects commissioned upto June 2028. For Co-located PSP projects, 100% ISTS charges waiver has been extended for the projects for which construction work is awarded by June 2028.

8. In January 2022, CERC allowed storage-based resources to provide ancillary services, including secondary and tertiary reserves, enabling ESS to support real-time grid balancing alongside conventional generators.

9. Tariff-Based Competitive Bidding (TBCB) Guidelines for procurement of BESS and PSPs are notified creating a transparent mechanism for large-scale storage procurement.

10. Under the Electricity (Rights of Consumers) Rules, 2020, amended in December 2022, consumers using diesel generator sets have been mandated to shift to cleaner backup solutions, including energy storage, within timelines specified by State Commissions.

11. Electricity supplied from BESS has been allowed to participate in the High-Price Day-Ahead Market, launched in March 2023, enabling storage to respond to peak price signals similar to gas-based generation.

12. Viability Gap Funding is provided for development of 43.8 GWh BESS capacity.

13. Closed loop off-stream PSP projects have been exempted from the requirement of concurrence by the Central Electricity Authority.

III. Supply-Side and Manufacturing-Focused Measures

14. The Ministry of Heavy Industries is implementing a Production-Linked Incentive (PLI) Scheme with an outlay of Rs 18,100 crore for establishing 50 GWh of Advanced Chemistry Cell manufacturing capacity, of which 10 GWh is earmarked for grid-scale stationary storage.

15. Enabling Infrastructure Support of ₹1.0 crore per MW for hydro PSP projects up to 200 MW has been provided. For projects exceeding 200 MW, support is provided at ₹200 crore plus ₹0.75 crore per MW.

16. CERC has allowed separate grid connectivity during non-solar hours, enabling additional renewable capacity at existing substations and facilitating storage-based shifting of power to evening and night hours.

17. 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.

18. 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.

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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