GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.1914
ANSWERED ON 31.07.2025

SCALING UP OF BATTERY ENERGY STORAGE SYSTEM

1914. MS. S JOTHIMANI:

Will the Minister of POWER
be pleased to state:

(a) the roadmap of the Government for the deployment and scaling up of Battery Energy Storage Systems (BESS) to support grid stability and facilitate the integration of variable renewable energy;

(b) the anticipated role of energy storage infrastructure in enabling India to achieve its target of 500GW of non-fossil fuel-based capacity by 2030 particularly in high renewable potential States like Tamil Nadu;

(c) whether the Government is undertaking efforts to modernize grid infrastructure and streamline Power Purchase Agreements (PPAs) with Distribution Companies (DISCOMs) to address delays and risks in renewable energy procurement especially in the southern grid and if so, the key initiatives underway; and

(d) the steps being taken by the Government to strengthen decentralized renewable energy sources such as rooftop solar, small wind and hybrid systems in rural and peri-urban areas of Tamil Nadu and other southern States including integration with ongoing DISCOM reform measures?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : Central Electricity Authority (CEA) has estimated 41.6 GW / 208 GWh Battery Energy Storage System (BESS) capacity up to FY 2029-30. To support the development of BESS, Government has undertaken several key policy initiatives:

i) A Viability Gap Funding (VGF) scheme, approved in 2023, initially aimed to support 4,000 MWh of BESS capacity by FY 2030-31 with a budgetary allocation of ₹3,760 crore. With falling battery costs, the target capacity has now been increased to 13,220 MWh while remaining within the same budget.

ii) A second VGF scheme has been approved by the Ministry of Power to develop 30 GWh of BESS capacity, with a financial support of ₹5,400 crore from the Power System Development Fund (PSDF).

iii) Full waiver of Inter-State Transmission System (ISTS) charges has been granted for co-located BESS projects commissioned up to 30th June, 2028.

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(b) : Energy Storage Systems (ESS), including BESS and Pumped Storage Projects (PSPs), will play a critical role in achieving India's target of 500 GW of non-fossil fuel-based capacity by 2030, especially in renewable-rich states like Tamil Nadu. ESS enables storage of surplus power generated during periods of high wind and solar output, which can then be dispatched during peak demand. ESS can be deployed across the generation, transmission, and distribution segments of the power system. This improves grid flexibility, enhances the utilisation of transmission infrastructure, and reduces renewable energy curtailment. Furthermore, ESS supports Load Dispatch Centres (LDCs) in delivering ancillary services, such as frequency regulation and voltage control, thereby strengthening overall grid reliability.

(c) : To modernise the transmission system, the Ministry of Power constituted a Task Force, which recommended a comprehensive roadmap for creating a smart and future-ready grid. Key measures include re-powering of existing transmission lines, deployment of Flexible AC Transmission Systems (FACTS), and adoption of Dynamic Line Loading (DLL) to optimise power flow based on real-time conditions. The Task Force also proposed installation of energy storage systems to improve transmission system utilisation and resilience, upgradation of protection and control systems, and conversion of aging substations into Gas Insulated Switchgear (GIS) or hybrid substations. Implementation of several recommendations is already in progress.

The Ministry has issued Standard Bidding Guidelines for procurement of power from grid-connected renewable energy projects to promote transparency, enhance competition, and accelerate the deployment of clean energy. Letters of Award (LoAs) issued by REIAs to successful bidders will remain valid for only one year. If Distribution Licensees do not enter into PPAs with the Renewable Energy Implementation Agency (REIA) within this period, the corresponding LoAs will be deemed cancelled. To fast-track the signing of Power Purchase Agreements (PPAs), REIAs have been advised to aggregate demand from Distribution Licensees before inviting bids.

(d) : Under the PM Surya Ghar Muft Bijli Yojana DISCOMS are promoting roof top solar. The feeder-level integration of small Renewable Energy (RE) plants is being implemented under the PM-KUSUM scheme.

To further streamline rooftop solar deployment, the Electricity (Rights of Consumers) Rules, 2020 were amended in February 2024 to simplify procedures and improve ease of installation for prosumers. Key amendments include:

- **Exemption from technical feasibility study for systems up to 10 kW capacity.**
- **The technical feasibility study shall be completed within a period of fifteen days and the outcome of the study shall be intimated to the applicant, failing which it shall be presumed that the proposal is technically feasible.**
- **The cost of distribution system strengthening for rooftop systems up to 5 kW will be borne by the distribution licensee.**
- **The timeline for commissioning rooftop solar PV systems by DISCOMs has been reduced from 30 days to 15 days.**

These measures are expected to accelerate rooftop solar adoption and enhance consumer participation in decentralized renewable energy generation in rural and peri-urban areas of Tamil Nadu and other southern States.

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