GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 303
ANSWERED ON 22/07/2025

GRID MODERNISATION

303. Dr. ASHOK KUMAR MITTAL

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether, despite ambitious targets, the existing grid is technically incapable of handling high renewables, suffering from frequent curtailments and instability, and if so, the immediate steps Government is taking to upgrade and balance grid capacity;
(b) the reasons for long-pending projects like the Green Energy Corridor which are repeatedly delayed without enforcement against defaulting agencies;
(c) the manner in which the Ministry plans to integrate intermittent solar and wind energy with available storage solutions, negligible in view of current battery capacity; and
(d) how realistic the renewable integration promises are amid rising demand without comprehensive grid modernization?

ANSWER
THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

(a) India's grid has demonstrated increasing capability to handle high Variable Renewable energy (VRE) penetration, with minor curtailment of 0.12% of total VRE generation in FY 2024-25. To address curtailment issues , the Government is implementing potential-based transmission planning, enabling temporary General Network Access (T-GNA), promoting thermal flexibilization, and deploying energy storage systems to enhance grid balancing and minimize curtailments.

(b) The Intra State Green Energy Corridor Phase-I scheme is implemented by 8 renewable rich States of Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu. Out of the 8 States, 4 have completed all the projects, viz. Rajasthan, Karnataka, Madhya Pradesh and Tamil Nadu. The phase-I of Green Energy Corridor has been delayed in remaining four states (Andhra Pradesh, Gujarat, Maharashtra and Himachal Pradesh) due to reasons such as Right of Way (RoW) issues, court cases including Great Indian Bustard matter and forest clearances.

(c) Following initiatives have been taken by the Government to promote timely addition of energy storage systems in the grid:

i. Notification of Energy Storage Obligations
ii. Waiver of Inter State Transmission System Charges
iii. Guidelines for Procurement and Utilization of Battery Energy Storage Systems
iv. Guidelines for the development of Pumped Storage Projects
v. Timely concurrence of Detailed Project Reports (DPRs) of Pumped Storage Projects
vi. Budgetary support for enabling infrastructure for Pumped Storage Projects
vii. Ancillary services from ESS under CERC (Ancillary Services) Regulations, 2022
viii. Viability Gap Funding (VGF) scheme to set up 30 GWh of Battery Energy Storage System (BESS) in India, with a funding support of ₹1.8 million/MWh, totalling ₹54 billion.

d) To ensure reliable and stable integration of renewable energy into the national grid, several key initiatives have been undertaken. These include:

i. Comprehensive Regulations and Standards governing interconnection and operations of renewable plants such as CEA connectivity standards, flexible thermal plant operations, and the Indian Electricity Grid Code 2023;
ii. Regulatory Framework for Resource Adequacy covering both short- and long-term planning;
iii. Resource Adequacy Initiatives like solar load shifting, storage targets, and large-scale battery storage pilots; and
iv. Establishment of Renewable Energy Management Centers (REMCs) for real-time forecasting, scheduling, and monitoring of RE generation across 12 RE-rich regions.

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