

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 2094
ANSWERED ON 12/03/2025

GRID STABILITY WITH INCREASING RENEWABLE ENERGY SHARE

2094. SHRI DHAVAL LAXMANBHAI PATEL
DR. HEMANT VISHNU SAVARA
DR. K SUDHAKAR

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

- (a) the target set by the Government for renewable energy capacity by the year 2030 and beyond;
- (b) the efforts being made by the Government to ensure grid stability with the increasing share of renewable sources like solar and wind;
- (c) the details of the policies being implemented to attract private investment under renewable energy projects;
- (d) the details of the new policies or regulatory changes being introduced to accelerate the adoption of renewable energy in India; and
- (e) the details of new and renewable projects being considered by the Government?

ANSWER

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

- (a) In line with Hon'ble Prime Minister's announcement at COP26, Ministry of New and Renewable Energy (MNRE) is working towards achieving 500 GW of installed electricity capacity from non-fossil sources by 2030.
- (b) Wind and Solar energy are variable and intermittent sources of power. The measures taken by the Government to address the issue of grid stability with the increasing share of renewable sources like solar and wind, include:
 - (i) Government has set up thirteen Renewable Energy Management Centres (REMCs) for better forecasting and real time monitoring of RE generation.
 - (ii) Load dispatch centres ensure that electricity demand is fully met using dispatchable sources such as hydro and thermal power when the wind does not blow and sun does not shine.
 - (iii) Installation of Static Synchronous Compensators (STATCOMs) to improve the grid reliability and voltage stability limit. A STATCOM acts as a voltage controller for the electricity grid, quickly adding or removing extra power to keep the system running smoothly.
 - (iv) Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations lay down the minimum technical requirements for RE generating plants to ensure the safe, secure and reliable operation of the grid.
- (c)&(d) Presently, most of renewable energy projects are set up by private sector developers. The Government of India has taken several steps and initiatives to promote and accelerate renewable energy capacity in the country to realize the target of 500 GW non-fossil power capacity by 2030, as given at **Annexure-I**.
- (e) The details of the various schemes/programmes being implemented by the MNRE are given at **Annexure-II**.

**Annexure-I referred to in reply of parts (c) & (d) of the Lok Sabha Unstarred Question
No. 2094 to be answered on 12.03.2025**

The Government of India has taken several steps and initiatives to promote and accelerate renewable energy capacity in the country to realize the commitment of 500 GW non-fossil energy capacity by 2030. These include, inter-alia, the following:

- Ministry of New & Renewable Energy (MNRE) has issued Bidding Trajectory for issuance of RE power procurement bids of 50 GW/annum by Renewable Energy Implementing Agencies (REIAs) [REIAs: Solar Energy Corporation of India Limited (SECI), NTPC Limited, NHPC Limited, SJVN Limited] from FY 2023-24 to FY 2027-28.
- Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.
- Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025, for Green Hydrogen Projects till December 2030 and for offshore wind projects till December 2032.
- To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act 2001 will attract penalties on non-compliance. RCO also includes specified quantum of consumption from Decentralized Renewable Energy sources.
- Project Development Cell for attracting and facilitating investments has been set up.
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable RE (FDRE) projects have been issued.
- Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, New Solar Power Scheme (for Tribal and PVTG Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and Dharti Aabha Janjatiya Gram Utkarsh Abhiyan (DA JGUA), National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.
- Scheme for setting up of Solar Parks and Ultra Mega Solar Power projects is being implemented to provide land and transmission to RE developers for installation of RE projects at large scale.
- Laying of new transmission lines and creating new sub-station capacity has been funded under the Green Energy Corridor Scheme for evacuation of renewable power.
- Electricity (Rights of Consumers) Rules, 2020 has been issued for net-metering up to five hundred Kilowatt or up to the electrical sanctioned load, whichever is lower.

- “National Repowering and Life Extension Policy for Wind Power Projects, 2023” has been issued.
- “Strategy for Establishments of Offshore Wind Energy Projects” has been issued indicating a bidding trajectory of 37 GW by 2030 and various business models for project development.
- The Offshore Wind Energy Lease Rules, 2023 have been notified vide Ministry of External Affairs notification dated 19th December 2023, to regulate the grant of lease of offshore areas for development of offshore wind energy projects.
- Standard & Labelling (S&L) programs for Solar Photovoltaic modules and Grid-connected Solar Inverters have been launched.
- To augment transmission infrastructure needed for steep RE trajectory, transmission plan has been prepared till 2030.
- “The Electricity (Late Payment Surcharge and related matters) Rules (LPS rules) have been notified.
- Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022, has been notified on 06th June 2022 with objective of ensuring access to affordable, reliable, and sustainable green energy for all. Green Energy Open Access is allowed to any consumer with contract demand of 100 kW or above through single or multiple single connection aggregating Hundred kW or more located in same electricity division of a distribution licensee.
- Green Term Ahead Market (GTAM) has been launched to facilitate sale of Renewable Energy Power through exchanges.
- Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators.

**Annexure-II referred to in reply of part (e) of the Lok Sabha Unstarred Question
No. 2094 to be answered on 12.03.2025**

Details of the ongoing major Renewable Energy Schemes / Programmes

1. Scheme for Development of Solar Parks and Ultra-mega Solar Power Projects with a target of setting up 40,000 MW capacity. Under the scheme, the infrastructure such as land, roads, power evacuation system water facilities are developed with all statutory clearances/approvals. Thus, the scheme helps expeditious development of utility-scale solar projects in the country.
2. PM-Surya Ghar: Muft Bijli Yojana for installing rooftop solar and providing free electricity up to 300 units every month for One Crore households.
3. Production Linked Incentive scheme 'National Programme on High Efficiency Solar PV Modules' for achieving manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV modules (Tranche- I & II).
4. PM-KUSUM Scheme to promote small Grid Connected Solar Energy Power Plants, stand-alone solar powered agricultural pumps and solarisation of existing grid connected agricultural pumps. The scheme is not only beneficial to the farmers but also States and DISCOMs. States will save on subsidy being provided for electricity to agriculture consumers and DISCOMs get cheaper solar power at tail end saving transmission and distribution losses.
5. Central Public Sector Undertaking (CPSU) Scheme Phase-II (Government Producer Scheme) for setting up 12,000 MW grid-connected Solar Photovoltaic (PV) Power Projects by Government Producers, using domestically manufactured solar PV cells and modules, with Viability Gap Funding (VGF) support, for self-use or use by Government/ Government entities, either directly or through Distribution Companies (DISCOMS).
6. National Green Hydrogen Mission launched with an outlay of Rs. 19,744 crore with aim to make India a Global Hub for production, utilization and export of Green Hydrogen and its derivatives.
7. Green Energy Corridors (GEC): to create intra-state transmission system for renewable energy projects. Central Financial Assistance (CFA) is provided to set up transmission infrastructure for evacuation of Power from Renewable Energy projects in total ten States (considering both the phases of Intra-State Transmission System GEC):
 - (i) Intra-State Transmission System Green Energy Corridor Phase-I
 - (ii) Intra-State and Inter-State Transmission System Green Energy Corridor Phase-II
8. Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects for installation and commissioning of 1 GW of Offshore Wind Energy Projects (500 MW each off the coast of Gujarat and Tamil Nadu), also for upgradation of two ports to meet logistics requirements for offshore wind energy projects.
9. Bio-Energy Programme:

- Waste to Energy Programme : Programme on Energy from Urban, industrial and Agricultural Wastes/Residues
- Biomass Programme: Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries.
- Biogas Programme : for promotion of family type Biogas plants

10. Renewable Energy Research and Technology Development (RE-RTD) Programme.

11. Human Resource Development Scheme with components such as short term trainings & skill development programmes, fellowships, internships, support to lab upgradation for RE and renewable energy chair.

12. New Solar Power Scheme (for Tribal and PVTG Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and Dharti Aabha Janjatiya Gram Utkarsh Abhiyan (DA JGUA) with a provision for providing off-grid Solar Lighting where electricity supply through grid is not techno-economically feasible.