GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 305
ANSWERED ON 21.07.2026

ENERGY SECURITY AND RENEWABLE TRANSITION IN INDIA

305. SHRI JAGGESH

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:
(a) whether the Government is aware of global energy disruptions affecting India's energy security and the steps taken to reduce fossil fuel dependence;
(b) whether a comprehensive policy exists to accelerate renewable energy, such as solar, wind, and green hydrogen, with defined targets;
(c) whether investments are being expanded in energy storage technologies, including batteries and pumped hydro, to ensure a reliable supply; and
(d) whether the Government is promoting decentralized systems like rooftop solar and microgrids, especially in rural areas, to improve resilience against future energy uncertainties, along with details of measures undertaken in this regard ?

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

(SHRI SHRIPAD YESSO NAIK)

(a) & (b) Considering the evolving global energy landscape and the potential impact on India's energy security, the Government has taken various steps to reduce fossil fuel dependence including through accelerate deployment of renewable energy from different sources such as solar, wind and green hydrogen, achieving 500 GW capacity from non-fossil resources targeted by 2030. The major steps taken in this regard are given at **Annexure-I.**

(c) Considering the critical role of energy storage in facilitating large-scale integration of renewable energy, following steps have been taken by the Government to expand investments in this area:

- Issued National Framework to promote Energy Storage Systems in the country.
- Notified Guidelines for Procurement and Utilization of Battery Energy Storage Systems (BESS) as part of Generation, Transmission and Distribution assets, along with Ancillary Services.
- Issued Guidelines to promote Pumped Storage Plants (PSP).
- Granted 100% waiver of Inter-State Transmission System (ISTS) charges for PSP for which construction work is awarded on or before June 30, 2028
- Granted 100% ISTS charges waiver for co-located BESS projects, commissioned on or before 30th June 2028, with certain conditions.
- In March 2024, the Government approved a Viability Gap Funding (VGF) Scheme for the development of large-scale BESS, with an outlay of ₹3,760 crore for the development of 13,220 MWh, at a VGF of ₹27 lakh per MWh.
- In June 2025, the Government approved another VGF Scheme for 30 GWh, funded through ₹5,400 crore from the Power System Development Fund (PSDF), at a VGF of ₹18 lakh per MWh.

- Earmarked 10 GWh capacity for Grid Scale Stationary Storage applications under the “National Programme on Advanced Chemistry Cell (ACC) Battery Storage".
- Issued an ‘Advisory on co-locating Energy Storage Systems with Solar Power Projects to enhance grid stability and cost efficiency’.

(d) The Government is actively promoting decentralized renewable energy systems, including rooftop solar, decentralized solar-based applications, microgrid to improve energy access, enhance energy security, particularly in rural and remote areas. Details of the major initiatives in this area are given in **Annexure-II.**

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Annexure-I referred in Reply to Part (a) and (b) of the Rajya Sabha Unstarred Question No. 305 on "Energy Security and Renewable Transition in India" to be answered on 21.07.2026

Steps taken by the Government to accelerate renewable energy capacity in the country to reduce fossil fuel dependence

- 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 and Small Hydro Power (SHP) Development Scheme 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.
- National Repowering and Life Extension Policy for Wind Power Projects (2023) issued.
- 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.
- The Revised Guidelines for installation of prototype wind turbine models issued.
- Procedure for inclusion/updating Wind Turbine Model in the Revised List of Models and Manufacturers of Wind Turbines (RLMM) issued on 31st July 2025. The amendment renames RLMM as Approved List of Models and Manufacturers [ALMM (Wind)] and mandates usage of listed components such as Blade, Tower, Generator, Gearbox and Special Bearings (Main, Pitch and Yaw Bearing) along with mandatory relocation of data centres within India and prohibition of real-time data transfer outside India.
- The Standard Operating Procedure (SOP) for ALMM-Wind and ALMM – Wind Turbine Components (ALMM-WTC) issued on 29th October 2025, detailing the end-to-end process for application, verification, factory inspection, component evaluation and model enlistment.
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable Renewable Energy (FDRE) projects have been issued.
- National Green Hydrogen Mission (NGHM), with an objective to make India a global hub of production, usage and export of green hydrogen and its derivatives. Under NGHM, India aims to establish green hydrogen production capacity of 5 Million Metric tonnes per annum by 2030.
- 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
- 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.

- Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.
- Inter State Transmission System (ISTS) charges were waived for inter-state sale of solar and wind power for projects commissioned by 30th June 2025, for Green Hydrogen Projects till December 2030 and for offshore wind projects till December 2032.
- 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.
- 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, 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.
- The Electricity (Promotion of Generation of Electricity from Must-Run Power Plant) Rules, 2021, issued in October 2021 ensure that must-run power plants, including RE and hydro plants during water spillage, cannot be curtailed for merit order dispatch or for other commercial factors. Curtailment is only allowed for technical constraints or grid security issues.
- 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.
- The Green Term Ahead Market (GTAM) followed by the Green Day Ahead Market (G-DAM) were launched to facilitate sale of Renewable Power through exchanges.
- Pilot Scheme on Contract for Difference for renewable energy projects has been launched to provide an alternative renewable power procurement instrument.
- Quality Control Orders for Solar Photovoltaic products (i.e., Solar PV Modules, Solar PV Inverters & Storage Battery) and Solar Water Heating systems notified.
- Standard & Labelling (S&L) programs for Solar Photovoltaic modules and Grid-connected Solar Inverters have been launched.

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Annexure-II referred in Reply to Part (d) of the Rajya Sabha Unstarred Question No. 305 on "Energy Security and Renewable Transition in India" to be answered on 21.07.2026

Initiatives launched by the Government to Promote Decentralized Renewable Energy

I. PM Surya Ghar: Muft Bijli Yojana (PMSG: MBY)

The PMSG: MBY is being implemented since February 2024 across the country to increase the share of solar rooftop capacity and empower residential households to generate their own electricity. The scheme has an outlay of Rs 75,021 crore and is to be implemented till FY 2026-27.

Aim and Objectives of PMSG: MBY:

i. To achieve 1 crore rooftop solar (RTS) installations in residential sector.
ii. To help provide free/low-cost electricity to 1 crore households up to 300 units of electricity per month by installation of RTS.
iii. To produce renewable electricity of 1 lakh crore units through the solar capacity installed under the scheme, which will result in reduction of 72 crore ton of CO_2eq emission during the 25 years of lifetime for RTS projects.
iv. To develop the required enabling ecosystem for RTS projects, including regulatory support, manufacturing facilities, supply chain, vendor network, operation & maintenance facilities, etc., in the country.
v. To boost local economy and employment generation along with enhanced energy security.
vi. To aid in achievement of India's commitment for green climate through its NDCs (Nationally Determined Contributions) at UNFCCC by installation of 30 GW of solar capacity through RTS by 2026-27.

The available CFA for residential sector is as follows: -

- For individual households, the CFA is Rs. 30,000/- per kWp for the first 2 kWp and Rs. 18,000/- per kWp for the additional one kWp. The subsidy is capped at 3 kWp rooftop solar plant capacity for individual household.
- For Group Housing Societies/ Residential Welfare Associations (GHS/RWA), the CFA is Rs. 18,000/- per kWp with rooftop solar plant capacity limit of 500 kWp.
- In case of special category states/UTs including Uttarakhand, Himachal Pradesh, J&K, Ladakh, States in the North East Region, UTs of A&N and Lakshadweep, the CFA is 10% higher.

II. Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM KUSUM):

- **Component A:** Setting up of 10,000 MW of Decentralized Ground/Stilt Mounted Solar Power Plants

  Benefits available: Procurement Based Incentive (PBI) to the DISCOMs @ 40 paise/kWh or Rs.6.60 lakhs/MW/year, whichever is lower, for buying solar power under this scheme. The PBI is given to the DISCOMs for a period of five years from the Commercial Operation Date of the plant. Therefore, the total PBI payable to DISCOMs is up to Rs. 33 Lakh per MW.

- **Component B:** Installation of 14 Lakh Stand-alone Solar Pumps

Benefits available: CFA of 30% of the benchmark cost or the tender cost, whichever is lower, of the stand-alone solar agriculture pump is provided. However, in North Eastern States, Sikkim, Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark cost or the tender cost, whichever is lower, of the stand-alone solar pump is provided. Component B can also be implemented without State share of 30%. The Central Financial Assistance will continue to remain 30% and rest 70% will be borne by the farmer.

- **Component C:** Solarisation of 35 Lakh Grid Connected Agriculture Pumps including through Feeder Level Solarisation

  Benefits available:

  a) Individual Pump Solarization (IPS): CFA of 30% of the benchmark cost or the tender cost, whichever is lower, of the solar PV component will be provided. However, in North Eastern States, Sikkim, Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark cost or the tender cost, whichever is lower, of the solar PV component is provided. Component C (IPS) can also be implemented without State share of 30%. The Central Financial Assistance will continue to remain 30% and rest 70% will be borne by the farmer.
  b) Feeder Level Solarization (FLS): Agriculture feeders can be solarized by the State Government in CAPEX or RESCO mode with CFA of Rs. 1.05 Crore per MW as provided by MNRE. However, in North Eastern States, Sikkim, Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarkhand, Lakshadweep and Andaman & Nicobar Island, CFA of Rs. 1.75 crore per MW is provided.

III. Off-Grid and Decentralized Renewable Energy (DRE) Systems:

New Solar Power Scheme (for PVTG and Tribal Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) and Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) for the electrification of un-electrified households in PVTG and Tribal habitations/villages, solarisation of Multi-Purpose Centres (MPCs) in PVTG areas and solarisation of public institutions in identified tribal habitations/villages through off-grid solar systems; where grid connectivity is not techno- economically feasible.

The implementation period for the electrification of PVTG and Tribal households; and solarisation of MPCs of PVTGs areas under the New Solar Power Scheme expired on 31.03.2026. The temporary extension has been provided upto 30.09.2026 or the date of approval of the schemes for the 16th Finance Commission cycle whichever is earlier for completion of already sanctioned projects. The implementation period currently available for the solarisation of public institutions under the DAJGUA component is up to FY 2028–29.