GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 300
ANSWERED ON 21.07.2026

IMPROVEMENT AND EXPANSION OF SOLAR POWER

300. SHRI I.S. INBADURAI

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

(a) whether Government has taken steps to improve solar power generation capacity in the country, if so, the details thereof, including targets achieved, investments made and progress under various renewable energy schemes;

(b) whether Government has addressed challenges in solar power adoption such as land availability, storage and grid integration, if so, measures taken to overcome these issues and promote widespread solar energy usage; and

(c) whether incentives and subsidies are being provided to encourage rooftop solar installations and domestic manufacturing, if so, the details thereof and the steps taken to achieve self-reliance in solar equipment production in the country?

ANSWER

THE MINISTER OF STATE FOR NEW & RENEWABLE ENERGY AND POWER

(SHRI SHRIPAD YESSO NAIK)

(a) The Government has taken various steps and initiatives to improve the solar energy generation capacity in the country. The details are given at **Annexure-I.** Through these initiatives, the solar sector in the country has seen a considerable growth and the total installed solar capacity in the country, as on 30-06-2026, is 162.15 GW.

The details of the investments made in the renewable energy sector including solar sector are given at **Annexure-II.**

The progress made under various renewable energy schemes is given at **Annexure-III.**

(b) The measures taken to overcome the challenges in solar power adoption such as land availability, storage and grid integration and to promote widespread solar energy usage are given at **Annexure-IV.**

(c) The details of the incentives provided to encourage rooftop solar installations are given in **Annexure-V.**

The Government has been consistently bringing out various initiatives to promote domestic manufacturing of solar energy equipment in the country and its details are in **Annexure-VI.**

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Annexure-I referred to in reply of part (a) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Steps and initiatives taken by the Government to increase the solar energy generation in the country

- 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 Aaba Janjatiya Gram Utkarsh Abhiyan (DA JGUA) 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.
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind-Solar Hybrid and Firm & Dispatchable Renewable Energy (FDRE) projects have been issued.
- 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.
- Waiver on Inter State Transmission System (ISTS) charges for renewable energy projects including green hydrogen projects, with certain timelines and conditions.
- 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.
- Quality Control Orders for Solar Photovoltaic products (i.e., Solar PV Modules, Solar PV Inverters & Storage Battery) and Solar Water Heating systems notified.
- Issued National Framework for promoting & developing Energy Storage Systems.
- Issued Guidelines for Resource Adequacy Planning Framework for India.
- 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.
- 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, 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.

Annexure-II referred to in reply of part (a) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Details of the investments made in the renewable energy sector including solar sector

As per DPIIT data, since FY 13-14 till FY 25-26, 'Non-Conventional Energy' sector has attracted FDI of USD 22.33 Billion (approx.), which includes solar energy sector. During the same period, as per the data provided by Department of Financial Services (DFS), 12 Public sector banks, IREDA, PFC, REC, NaBFID, IIFCL and SIDBI have cumulatively deployed approx. INR 16.92 Lakh Crores in Renewable Energy sector, including solar energy sector.

Further, Foreign Direct Investment (FDI) up to 100 per cent is permissible through automatic route for setting up renewable energy projects including solar energy projects in the country.

Annexure-III referred to in reply of part (a) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Progress made under various ongoing RE schemes

(a) PM-Surya Ghar: Muft Bijli Yojana: As of 30.06.2026, on the National Portal of the scheme, a total of 44.52 lakh Households have been benefitted by rooftop solar installations.

(b) PM-KUSUM: As of 30.06.2026, 1726.92 MW capacity has been installed under Component-A, more than 11.49 lakh solar agriculture pumps have been installed under Component-B, and more than 16.32 lakh grid connected agriculture pumps have been solarized under Component-C.

(c) Solar Parks: As of 30.06.2026, MNRE has sanctioned 56 Solar Parks with aggregate capacity of 39,461 MW in 14 States across the country. An aggregate capacity of 18,919 MW of solar projects has been commissioned as on 30.06.2026 in 28 Solar Parks.

(d) Production Linked Incentive scheme "National Programme on High Efficiency Solar PV Modules": Under **Tranche-I**, Letters of Award have been issued for setting up 8,737 MW capacity of fully integrated solar PV module manufacturing units (involving manufacturing of polysilicon + ingot-wafer + cell + module). Under **Tranche-II**, Letters of Award have been issued for setting up 39,600 MW of fully / partially integrated solar PV module manufacturing units.

(e) National Green Hydrogen Mission has been launched **o**n 4th January 2023 with an initial outlay of Rs.19,744 crore up to the year 2029-30. The Mission aims to make India the Global Hub for production, usage and export of Green Hydrogen and its derivatives.

(f) Green Energy Corridor: Under GEC Phase-I which is being implemented in 8 States namely Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu, against the target of 9461 ckm, as on 30.06.2026, 9130 ckm of transmission lines have been constructed. Under GEC Phase-II (for addition of 7863 ckm of transmission lines and 24388 MVA substation), which is being implemented in the 7 States namely Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh, out of total 95 packages, 93 packages have been tendered, of which 85 have been awarded and 1124 ckm transmission lines have been charged and 6860 MVA substation have been commissioned as on 30.06.2026.

(g) Offshore Wind power: With a view to tap off-shore wind energy potential of the country, a VGF scheme at a total outlay of Rs.7453 crore has been approved by the Union Cabinet on 19.6.2024 for installation and commissioning of 1 GW of offshore wind energy projects (500 MW each off the coast of Gujarat and Tamil Nadu), and for upgradation of two ports to meet logistics requirements for offshore wind energy projects. MNRE has issued Scheme Guidelines on 11.09.2024. Under the scheme, first tender for development of 500 MW offshore wind

energy project off Gujarat coast issued by SECI on 13.09.2024. However, no bid received till last date of bid submission 31.07.2025. MNRE has carried out meeting with developers for participation in bid. The bid will be issued based on the developer interest. Parallelly, Ministry have asked ONGC and NTPC to submit a proposal to develop the project based on nomination basis.

(h) 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. Based on the proposals received from the state implementing agencies, electrification of total 12,951 nos. of (8852 under PM JANMAN Component + 4099 under DA JGUA Component) PVTG and Tribal households have been sanctioned till 30.06.2026, of which 11,838 households are reported to be electrified through solar off-grid systems. Further, 8 nos. of Public Institutions have been sanctioned in Assam for electrification under DA JGUA, which are under implementation.

(i) Capacity building and Skill Development: A total of 2.96 lakh candidates have been skilled/trained in solar, wind, small hydro and green hydrogen areas under various schemes of the Ministry (2.14 lakh under PM-Surya Ghar: Muft Bijli Yojana, 75,000 under HRD scheme and 7000 under NGHM).

(j) Small Hydro Power (SHP) Development Scheme: A new Small Hydro Power (SHP) Development Scheme (from 1 MW to 25 MW) for the period FY 2026-27 to FY 2030-31 with a total financial outlay of Rs. 2,584.60 Crore has been approved on 18th March, 2026. The Scheme targets installation of approximately 1,500 MW of new SHP capacity across India. The Administrative Approval for implementation of Small Hydro Power (SHP) Development Scheme from 1 MW to 25 MW for the period FY 2026-27 to FY 2030-31, was issued on 15th of May, 2026.

Annexure-IV referred to in reply of part (b) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Measures taken to overcome the challenges in solar power adoption such as land availability, storage and grid integration and to promote widespread solar energy usage

Land:

Most of the solar power projects are implemented by private developers and the land required for the projects are identified and acquired by them. Since, land is a state subject, the identification of land is generally done through the respective State/UT Governments. To streamline identification & allotment of land and for easing land rules like exempting non-agriculture land conversion etc., the Government has been taking up matters with the State/UT Governments. Under the scheme for development of "Solar Parks and Ultra Mega Solar Power Projects", land of over 2 lakh acres has been acquired for development of various solar parks in the country.

Storage:

Ministry of Power is implementing a Viability Gap Funding (VGF) scheme for development of 13.2 GWh capacity of Battery Energy Storage Systems (BESS) in the country, with a budgetary support of ₹3,760 crore. Ministry of Power further extended this scheme for development of an additional BESS capacity of 30.0 GWh with a total financial support of ₹5,400 crore through Power System Development Fund (PSDF).

Further, CEA has also issued an advisory on co-location of Energy Storage Systems (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.

Grid Integration:

To address the challenges of grid integration, following initiatives have been taken by the Government for strengthening of grid infrastructure and storage systems:

i. Comprehensive Regulations and Standards governing interconnection and operations of renewable plants such as CEA (Central Electricity Authority) connectivity standards, flexible thermal plant operations, and the Indian Electricity Grid Code 2023;
ii. Establishment of Renewable Energy Management Centers (REMCs) for real-time forecasting, scheduling, and monitoring of RE generation across 12 RE-rich regions.
iii. Notification of Energy Storage Obligations
iv. Waiver of Inter State Transmission System Charges for Battery Energy Storage Systems

v. Issuance of Guidelines for Procurement and Utilization of Battery Energy Storage Systems.

vi. Issuance of Guidelines for the development of Pumped Storage Projects

vii. Implementation of Intra-State Green Energy Corridor scheme for evacuation of Renewable Energy with in the states.

Annexure-V referred to in reply of part (c) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Details of incentives and subsidies being provided to encourage rooftop solar installations

1. Under the PMSG: MBY, the CFA for installation of Rooftop Solar in the Residential Sector is given below:

S.No.	Type of Residential Segment	CFA	CFA (Special Category States/UTs)
1	Residential Sector (first 2 kWp of Rooftop Solar (RTS) capacity or part thereof)	Rs.30,000/kWp	Rs.33,000/kWp
2	Residential Sector (with additional RTS capacity of 1 kWp or part thereof)	Rs.18,000/kWp	Rs.19,800/kWp
3	Residential Sector (additional RTS capacity beyond 3 kWp)	No additional CFA	No additional CFA
4	Group Housing Societies/ Residential Welfare Associations (GHS/RWA) etc. for common facilities including EV charging up to 500 kWp (@ 3 kWp per house)	Rs.18,000/kWp	Rs.19,800/kWp

2. The PMSG: MBY scheme includes the provision for incentive to DISCOMs to motivate and help them in activities such as create conducive regulatory and administrative mechanisms, achieve targets for implementation. The incentive is pegged at 5% of applicable benchmark cost for capacity achieved above 10% and less than 15% of installed base capacity; 10% of the applicable benchmark cost for capacity achieved beyond 15% of installed base capacity.

3. To push the deployment of residential rooftop solar system (RTS) and undertake local mobilization efforts, the PMSG: MBY scheme also includes the provision for incentive to the Urban Local Bodies (ULBs) and Panchayat Raj Institutions (PRIs), at the rate of Rs.1000 for every installation of RTS in residential segment in the jurisdiction of ULB/PRI, for which CFA has been transferred to consumer.

4. Further, a fund of Rs. 800 crores have been provisioned for developing a Model Solar Village in each district of the country, with an assistance of Rs 1 crore per Model Solar Village under PMSG: MBY scheme.

Annexure-VI referred to in reply of part (c) of the Rajya Sabha Unstarred Question No. 300 to be answered on 21.07.2026

Details of various initiative to promote domestic manufacturing of solar energy equipment in the country

(i) Production Linked Incentive (PLI) Scheme: The Government of India is implementing the Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules, for achieving domestic manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV modules, with an outlay of Rs. 24,000 crores. Under the Scheme, Letters of Award have been issued for setting up of 48,337 MW of fully/partially integrated solar PV module manufacturing units.

(ii) Domestic Content Requirement (DCR): Under some of the current schemes of the MNRE, namely CPSU Scheme Phase-II, PM-KUSUM Components B & C, and PM Surya Ghar: Muft Bijli Yojana, wherein government subsidy is given, it has been mandated to source solar PV cells and modules from domestic sources.

(iii) Imposition of Basic Customs Duty on import of solar PV cells and modules: The Government has imposed Basic Customs Duty (BCD) on import of solar PV cells and solar PV modules.

(iv) Exemption of Custom Duty on capital goods for manufacture of Solar Cells and Modules: The Government has exempted Basic Customs Duty on import of goods specified in List 18 of Notification No. 45/2025-Customs dated 24th October 2025, for the manufacturer of solar PV cells and modules.