

GOVERNMENT OF INDIA  
MINISTRY OF NEW AND RENEWABLE ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 1935**  
TO BE ANSWERED ON 10.12.2015

**SCHEMES UNDER JNNSM**

1935. PROF. A.S.R. NAIK:  
SHRI RABINDRA KUMAR JENA:

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

- (a) the details of the schemes being implemented by the Government under Jawaharlal Nehru National Solar Mission (JNNSM);
- (b) the physical and financial targets set under each of such schemes in the last five years and the achievements made thereunder, State/UT-wise;
- (c) the mechanism in place with the Government to achieve the goals set under the mission till 2022; and
- (d) the steps being taken to promote and encourage small solar power projects in rural areas under the scheme?

**ANSWER**

THE MINISTER OF STATE FOR POWER, COAL & NEW AND RENEWABLE ENERGY  
(INDEPENDENT CHARGE) (SHRI PIYUSH GOYAL)

**(a):** The details of the schemes under Jawaharlal Nehru National Solar Mission (JNNSM) are given at Annexure-I

**(b):** The state/UT wise details of physical and financial targets set under each of the schemes and the achievement made thereunder are given at Annexure-II.

**(c):** The Government has revised the National Solar Mission target of Grid Connected Solar Power projects from 20,000 MW by 2022 to 1,00,000 MW by 2022. It is planned to achieve the revised target of 100 GW by setting up Distributed Rooftop Solar Projects and Medium & Large Scale Solar Projects, the break-up of which is as under:-

Category I	Proposed Capacity (MW)	Category II	Proposed Capacity (MW)
Rooftop Solar	40,000	Scheme for Decentralized Generation of Solar Energy Projects by Unemployed Youths and Farmers	10000
		PSUs	10,000
		Large Private Sector/IPPs	5,000
		SECI	5,000
		Under State Policies	20,000
		Ongoing programmes including past achievements	10,000
<b>Total</b>	<b>40,000</b>		<b>60,000</b>

The Ministry has chalked out year wise target to achieve 1,00,000 MW by 2022 which is as under :

Year	Rooftop Projects (MW)	Ground Mounted Solar Power Projects (MW)	Total (in MW)
2015-16	200	1,800	2,000
2016-17	4,800	7,200	12,000
2017-18	5,000	10,000	15,000
2018-19	6,000	10,000	16,000
2019-20	7,000	10,000	17,000
2020-21	8,000	9,500	17,500
2021-22	9,000	8,500	17,500
Total	40,000	57,000	97,000 *

\*3,743 MW commissioned upto 31.03.2015.

**(d):** The steps taken by the Government to encourage small solar power projects under the scheme and to tap the potential of green energy are as under:

- i. Grant of subsidy on Off-grid applications.
- ii. Provision for renewable purchase obligation for solar has been made in the National Tariff Policy.
- iii. Provision for Concessional Import duty/Excise duty exemption, accelerated depreciation and tax holiday for setting up of solar power plants.
- iv. Facility for bundled power for Grid Connected Solar Projects through various interventions announced from time to time.
- v. Awareness programmes such as exhibitions, training workshops etc. are conducted.
- vi. Several R&D efforts initiated for new technologies and improvement in efficiency.
- vii. Foreign direct investment is permitted in the automatic route.
- viii. Investment in rooftop solar is considered as a part of housing loan/house improvement loan by all banks including private banks.

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**ANNEXURE-I REFERRED TO IN REPLY TO PART (a) OF THE LOK SABHA  
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**DETAILS OF SCHEMES UNDER JNNSM**

**(I) Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects.**

The scheme for development of Solar Parks and Ultra Mega Solar Power Projects has been rolled out by Ministry of New & Renewable Energy on 12-12-2014. Government has proposed to set up at least 25 Solar Parks and Ultra Mega Solar Power Projects targeting over 20,000 MW of solar power installed capacity within a span of 5 years starting from 2014-15. The capacity of the Solar Parks shall be 500 MW and above. However, smaller parks may be considered in Himalayan Region & other hilly States.

Under the scheme, the Ministry provides Central Financial Assistance (CFA) of Rs. 25 lakh per solar park for preparation of Detailed Project Report (DPR), conducting surveys, etc. Beside this, CFA of up to Rs. 20.00 lakh per MW or 30% of the project cost, including Grid-connectivity cost, whichever is lower, is also provided on achieving the milestones prescribed in the scheme.

**(II) Scheme for Development of Solar PV Power Plants on Canal Banks/ Canal Tops.**

The Government has approved the implementation of "Pilot-cum-Demonstration Project for Development of Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops" on 5<sup>th</sup> December, 2014. A target of 100 MW Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops (50 MW on Canal Tops and 50 MW on Canal Banks) has been set.

Implementation Arrangements

- 1. Eligibility:** State Power Generation Companies/ State Government Utilities/ any other State Government Organization/ PSUs/ GoI PSUs or GoI organisations. Proposals from States in Project mode will also be acceptable on completion during 2014-15 or later.
- 2. Scheme Manager:** The Scheme manager on behalf of MNRE would be Solar Energy Corporation of India (SECI) under the MNRE. SECI will handle funds to be made available under the scheme on behalf of GOI, for which they will be provided service charge of 1% of the funds handled/ routed through them.
- 3. Mode of Operation of Scheme:** The Implementing Agency will submit the application / proposal for setting up Grid-connected Solar PV Power Plants on Canal Banks/ Canal Tops to MNRE. MNRE/SECI will analyze/ scrutinize the application/ proposal and if found appropriate, MNRE will sanction the project. Thereafter, SECI shall release the capital subsidy of upto Rs. 3cr./MW for Canal Top SPV projects and Rs. 1.5cr/MW for Canal Bank SPV Projects.

Central Financial Assistance

- Rs.3 crore/MW or 30% of the project cost, whichever is lower, for Canal Top SPV projects and Rs. 1.5 crore/MW or 30% of the project cost, whichever is lower, for Canal Bank SPV projects.
- CFA of upto Rs.225 crore for 100 MW (50 MW on Canal Tops and 50 MW on Canal Banks) to be disbursed over a period of maximum 2 years post sanctioning of the plants as under:
  - upto 40% on sanctioning of the projects.
  - 60% on successful commissioning of the projects.
- Service charge to SECI @1%: Rs.2.25 crore.

**(III) Scheme for setting up 300 MW of Grid connected Solar PV Power Projects by Defense Establishments under Ministry of Defense and Para Military Forces with viability Gap Funding under Batch-IV of Phase-II/III of JNNSM.**

The Scheme was launched on 07<sup>th</sup> January, 2015.

**Salient Features**

- i. A capacity of 300 MW will be set up in various Establishments of Ministry of Defence i.e. Establishments of Army, Navy, Air Force, Ordnance Factory Board, Defence Laboratories and Defence PSUs etc. Para Military Forces would also be covered under this scheme. Minimum size of the project shall be 1 MW.
- ii. Inter-Ministerial group has recommended NCEF Support of Rs. 750 Cr @ Rs. 2.5 Cr./MW with DCR content.
- iii. The projects under this Scheme will mandatorily use solar cells/modules which are made in India.
- iv. The aforesaid Establishments would identify locations for developing solar projects, anywhere in the country including border areas from time to time.
- v. The Defence organisations/Establishments will be free to own the power projects i.e. get a EPC contractor to build the project for them or get a developer who makes the investment and supplies power at a fixed tariff of Rs.5.50 per unit for 25 years (or Rs. 4.75 with AD). EPC has been recommended by MHA, Planning Commission and MoD)
- vi. The MoD or the Defence Organization would be free to follow their own procurement systems or develop detailed guidelines or procedures for tendering. Tendering for inviting solar project developers to bid for developing projects, would be done by the Defence Establishments themselves. They may also lay down guidelines to cover security aspects related to working in Defence/Paramilitary Establishments. They can also take services of SECI on a turnkey basis.
- vii. The solar project developers will be provided VGF based on the bid. The bidders will be selected on the basis of bids for minimum VGF requirement for the project with commitment to supply solar power at Rs. 5.50/KWh for 25 years. However, the upper limits of the VGF are as follows:

Category-I: Rs.2.5 Cr./MW for project capacity upto 5 MW or 30% of the project cost whichever is lower;

Category-II: Rs. 2 Cr./MW for project capacity greater than 5 MW upto 25 MW or 30% of the project cost whichever is lower; and

Category-III: Rs. 1.5 Cr./MW for project capacity greater than 25 MW or 30% of the project cost whichever is lower.

**(IV) Implementation of scheme of setting up 1000 MW of Grid- Connected Solar PV Power Projects by CPSUs with Viability Gap Funding under Batch-V of Phase-II of JNNSM.**

CPSUs and Government of India organisations participate in various Central/State Government Tenders, from time to time, for sale of solar power to State Utilities/ Discoms/ self-use/3<sup>rd</sup> party sale/merchant sale. Such CPSUs and Government of India organisations are eligible under the scheme. The Cabinet has approved the Scheme in its meeting held on 10<sup>th</sup> December, 2014. The Ministry has issued Administrative Approval on 16<sup>th</sup> January, 2015.

## **Salient Features**

- i. Grid-connected solar PV power projects of 1000 MW by CPSUs and Government of India organisations.
- ii. Period of Implementation: 2014-15 to 2016-17
- iii. VGF would be provided through Solar Energy Corporation of India (SECI) at a fixed rate of Rs.1 Cr/MW for projects where domestically produced Cells and Modules are used, and Rs.50 lakh/MW would be provided in cases where domestically produced modules are used.
- iv. Alternatively, VGF can also be released directly to Domestic Manufacturers through SECI instead of releasing the VGF to CPSUs/Government of India Organizations if so, required. This will be released to the manufacturer who will be supplying cells and modules to the CPSU/Government of India Organizations for that particular power plant based on order placed by the CPSU/Government of India Organization/their EPC contractor. The release will be made after the project is commissioned and the CPSU/Government of India Organizations makes a request for release of VGF to SECI.
- v. Inter-Ministerial group has recommended NCEF Support of Rs. 1000 Cr.
- vi. The CPSUs may also sign Power Purchase Agreements (PPAs)/ Power Sale Agreements (PSAs) with State Utilities/ Discoms at tariff determined by Central Electricity Regulatory Commission (CERC) or State Regulators or may develop projects for their own use or for sale of power to a third party at mutually negotiated rates.

### **(V) Implementation of Scheme for Setting up of 15000 MW of Grid connected Solar PV Power Projects under Batch II of Phase II of National Solar Mission (by NTPC/NVVN)**

The Cabinet has approved the Implementation of Scheme for setting up of 15,000 MW of Grid-connected Solar PV Power projects under National Solar Mission through NTPC/ NVVN in three tranches as follows :

<b>Tranche-I</b>	<b>:</b>	3,000 MW: 2014-15 to 2016-17
<b>Tranche-II</b>	<b>:</b>	5,000 MW: 2015-16 to 2017-18
<b>Tranche-III</b>	<b>:</b>	7,000 MW: 2016-17 to 2018-19

In Tranche-I, which will be Batch-II of Phase-II of National Solar Mission, 3000 MW capacity of solar PV power plants will be based on bundling of solar power (3000 MW) with unallocated thermal power (1500 MW) in the ratio of 2:1 (in MW terms), for which the required 1500 MW unallocated thermal power has been made available by the Ministry of Power.

### **(VI) Setting up of 2000 MW Grid connected solar power with Viability Gap Funding through Solar Energy Corporation of India (SECI).**

The scheme envisages setting up of 2000 MW Solar PV Projects by Solar Project Developers (SPDs) on “Build, Own, Operate” basis. The Solar Projects of 2000 MW Capacity under the State Specific VGF Scheme will be set up in the Solar Parks of various states, to be developed through coordinated efforts of Central and State Agencies. As implementation of solar parks have begun recently, it could be possible that Solar Parks in some of the States do not become available soon. For such States, Solar Projects would be allowed to be located outside solar parks with land being provided either by the State Government, or arranged by the Solar Power Developers (SPDs). A Viability Gap

Funding (VGF) shall be given to the selected SPDs to enable them to supply power to SECI at a pre-fixed tariff. The Project developer will be provided a viability gap funding based on his bid. The upper limit for VGF is kept at Rs.1.0 Crore/MW for open category (Rs. 1.31 Crore/MW for projects in DCR category).

Selection of the Projects will be through competitive bidding based on the VGF requirement with the provision of reduction in tariff in case of negative VGF sought by bidders. Out of total capacity of 2000 MW, a capacity of 250 MW will be earmarked for bidding with Domestic Content Requirement (DCR).

The tariff payable to the Project developer is fixed at Rs. 5.43/ kWh for the initial year and then escalated annually by Rs. 0.05/ kWh for next 20 years, resulting in the maximum allowable tariff of Rs 6.43 / kWh at the end of 21st year. The tariff would thereafter, remain fixed at Rs. 6.43/kWh. The levelized tariff for the term of the Power Purchase Agreement thus becomes Rs. 5.79/kWh.

**ANNEXURE-II REFERRED TO IN REPLY TO PART (b) OF THE LOK SABHA  
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**DETAILS OF TARGETS/ACHIEVEMENTS UNDER THE SCHEMES**

<b>S.No</b>	<b>Scheme</b>	<b>Targets/ Achievements</b>
1	Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects.	20,000 MW/18,148 MW capacity Solar parks sanctioned and CFA of Rs. 383.93 crore released to States so far. Details are at annexure-IIA.
2	Scheme for Development of Solar PV Power Plants on Canal Banks/ Canal Tops.	100 MW (50 MW Canal Bank and 50 MW Canal Top)/ 100 MW. CFA of Rs. 69 crore released to SECI for onward disbursal to Project Implementing Agencies. State-wise details are at Annexure-II B.
3	Scheme for setting up 300 MW of Grid connected Solar PV Power Projects by Defense Establishments under Ministry of Defense and Para Military Forces with viability Gap Funding under Batch-IV of Phase-II/III of JNNSM.	300 MW/ 185 mw allocated with details as under:- Ordnance Factory Board :150 MW BSF :10 MW Bharat Dynamics Ltd. : 25 MW Under Consideration by M/o Defence : 281 MW
4	Implementation of scheme of setting up 1000 MW of Grid- Connected Solar PV Power Projects by CPSUs with Viability Gap Funding under Batch-V of Phase-II of JNNSM.	1000 MW/ 1112.39 MW capacity allocated to different CPSUs with details at Annexure-II C.
5	Implementation of Scheme for Setting up of 15000 MW of Grid connected Solar PV Power Projects under Batch II of Phase II of National Solar Mission (by NTPC/NVVN)	15,000 MW/ 2870 MW capacity allotted and 2750 MW capacity tendered.
6	Setting up of 2000 MW Grid connected solar power with Viability Gap Funding through Solar Energy Corporation of India (SECI).	2000 MW/ 650 MW

**ANNEXURE-II A**

**ANNEXURE-II A REFERRED TO IN REPLY TO PART (b) OF THE LOK SABHA  
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**State-wise details of funds released to Solar Energy Corporation India (SECI) under the Solar Park**

<b>Scheme</b>		
<b>Sl. No.</b>	<b>State</b>	<b>CFA released (Rs. in Crore)</b>
1	Gujarat	2.75
2	Andhra Pradesh	225.50
3	Uttar Pradesh	6.25
4	Rajasthan	81.95
5	Madhya Pradesh	39.25
6	Karnataka	20.25
7	Telangana	2.75
8	Meghalaya	0.25
9	Kerala	0.25
10	Arunachal Pradesh	0.25
11	Nagaland	0.25
12	West Bengal	0.25
13	A&N Islands	0.25
14	Fund Handling charges to SECI (Rs. in Cr.)	3.732
<b>Total</b>		<b>383.93</b>



**ANNEXURE-II B REFERRED TO IN REPLY TO PART (b) OF THE LOK SABHA  
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**Details of funds released to Implementing Agencies of States under Pilot-cum-demonstration project  
for development of grid connected solar PV power plants on Canal Banks and Canal Tops**

Sl. No.	State	Implementing Agency in the State	Capacity for which in-principle approval has been given (MW)	1st installment eligible @40% of CFA, released to SECI for onward disbursal to the State Implementing Agency (Crore Rs.)
1	Andhra Pradesh	New and Renewable Energy Development Corporation of Andhra Pradesh (NREDCAP)	1 MW canal-top	1.2
		Andhra Pradesh Power Generation Corporation Limited (APGENCO)	5 MW canal-bank	3.0
2	Gujarat	SardarSarovar Narmada Nigam Limited (SSNNL)	10 MW canal-top	0.0
		SardarSarovar Narmada Nigam Limited (SSNNL)	15 MW canal-bank	0.0
3	Karnataka	Krishna Bhagya Jal Nigam Limited (KBJNL)	10 MW canal-top	12.0
4	Kerala	Kerala State Electricity Board Limited (KSEB)	3 MW canal-top	3.6
5	Punjab	Punjab Energy Development Agency (PEDA)	20 MW canal-top	24.0
6	Uttarakhand	UREDA / Uttarakhand Jal Vidyut Nigam Limited	20 MW canal-bank	12.0
7	Uttar Pradesh	Uttar Pradesh Irrigation Department/ UPNEDA	6 MW canal-top (3.5 MW + 2.5 MW)	7.20
8	West Bengal	West Bengal State Electricity Development Corporation Limited (WBSEDCL)	10 MW canal-bank	6.0
	<b>Total</b>		<b>50 MW canal-top &amp; 50 MW canal-bank</b>	<b>69.0</b>

**ANNEXURE-II C**

**ANNEXURE-II C REFERRED TO IN REPLY TO PART (b) OF THE LOK SABHA  
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**Schemes/Self use/3rd Party sale/Merchant sale with Viability Gap Funding (VGF) under Phase-II of JNNSM.**

Sl. No.	Name of CPSU/Orgn.	Capacity allocated (MW)
1.	Indian Railways	200.00
2.	NTPC Ltd.	250.00
3.	Khadi & Village Industries	10.00
4.	North Eastern Electric Power Corporation Ltd. (NEEPCO), Shilong	100.00
5.	National Seeds Corporation Ltd. (NSCL), New Delhi	25.00
6.	Bharat Heavy Electricals Ltd., New Delhi	6.50
7.	Solar Energy Corporation of India (SECI) <b>5 MW</b>	} 105.00
8.	Coal India Ltd. <b>100 MW</b>	
9.	Visakhapatnam Port Trust (VPT), Visakhapatnam	15.00
10.	NHPC Limited, Faridabad	150.00
11.	Rashtriya Ispat Nigam Ltd., (Visakhapatnam Steel Plant)	5.00
12.	Neyveli Lignite Corporation of India Ltd.	155.00
13.	<b>Ministries/Departments</b>	*83.00
14.	<b>GAIL (India) Ltd.</b>	7.89
<b>Total</b>		<b>1112.39</b>

**\*Note:** 83 MW has been kept reserved for Ministries/Departments @ 1 MW each. Out of this, MNRE has so far conveyed 'in principle' approval @ 1 MW each to (i) Scooters India Ltd; (ii) Sambhar Salts Ltd.; (iii) National Seeds Corporation Ltd and (iv) Jawaharlal Nehru Aluminium Research Development and Design Center (JNARDDC).