

Solar energy generation in Twelfth and Thirteenth Plan periods

1061. SHRI HARSHVARDHAN SINGH DUNGARPUR: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) the target set and achievement made in the field of solar energy generation during the Twelfth Five Year Plan period;
- (b) the target fixed for the Thirteenth Five Year Plan and the steps being taken by Government for achieving the target during the Plan;
- (c) the funds released and spent by each State during the Twelfth Five Year Plan; and
- (d) the expenditure likely to be incurred to promote and popularize the solar energy in the country during the current financial year?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI RAJ KUMAR SINGH): (a) No specific target for Solar Energy generation was set for the Twelfth Five Year Plan. The National Solar Mission was launched in 2010 with a target of installing solar power capacity of 20GW by 2022. This target was further enhanced in 2015 to 100 GW by 2022. A cumulative capacity of 26.03 GW has been installed so far out of which 11.26 GW was installed during the Twelfth Five Year Plan.

(b) The Government has set a target of installing 100 GW of solar power capacity by 2022. The Union Government has launched various schemes, as detailed below, for development and deployment of solar energy in the country and achieving the target set:—

- (i) Solar Park Scheme for setting up of over 50 Solar Parks and Ultra Mega Solar Power Projects targeting over 40,000 MW of solar power projects.
- (ii) Scheme for setting up 1000 MW of Grid-Connected Solar PV Power Projects by the Central Public Sector Undertakings (CPSUs) and the Government of India organisations with Viability Gap Funding (VGF).
- (iii) Scheme for setting up 300 MW of Grid-Connected Solar PV Power Projects by Defence Establishments and Para Military Forces with VGF.
- (iv) Pilot-cum-demonstration projects for development of grid connected Solar PV power plants on canal banks and canal tops.

- (v) Bundling Scheme - 15000 MW Grid-Connected Solar PV power plants through NTPC Ltd./ NVVN.
 - (vi) VGF Scheme for setting up of 2000 MW of Grid-Connected Solar PV Power Projects through SECI.
 - (vii) VGF Scheme for setting up of 5000 MW of Grid-Connected Solar PV Power Projects through SECI.
 - (viii) Installation of Grid-Connected Solar Rooftop Power Plants.
 - (ix) Off-Grid Solar PV Scheme.
- (c) ₹ 8186.07 crore were released under solar energy programmes during the Twelfth Five Year Plan. The State-wise details of funds released under few schemes are given in the Statement (See below).
- (d) A total fund of ₹ 2929.75 crore has been earmarked for grid-connected and off-grid solar energy programmes during the current year 2018-19.

Statement*State-wise details of funds released during the Twelfth Five Year Plan*

Details of State-wise, year-wise CFA released by SECI to project implementing agencies under pilot-cum-demonstration project for development of grid connected Solar PV power plants on canal banks and canal tops

State	Year*	
	2015-16	2016-17
Andhra Pradesh	₹ 20,820,000	₹ 18,180,000
Gujarat	₹ 105,000,000	₹ 103,152,000
Karnataka	₹ 48,192,000	₹ 33,899,800
Kerala	₹ 15,000,000	₹ 12,112,470
Punjab	₹ 120,000,000	₹ 30,000,000
Uttar Pradesh	₹ 28,272,000	
Uttarakhand	₹ 63,000,000	₹ 63,000,000
West Bengal	₹ 30,000,000	₹ 48,000,000
TOTAL	₹ 430,284,000	₹ 308,344,270

* Scheme was launched in December, 2014.

B. Year-wise CFA released by SECI to SPPD/STU/CTU under Solar Park Schemes:

(₹ in lakh)

Sl. No.	State	Solar Park	Year*		
			2014-15	2015-16	2016-17
1	2	3	4	5	6
1.	Andhra Pradesh	Ananthapuramu-I Solar Park	7410.34	6104.89	9.77
2.		Kurnool Solar Park	4858.50	4141.50	25.00
3.		Kadapa Solar Park	0.00	0.00	625.00
4.		Ananthapuramu-II Solar Park	0.00	0.00	325.00
5.		Hybrid Solar Wind Park	0.00	0.00	0.00
6.		Ext Trans PGCIL-AP	0.00	0.00	0.00
7.		Ext Trans APTRANCO-AP II	0.00	0.00	0.00
8.		Ext Trans APTRANCO-Kurnool	0.00	0.00	0.00
TOTAL			12268.84	10246.39	984.77
9.	Arunachal Pradesh	Lohit Solar Park	0.00	19.65	0.00
10.		Assam	Solar Park in Assam	0.00	0.00
11.	Chhattisgarh	Rajnandgaoun Solar Park	0.00	0.00	15.00
12.	Gujarat	Radhnesada Solar Park	0.00	3311.35	0.00
13.		Harsad Solar Park	0.00	0.00	0.00
14.		Dholera Solar Park	0.00	0.00	0.00
15.		Ext Trans PGCIL-Radhnesada	0.00	0.00	0.00
TOTAL			0.00	3331.00	15.00
16.	Haryana	Solar Park in Haryana	0.00	0.00	0.00
17.	Himachal Pradesh	Solar Park in Himachal Pradesh	0.00	0.00	0.00
18.	Jammu and Kashmir	Solar Park in J&K	0.00	0.00	0.00

1	2	3	4	5	6
19.	Karnataka	Pavagada Solar Park	0.00	10000.00	7980.00
20.		Ext Trans PGCIL-Pavagada	0.00	0.00	0.00
TOTAL			0.00	10,000.00	7980.00
21.	Kerala	Kasargod Solar Park	0.00	0.00	200.00
22.	Madhya Pradesh	Rewa Solar Park	0.00	3750.00	0.00
23.		Neemuch-Mandsaur Solar Park	0.00	0.00	25.00
24.		Agar Solar Park	0.00	0.00	0.00
25.		Shajapur Solar Park	0.00	0.00	0.00
26.		Morena (Chambal) Solar Park	0.00	0.00	0.00
27.		Ext Trans PGCIL-Rewa	0.00	0.00	0.00
TOTAL			0.00	3750.00	25.00
28.	Maharashtra	Sai Guru Solar Park (Pragat)	0.00	0.00	435.00
29.		Patoda Solar Park (Paramount)	0.00	0.00	25.00
30.		Dondaicha Solar Park	0.00	0.00	25.00
31.		Latur Solar Park	0.00	0.00	0.00
32.		Washim solar park	0.00	0.00	0.00
33.		Yavatmal Solar Park	0.00	0.00	0.00
34.		Kacharala solar park	0.00	0.00	0.00
TOTAL			0.00	0.00	485.00
35.	Manipur	Bukpi Solar Park	0.00	0.00	0.00
36.	Meghalaya	Solar park in Meghalaya	0.00	3.07	0.00
37.	Mizoram	Vankal Solar Park	0.00	0.00	0.00
38.	Nagaland	Solar Park in Nagaland	0.00	0.00	0.00
39.	Odisha	Solar Park in Odisha	0.00	0.00	0.00

1	2	3	4	5	6
40.		Solar Park by NHPC	0.00	0.00	0.00
	TOTAL		0.00	3.07	0.00
41.	Rajasthan	Bhadla-II Solar Park	3319.00	2801.00	0.00
42.		Bhadla-III Solar Park	0.00	4575.00	450.00
43.		Bhadla-IV Solar Park	0.00	0.00	1525.00
44.		Phalodi-Pokaran Solar Park	0.00	0.00	25.00
45.		Fatehgarh Phase-1B Solar Park	0.00	0.00	25.00
46.		Nokh Solar Park	0.00	0.00	0.00
47.		RVPN- Bh-II, Bh-III, Bh-IV	0.00	0.00	0.00
48.		PGCIL- Bh-II, Bh-III, Bh-IV, PP, F 1B	0.00	0.00	0.00
	TOTAL		3319.00	7376.00	2025.00
49.	Tamil Nadu	Solar Park in Tamil Nadu	0.00	0.00	0.00
50.	Tamil Nadu	Kadaladi Solar Park	0.00	0.00	0.00
51.	Telangana	Gattu Solar Park	0.00	25.00	0.00
52.	Uttar Pradesh	Solar Park in UP	0.00	2081.80	0.00
53.		UP Kanpur Dehat Solar Park	0.00	0.00	0.00
54.		UP Jalaun Solar Park	0.00	0.00	0.00
55.		UP Kanpur Nagar Solar Park	0.00	0.00	0.00
56.		Ext Trans UPPTCL	0.00	0.00	0.00
	TOTAL		0.00	2106.80	0.00
57.	Uttarakhand	Solar Park in Uttarakhand	0.00	0.00	8.25
58.	West Bengal	Solar Park in West Bengal	0.00	0.00	25.00
	TOTAL		15587.84	36813.26	11748.02

* Scheme was launched in December, 2014.

C. Details of State-wise, year-wise, VGF released by SECI to CPSUs/GoI organisations under Central Public Sector Undertakings (CPSUs) scheme

State	Year*	
	2015-16	2016-17
Andhra Pradesh	₹ 1,250,000,000	₹ 1,275,000,000
Madhya Pradesh		₹ 825,000,000
Rajasthan		₹ 1,800,000,000
Tamil Nadu		₹ 25,000,000
Telangana		₹ 7,500,000
TOTAL	₹ 1,250,000,000	₹ 3,935,000,000

* Scheme was launched in January, 2015.

D. Details of funds released by MNRE to NWN payment security scheme for grid-connected solar power projects under phase-I of NSM

Sl. No.	Financial Year	Amount released (₹ in crore)	Towards
1.	2012-13	32.85	3rd installment
2.	2013-14	23.47	4th installment
3.	2014-15	0.00	-
4.	2015-16	58.32	5th installment
5.	2016-17	126.39	6th installment
	TOTAL	241.03	

Note : State-wise break-up is not possible as the funds under the scheme are being released to NTPC Vidyut Vyapar Nigam Limited (NVVN) for implementing Payment Security Mechanism for solar power plants being implemented through NVVN under Phase-I of National Solar Mission.

E. CFA released by MNRE to SECI under Defence Scheme:

Sl. No.	Year*	Expenditure incurred (₹ in crores)
1.	2014-15	Nil
2.	2015-16	3.78
3.	2016-17	24.35

* Scheme was launched in December, 2014.

F. Funds released by MNRE to implementing agencies under off-grid programmes

(₹ in lakhs)

Sl. No.	States/UTs	2012-13	2013-14	2014-15	2015-16	2016-17
1.	Andhra Pradesh	134	29	3205	10368	3953
2.	Arunachal Pradesh	582	428	261	57	694
3.	Assam	223	304	57	439	1358
4.	Bihar	20	350	648	1541	0
5.	Chhattisgarh	5282	1115	3014	3327	6549
6.	Delhi	0	0	102	124	0
7.	Gujarat	0	7	1689	1797	2608
8.	Haryana	226	0	624	1922	0
9.	Himachal Pradesh	191	2098	1628	4100	2650
10.	Jammu and Kashmir	3361	3697	1915	4395	2466
11.	Jharkhand	270	0	651	1551	0
12.	Karnataka	114	840	834	66	3901
13.	Kerala	855	0	2370	965	2359
14.	Lakshadweep	0	645	0	375	0
15.	Madhya Pradesh	449	0	1570	41	66
16.	Maharashtra	28	0	3431	2442	0
17.	Manipur	1483	369	147	1160	442
18.	Meghalaya	0	502	573	312	1354
19.	Mizoram	179	394	702	753	1354
20.	Nagaland	1036	425	350	555'	1501
21.	Odisha	0	0	1294	195	1700
22.	Puducherry	0	0	26	0	0
23.	Punjab	97	203	1024	824	0
24.	Rajasthan	3890	1248	11489	20063	6711
25.	Sikkim	262	820	141	28	282

Sl. No.	States/UTs	2012-13	2013-14	2014-15	2015-16	2016-17
26.	Tamil Nadu	128	2029	2939	8262	207
27.	Telangana	0	0	2232	1502	0
28.	Tripura	402	0	113	347	1372
29.	Uttarakhand	123	4057	115	2510	373
30.	Uttar Pradesh	2675	17	4481	3851	1896
31.	West Bengal	382	0	167	34	0
32.	Chandigarh	0	0	276	0	0
33.	Others (CEL, REIL, NABARD, Regional Rural Banks, NGOs, etc.) and other Channel Partners	17526	13059	13411	26515	11266
TOTAL		39918	32637	61478	100422	55065

G. CFA released by MNRE to implementing agencies under roof-top programmes

(₹ in crore)

Sl. No.	States/UTs	2012-13	2013-14	2014-15	2015-16	2016-17
1.	Andhra Pradesh	0	0.00	2.41	3.87	9.150
2.	Assam	0	0.00	0.00	0.00	38.4615
3.	Andaman and Nicobar	0	0.00	0.00	0.00	0.525
4.	Chhattisgarh	0	0.00	0.00	3.60	5.495
5.	Delhi	0	0.00	0.00	5.76	19.467
6.	Gujarat	0	1.03	0.00	4.50	17.43
7.	Goa	0	0.00	0.00	1.44	0.00
8.	Haryana	0	0.00	0.00	3.60	16.2225
9.	Jammu and Kashmir	0	0.00	0.00	0.00	3.675
10.	Jharkhand	0	0.00	0.00	0.00	12.7125
11.	Kerala	0	0.00	0.00	4.68	4.05
12.	Karnataka	0	0.00	0.00	0.00	2.52
13.	Lakshadweep	0	0.00	0.00	0.00	0.455

Sl. No.	States/UTs	2012-13	2013-14	2014-15	2015-16	2016-17
14.	Madhya Pradesh	0	0.00	0.00	1.24	31.95588
15.	Maharashtra	0	0.00	0.00	0.00	23.175
16.	Odisha	0	0.00	0.00	2.88	0.86
17.	Puducherry	0	0.00	0.00	0.00	1.1045000
18.	Punjab	0	0.00	0.00	9.22	4.50
19.	Rajasthan	0	0.00	0.00	4.26	14.79
20.	Tamil Nadu	0	0.51	0.00	8.23	69.67
21.	Telangana	0	0.00	0.00	3.78	20.12
22.	Tripura	0	0.00	0.00	0.00	0.00
23.	Uttarakhand	0	0.00	0.01	22.13	25.973
24.	Uttar Pradesh	0	0.00	0.00	5.86	1.16
25.	West Bengal	0	0.00	0.00	3.09	0.17
26.	Chandigarh	0	0.00	1.26	9.09	6.72
27.	Manipur	0	0.00	0.00	0.91	8.11
28.	Himachal Pradesh	0	0.00	0.00	0.00	5.4315
SUB TOTAL		0.00	1.54	3.68	98.14	343.89
29.	PSU/Govt. Department	0.00	0.00	0.00	18.52	74.7439
30.	SECI	42.68	0.00	0.00	128.00	250.00
31.	NISE	0.00	0.00	0.00	2.62	0.00
32.	TERI	0.00	0.00	0.00	0.09	0.00
33.	Others (NFDC)	0.00	0.00	0.00	0.017	9.380
TOTAL		42.68	1.54	3.68	247.39	678.01

Central and State projects in renewable energy sector

1062. SHRI RITABRATA BANERJEE: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the details of Central and State Government projects in the renewable energy sector and the companies which have been given the projects, in the last three years;