

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 4823
TO BE ANSWERED ON 30.03.2017

OVERALL DEVELOPMENT OF RENEWABLE ENERGY SOURCES

4823. SHRI BHARATHI MOHAN R.K.:

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

- (a) whether the Government has taken new initiatives and initiated new policies for the overall development and proper harnessing of renewable energy sources in the country from both on land and sea;
- (b) if so, the details thereof and the quantum of power generated through the renewable energy sources during each of the last three years and the current year, State-wise;
- (c) whether the Government has chalked out any new innovative strategy and scientific methods for harnessing of renewable energy in the country; and
- (d) if so, the details thereof, State-wise?

ANSWER

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

(a) & (b): The new initiatives and policies undertaken by Government for the overall development and proper harnessing of renewable energy sources in the country include:

- incentives in the forms of generation based incentives/subsidies, fiscal incentives such as accelerated depreciation, concessional customs duty, excise duty exemptions, income tax holiday for 10 years and viability gap funding from NCEF.
- amendments in the Tariff Policy for strong enforcement of Renewable Purchase Obligation (RPO) and for providing Renewable Generation Obligation (RGO);
- setting up of exclusive solar parks;
- development of power transmission network through Green Energy Corridor project;
- repowering policy in order to optimally utilize of the wind energy resources.
- identification of large government complexes/ buildings for rooftop solar projects;
- raising tax free solar bonds;
- making roof top solar a part of housing loan by banks/NHB;

- incorporating measures in Integrated Power Development Scheme (IPDS) for encouraging distribution companies and making net-metering compulsory
- raising funds from bilateral and international donors as also from the Green Climate Fund to achieve the target.
- creation of Surya Mitras for installation and maintenance of the Solar Projects.
- Scheduling and forecasting in case of inter-state transmission of solar and wind power
- National Offshore Wind Energy Policy notified for the development of offshore wind energy in the Indian Exclusive Economic Zone (EEZ).

The State-wise quantum of power generated through various renewable energy sources during each of the last three years and the current year is given in **Annexure-I**.

(c) & (d): Yes, Madam. The MNRE has been supporting Research and Development (R&D) in various R&D/academic institutions, NGOs, industries, etc. in the field of solar, wind, biogas, biofuel, Hydrogen, Fuel Cells, etc. for technology development and demonstration leading to commercialization. A comprehensive policy and guidelines for research, development and demonstration (RD&D) for new and renewable energy sector is in place. It has a provision for financial assistance of up to 50% of the project cost for the projects that involve partnership with industry / civil society. Proposals from academic institutions, Government/non-profit research organizations and NGOs, the MNRE provide upto 100% funding. MNRE sanctioned 112 R&D Projects to various R&D/Academic institutions, industries, etc. in renewable energy sector during the 12th Plan Period in the country. These projects were sanctioned to IITs, Engineering Colleges, Universities, CSIR labs, industries etc. in different states of the country.

**REFERRED TO IN REPLY TO LOK SABHA UNSTARRED QUESTION NO. 4823 Part (b) FOR
ANSWER ON 30.03.2017**

**State-wise and Source-wise power generation from various renewable energy sources during
the last three years (2013-14 to 2015-16) and current year.**

(Million Units)						
S. No	State	Wind	Solar	Small Hydel	Bio-Power	Total
2013-14						
1.	DELHI	0	3.285	0	100.426	103.711
2.	HARYANA	0	9.39	238.6	131.39	379.38
3.	HP	0	0	1181.01	0	1181.01
4.	PUNJAB	0	51.689	227.776	615.635	895.101
5.	RAJASTHAN	3695.666	1052.044	8.268	248.099	5004.076
6.	UTTAR PRADESH	0	14.962	25.918	2822.518	2863.398
7.	UTTARAKHAND	0	5.548	263.448	89.617	358.613
8.	NTPC DADRI	0	6.088	0	0	6.088
9.	NTPC FARIDABAD	0	0.006	0	0	0.006
10.	NTPC UNCHAHAR	0	0.002	0	0	0.002
11.	CHHATTISGARH	0	11.417	10.392	1207.362	1229.171
12.	GUJARAT	5288.557	1369.415	31.599	24.148	6713.719
13.	MADHYA PRADESH	477.4	247.05	290.3	36.73	1051.48
14.	MAHARASHTRA	5727.352	257.424	662.592	2121.57	8768.938
15.	NTPC RAJGARH	0	0.004	0	0	0.004
16.	ANDHRA PRADESH	817.85	207.11	161.98	595.92	1782.86
17.	KARNATAKA	4547.916	38.253	1808.975	2667.506	9062.65
18.	KERALA	68.071	0	554.609	34.886	657.566
19.	TAMIL NADU	10641.985	38.873	119.188	1843.426	12643.472
20.	NTPC RAMAGUNDAM	0	2.451	0	0	2.451
21.	ANDAMAN & NICOBAR	0	0	0	0	0
22.	BIHAR	0	0	0	0	0
23.	JHARKHAND	0	0	0	0	0
24.	ODISHA	0	34.273	336.559	0	370.832
25.	DVC	0	0	101.985	0	101.985
26.	NTPC ANDAMAN	0	6.504	0	0	6.504
27.	NTPC TALCHER	0	0.001	0	0	0.001
28.	ARUNACHAL PRADESH	0	0	0	0	0
29.	MEGHALAYA	0	0	0	0	0
30.	MIZORAM	0	0	41.477	0	41.477
	Total	31264.797	3353.335	6064.676	12539.233	53224.496
2014-15						
1.	CHANDIGARH	0	2.23	0	0	2.23
2.	DELHI	0	3.18	0	113.44	116.63
3.	HARYANA	0	10.36	280.96	179.36	470.69
4.	HP	0	0	1685.08	0	1685.08
5.	J & K	0	0	313.23	0	313.23
6.	PUNJAB	0	129.89	543.53	485.87	1159.29
7.	RAJASTHAN	4053.85	1259.19	5.3	278.24	5596.57
8.	UTTAR PRADESH	0	20.13	30.3	3090.27	3140.7

(Million Units)						
S. No	State	Wind	Solar	Small Hydel	Bio-Power	Total
9.	UTTARAKHAND	0	11.63	565.25	87.5	664.38
10.	NTPC	0	22.9	0	0	22.9
11.	OIL INDIA LTD	117.78	9.14	0	0	126.93
12.	CHHATTISGARH	0	13.54	8.4	1044.35	1066.29
13.	GOA/NTPC RAJGARH	0	62.94	0	0	62.94
14.	GUJARAT	5660.09	1474.56	47.13	40.48	7222.27
15.	MADHYA PRADESH	592.25	562.29	196.71	76.26	1427.51
16.	MAHARASHTRA	6804.8	349.32	275.82	2853.99	10283.93
17.	DADRA AND NAGAR HAVELI	0	0.03	0	0	0.03
18.	DAMAN & DIU	0	0.15	0	0	0.15
19.	ANDHRA PRADESH	1675.82	159.77	274.61	600.85	2711.06
20.	TELANGANA	0	138.12	60.43	604.31	802.86
21.	KARNATAKA	4658.1	100.39	1845.75	3090.66	9694.9
22.	KERALA	58.4	0	570.53	0.71	629.64
23.	PUDUCHERRY/NTPS RAMA	0	15.62	0	0	15.62
24.	TAMIL NADU	10147.06	158.75	226.81	1369.79	11902.39
25.	LAKSHADWEEP	0	5.13	0	40.96	46.09
26.	ANDAMAN & NICOBAR	0	0	0.47	0	0.47
27.	BIHAR	0	0	29.01	180.11	209.13
28.	JHARKHAND	0	8.32	0	0	8.32
29.	ODISHA	0	44.94	284.88	0	329.82
30.	SIKKIM	0	0	20.88	0	20.88
31.	WEST BENGAL	0.16	7.07	325.43	1220.97	1553.63
32.	DAMODAR VALLEY CORPORATION	0	0	146.86	0	146.86
33.	NTPC ANDMAN+TALCHAR	0	18.79	0	0	18.79
34.	ARUNACHAL PRADESH	0	0	51.94	0	51.94
35.	ASSAM	0	9.65	54.87	0	64.52
36.	MANIPUR	0	0	0	0	0
37.	MEGHALAYA	0	0	66.94	0	66.94
38.	MIZORAM	0	0	34.86	0	34.86
39.	NAGALAND	0	0	84.14	0	84.14
40.	TRIPURA	0	0	29.37	0	29.37
41.	NEEPCO	0	0.98	0	0	0.98
	TOTAL	33768.3	4599.02	8059.5	15358.11	61784.93
2015-16						
1	CHANDIGARH	0	3.4	0	0	3.4
2	DELHI	0	4.11	0	124.87	128.97
3	HARYANA	0	114.96	992.65	235.55	1343.15
4	HP	0	0	1921.77	0	1921.77
5	J & K	0	0	304.79	0	304.79
6	PUNJAB	0	380.57	490.08	603.54	1474.2
7	RAJASTHAN	4583.59	1766.1	5.06	245.49	6600.24
8	UTTAR PRADESH	0	89.75	29.73	3082.01	3201.49
9	UTTARAKHAND	0	5.87	605.69	91.86	703.42
10	NTPC (DADRI/FARIDABAD/U NCHAHAR)	0	42.41	0	0	42.41

(Million Units)						
S. No	State	Wind	Solar	Small Hydel	Bio-Power	Total
11	OIL INDIA LTD	183.77	9.9	0	0	193.67
12	CHHATTISGARH	0	52.7	30.41	1119.32	1202.42
13	NTPC RAJGARH	0	81	0	0	81
14	GUJARAT	6446.58	1497.6	36.27	23.28	8003.73
15	MADHYA PRADESH	1558.43	1105.28	118.54	128.17	2910.42
16	MAHARASHTRA	6121.34	638.76	562.77	3433.71	10756.58
17	DADRA & NAGAR HAVELI	0	0.5	0	0	0.5
18	DAMAN & DIU	0	4.25	0	0	4.25
19	ANDHRA PRADESH	2013.04	282.67	103.1	707.8	3106.61
20	TELANGANA	0	402.51	48.69	576.7	1027.9
21	KARNATAKA	4797.95	187.69	1483.48	3591.92	10061.03
22	KERALA	51.45	7.38	486.99	72.96	618.78
23	PUDUCHERRY/ NTPC (RAMAGUNDEM)	0	16.02	0	0	16.02
24	TAMIL NADU	7273.23	507.18	214.02	1337.05	9331.47
25	LAKSHADWEEP	0	1.02	0	0	1.02
26	ANDAMAN & NICOBAR	0	6.26	12.46	0	18.72
27	BIHAR	0	6.39	48.69	110.02	165.11
28	JHARKHAND	0	19.77	0	0	19.77
29	ODISHA	0	150.73	263.24	20.48	434.45
30	SIKKIM	0	0	41.93	0	41.93
31	WEST BENGAL	0	6.28	157.57	1444.3	1608.15
32	DVC	0	0	118.26	0	118.26
33	NTPC ANDMAN/ TALCHER	0	18.91	0	0	18.91
34	ARUNACHAL PRADESH	0	0.22	18.22	0	18.44
35	ASSAM	0	31.6	59.34	0	90.94
36	MANIPUR	0	0	0	0	0
37	MEGHALAYA	0	0	65.96	0	65.96
38	MIZORAM	0	0	27.62	0	27.62
39	NAGALAND	0	0	88.73	0	88.73
40	TRIPURA	0	0	18.47	0	18.47
41	NEEPCO	0	6.15	0	0	6.15
	Total	33029.4	7447.92	8354.51	16949.03	65780.9
2016-17 (April 2016 to January 2017)						
1	CHANDIGARH	0.00	12.37	0.00	0.00	12.37
2	DELHI	0.00	4.00	0.00	106.85	110.84
3	HARYANA	0.00	38.74	267.49	87.96	394.20
4	HP	0.00	0.00	1885.33	0.00	1885.33
5	J & K	0.00	0.49	278.24	0.00	278.73
6	PUNJAB	0.00	676.06	372.73	632.44	1681.23
7	RAJASTHAN	4857.24	1740.36	3.83	224.46	6825.89
8	UTTAR PRADESH	0.00	165.56	22.07	2257.69	2445.31
9	UTTARAKHAND	0.00	25.09	726.65	45.57	797.30
10	NTPC DADRI+FBD+ UNCHAHAAR+SINGRULI	0.00	38.06	0.00	0.00	38.06

(Million Units)						
S. No	State	Wind	Solar	Small Hydel	Bio-Power	Total
11	OIL INDIA LTD	173.57	19.09	0.00	0.00	192.67
12	CHHATTISGARH	0.00	97.66	39.65	1045.79	1183.10
13	NTPC RAJGARH	0.00	67.59	0.00	0.00	67.59
14	GUJARAT	6578.73	1409.65	20.26	8.16	8016.80
15	MADHYA PRADESH	3015.17	1090.63	189.76	98.80	4394.36
16	MAHARASHTRA	6950.36	464.55	444.34	2152.25	10011.49
17	DADRA AND NAGAR HAVELI	0.00	0.96	0.00	0.00	0.96
18	DAMAN & DIU	0.00	10.95	0.00	0.00	10.95
19	ANDHRA PRADESH	2769.94	1228.48	135.17	423.90	4557.49
20	TELANGANA	183.69	960.99	45.54	310.36	1500.59
21	KARNATAKA	5411.24	343.47	1491.55	1358.97	8605.23
22	KERALA	66.43	20.92	374.73	44.43	506.51
23	NTPC RAMAGUNDAM+ ANANTAPURAM	0.00	271.12	0.00	0.00	271.12
24	TAMIL NADU	11153.53	1477.88	89.80	1065.36	13786.57
25	LAKSHADWEEP	0.00	1.17	0.00	0.00	1.17
26	ANDAMAN & NICOBAR	0.00	5.26	12.17	0.00	17.43
27	BIHAR	0.00	83.01	20.05	0.00	190.52
28	JHARKHAND	0.00	31.63	0.00	87.46	31.63
29	ODISHA	0.00	166.37	218.15	0.00	442.36
30	SIKKIM	0.00	0.00	34.38	57.85	34.38
31	WEST BENGAL	0.00	11.71	92.84	0.00	1297.49
32	DVC	0.00	0.00	121.46	1192.94	121.46
33	NTPC ANDAMAN+TALCHER	0.00	16.48	0.00	0.00	16.48
34	ARUNACHAL PRADESH	0.00	0.13	13.40	0.00	13.53
35	ASSAM	0.00	79.85	78.73	0.00	158.58
36	MANIPUR	0.00	0.01	0.00	0.00	0.01
37	MEGHALAYA	0.00	0.00	54.75	0.00	54.75
38	MIZORAM	0.00	0.00	42.57	0.00	42.57
39	NAGALAND	0.00	0.00	86.41	0.00	86.41
40	TRIPURA	0.00	0.00	40.03	0.00	40.03
41	NEEPCO	0.00	5.65	0.00	0.00	5.65
	Total	41159.91	10565.90	7202.06	11201.23	70129.11

Source: Central Electricity Authority (CEA)

Note: Data as received from State Load Dispatch Centre (SLDC) of the respective states of the electricity department.