

LOK SABHA
UNSTARRED QUESTION NO.232
TO BE ANSWERED ON 25-02-2016

RENEWABLE POWER GENERATION

QUESTION	ANSWER										
ADV. JOICE GEORGE	SHRI PIYUSH GOYAL, MINISTER OF STATE FOR POWER, COAL & NEW AND RENEWABLE ENERGY (INDEPENDENT CHARGE)										
Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:											
(a) : the quantum of increase in renewable power generation in the country during the last three years, State/UT-wise separately from wind, small hydro power projects, bio-mass power and bagasse based cogeneration in sugar mills;	<p>(a) : The power generation from renewable energy sources during the last three years is given below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: right;">(Billion Units)</th> </tr> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Generation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2012-13</td> <td style="text-align: center;">47.61</td> </tr> <tr> <td style="text-align: center;">2013-14</td> <td style="text-align: center;">53.22</td> </tr> <tr> <td style="text-align: center;">2014-15</td> <td style="text-align: center;">61.78</td> </tr> </tbody> </table> <p style="text-align: center;">Source: CEA</p> <p>A statement giving the state-wise and source-wise, power generation from renewable energy sources during the last three years (2012-13 to 2014-15) is enclosed at <u>Annexure</u>.</p>	(Billion Units)		Year	Generation	2012-13	47.61	2013-14	53.22	2014-15	61.78
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Year	Generation										
2012-13	47.61										
2013-14	53.22										
2014-15	61.78										
(b) : whether the Government proposes to increase power generation in the sector; and	(b) & (c) : The Government has up-scaled the target of renewable energy capacity to 175 GW by the year 2022 which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro-power. Besides the ongoing policies and programmes of the Government in RE sector, several policy measures initiated recently by the Government to achieve this up-scaled target, inter-alia, include 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; identification of large government complexes/ buildings for rooftop projects; provision of roof top solar and 10 percent renewable energy as mandatory under Mission Statement and Guidelines for development of smart cities; amendments in building bye-laws for mandatory provision of roof top solar for new construction or										
(c) : if so, the details thereof along with the steps taken/being taken by the Government in this regard?											

higher FAR; infrastructure status for solar projects; raising tax free solar bonds; providing long tenor loans; 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 and raising funds from bilateral and international donors as also the Green Climate Fund to achieve the target.

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
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232. ADV. JOICE GEORGE:

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

- (a) the quantum of increase in renewable power generation in the country during the last three years, State/UT-wise separately from wind, small hydro power projects, bio-mass power and bagasse based cogeneration in sugar mills;
- (b) whether the Government proposes to increase power generation in the sector; and
- (c) if so, the details thereof along with the steps taken/being taken by the Government in this regard?

ANSWER

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

(a): The power generation from renewable energy sources during the last three years is given below:

(Billion Units)	
Year	Generation
2012-13	47.61
2013-14	53.22
2014-15	61.78

Source: CEA

A statement giving the state-wise and source-wise, power generation from renewable energy sources during the last three years (2012-13 to 2014-15) is enclosed at Annexure.

(b)&(c): The Government has up-scaled the target of renewable energy capacity to 175 GW by the year 2022 which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro-power. Besides the ongoing policies and programmes of the Government in RE sector, several policy measures initiated recently by the Government to achieve this up-scaled target, inter-alia, include 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; identification of large government complexes/ buildings for rooftop projects; provision of roof top solar and 10 percent renewable energy as mandatory under Mission Statement and Guidelines for development of smart cities; amendments in building bye-laws for mandatory provision of roof top solar for new construction or higher FAR; infrastructure status for solar projects; raising tax free solar bonds; providing long tenor loans; 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 and raising funds from bilateral and international donors as also the Green Climate Fund to achieve the target.

Annexure**Statement referred to in reply to part (a) of Lok Sabha Unstarred Question No. 232 for answer on 25.02.2016 regarding Renewable Power Generation****State-wise and Source-wise power generation from various renewable energy sources during the last three years (2012-13 to 2014-15)**

(Million Units)								
S. No	State	Wind	Solar	Biomass	Bagasse	Small Hydel	Others	Total
2012-13								
Northern Region								
1.	Chandigarh	0.000	0.000	0.000	0.000	0.000	0.000	0.00
2.	Delhi	0.000	3.677	0.000	0.000	0.000	81.621	85.299
3.	Haryana	0.000	0.000	0.000	0.000	48.492	0.000	48.492
4.	HP	0.000	0.000	0.000	0.000	0.000	0.000	0.00
5.	J & K	0.000	0.000	0.000	0.000	0.000	0.000	0.00
6.	Punjab	0.000	1.285	26.453	21.658	13.852	0.170	63.418
7.	Rajasthan	3177.801	266.339	261.046	0.000	18.016	0.000	3723.202
8.	Uttar Pradesh (Flue Gas)	0.000	14.106	115.891	2861.140	27.554	59.516	3078.207
9.	Uttarakhand	0.000	0.000	0.000	0.000	52.200	0.000	52.200
Western Region								
1.	Chhattisgarh	0.000	2.490	270.290	0.000	39.510	0.000	312.290
2.	Goa	0.000	0.000	0.000	0.000	0.000	0.000	0.00
3.	Gujarat	5854.456	1145.524	43.258	0.000	29.863	0.000	7073.101
4.	Madhya Pradesh	453.260	10.820	9.990	0.000	213.090	5.130	692.290
5.	Maharashtra	4666.120	28.607	215.118	1329.980	224.560	0.000	6464.385
Southern Region								
1.	Andhra Pradesh	481.120	108.840	413.940	273.690	104.770	65.720	1448.080
2.	Karnataka	4342.103	16.273	240.496	2527.307	1269.576	0.000	8395.755
3.	Kerala	59.005	0.000	0.000	27.592	295.941	11.287	393.825
4.	Puducherry	0.000	0.000	0.000	0.000	0.000	0.000	0.00
5.	Tamil Nadu	12948.238	25.883	588.830	1653.816	107.260	0.000	15324.027
Eastern Region								
1.	Andaman Nicobar	0.000	0.000	0.000	0.000	0.000	0.000	0.00
2.	Bihar	0.000	0.000	0.000	27.651	21.057	0.000	48.708
3.	Jharkhand	0.000	6.813	0.000	0.000	0.000	0.000	6.813
4.	Orissa	0.000	17.977	41.360	0.000	242.216	0.000	301.553
5.	Sikkim	0.000	0.000	0.000	0.000	0.000	0.000	0.00
6.	West Bengal	0.000	0.000	0.000	0.000	0.000	0.000	0.00
7.	Damodar Valley Corporation	0.000	0.000	0.000	0.000	96.884	0.000	96.884
North Eastern Region								
1.	Arunachal Pradesh	0.000	0.000	0.000	0.000	4.534	0.000	4.534
2.	Assam	0.000	0.000	0.000	0.000	0.000	0.000	0.00
3.	Manipur	0.000	0.000	0.000	0.000	0.000	0.000	0.00
4.	Meghalaya	0.000	0.000	0.000	0.000	0.000	0.000	0.00
5.	Mizoram	0.000	0.000	0.000	0.000	0.000	0.000	0.00
6.	Nagaland	0.000	0.000	0.000	0.000	0.000	0.000	0.00
7.	Tripura	0.000	0.000	0.000	0.000	0.000	0.000	0.00
	Total	31982.104	1648.634	2226.672	8722.834	2809.375	223.444	47613.063

(Million Units)								
S. No	State	Wind	Solar	Biomass	Bagasse	Small Hydel	Others	Total
2013-14								
Northern Region								
1.	Delhi	0.00	3.285	0.00	0.00	0.00	100.426	103.711
2.	Haryana	0.00	9.390	67.400	63.990	238.600	0.00	379.380
3.	HP	0.00	0.00	0.00	0.00	1181.010	0.00	1181.010
4.	Punjab	0.00	51.689	440.137	172.665	227.776	2.833	895.101
5.	Rajasthan	3695.666	1052.044	248.099	0.00	8.268	0.00	5004.076
6.	Uttar Pradesh	0.00	14.962	84.556	2703.609	25.918	34.353	2863.398
7.	Uttarakhand	0.00	5.548	0.00	89.617	263.448	0.00	358.613
8.	NTPC Dadri	0.00	6.088	0.00	0.00	0.00	0.00	6.088
9.	NTPC Faridabad	0.00	0.006	0.00	0.00	0.00	0.00	0.006
10.	NTPC Unchahar	0.00	0.002	0.00	0.00	0.00	0.00	0.002
Western Region								
1.	Chhattisgarh	0.00	11.417	1207.362	0.00	10.392	0.00	1229.171
2.	Gujarat	5288.557	1369.415	24.148	0.00	31.599	0.00	6713.719
3.	Madhya Pradesh	477.400	247.050	32.940	0.00	290.300	3.790	1051.480
4.	Maharashtra	5727.352	257.424	170.829	1950.741	662.592	0.00	8768.938
5.	NTPC Rajgarh	0.00	0.004	0.00	0.00	0.00	0.00	0.004
Southern Region								
1.	Andhra Pradesh	817.850	207.110	317.600	239.120	161.980	39.200	1782.860
2.	Karnataka	4547.916	38.253	143.813	2523.693	1808.975	0.000	9062.650
3.	Kerala	68.071	0.00	0.00	0.00	554.609	34.886	657.566
4.	Tamil Nadu	10641.985	38.873	625.682	1217.744	119.188	0.00	12643.472
5.	NTPC Ramagundam	0.00	2.451	0.00	0.00	0.00	0.00	2.451
Eastern Region								
1.	Andaman Nicobar	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.	Bihar	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.	Jharkhand	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.	Orissa	0.00	34.273	0.00	0.00	336.559	0.00	370.832
5.	DVC	0.00	0.00	0.00	0.00	101.985	0.00	101.985
6.	NTPC Andaman	0.00	6.504	0.00	0.00	0.00	0.00	6.504
7.	NTPC Talcher	0.00	0.001	0.00	0.00	0.00	0.00	0.001
North-Eastern Region								
1.	Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.	Meghalaya	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.	Mizoram	0.00	0.00	0.00	0.00	41.477	0.00	41.477
	Total	31264.797	3353.335	3362.566	8961.179	6064.676	215.488	53224.496
2014-15								
Northern Region								
1.	Chandigarh	0.00	2.23	0.00	0.00	0.00	0.00	2.23
2.	Delhi	0.00	3.18	0.00	0.00	0.00	113.44	116.63
3.	Haryana	0.00	10.36	111.71	67.65	280.96	0.00	470.69
4.	HP	0.00	0.00	0.00	0.00	1685.08	0.00	1685.08
5.	J & K	0.00	0.00	0.00	0.00	313.23	0.00	313.23
6.	Punjab	0.00	129.89	347.23	138.64	543.53	0.00	1159.29
7.	Rajasthan	4053.85	1259.19	278.24	0.00	5.30	0.00	5596.57
8.	Uttar Pradesh	0.00	20.13	89.17	2823.19	30.30	177.91	3140.70
9.	Uttarakhand	0.00	11.63	0.00	87.50	565.25	0.00	664.38
10.	NTPC	0.00	22.90	0.00	0.00	0.00	0.00	22.90
11.	Oil India Ltd	117.78	9.14	0.00	0.00	0.00	0.00	126.93
Western Region								
1.	Chhattisgarh	0.00	13.54	1044.35	0.00	8.40	0.00	1066.29
2.	Goa/NTPC Rajgarh	0.00	62.94	0.00	0.00	0.00	0.00	62.94

(Million Units)								
S. No	State	Wind	Solar	Biomass	Bagasse	Small Hydel	Others	Total
3.	Gujarat	5660.09	1474.56	40.48	0.00	47.13	0.00	7222.27
4.	Madhya Pradesh	592.25	562.29	74.13	0.00	196.71	2.13	1427.51
5.	Maharashtra	6804.80	349.32	163.53	2690.18	275.82	0.28	10283.93
6.	Dadra and Nagar Haveli	0.00	0.03	0.00	0.00	0.00	0.00	0.03
7.	Daman & Diu	0.00	0.15	0.00	0.00	0.00	0.00	0.15
Southern Region								
1.	Andhra Pradesh	1675.82	159.77	313.35	273.30	274.61	14.20	2711.06
2.	Telangana	0.00	138.12	161.23	378.40	60.43	64.68	802.86
3.	Karnataka	4658.10	100.39	208.15	2882.51	1845.75	0.00	9694.90
4.	Kerala	58.40	0.00	0.71	0.00	570.53	0.00	629.64
5.	Puducherry/NTPS Rama	0.00	15.62	0.00	0.00	0.00	0.00	15.62
6.	Tamil Nadu	10147.06	158.75	325.60	1044.19	226.81	0.00	11902.39
7.	Lakshadweep	0.00	5.13	0.00	0.00	0.00	40.96	46.09
Eastern Region								
1.	Andaman Nicobar	0.00	0.00	0.00	0.00	0.47	0.00	0.47
2.	Bihar	0.00	0.00	1.97	178.14	29.01	0.00	209.13
3.	Jharkhand	0.00	8.32	0.00	0.00	0.00	0.00	8.32
4.	Orissa	0.00	44.94	0.00	0.00	284.88	0.00	329.82
5.	Sikkim	0.00	0.00	0.00	0.00	20.88	0.00	20.88
6.	West Bengal	0.16	7.07	0.00	1220.97	325.43	0.00	1553.63
7.	Damodar Valley Corporation	0.00	0.00	0.00	0.00	146.86	0.00	146.86
8.	NTPC Andman+Talchar	0.00	18.79	0.00	0.00	0.00	0.00	18.79
North-Eastern Region								
1.	Arunachal Pradesh	0.00	0.00	0.00	0.00	51.94	0.00	51.94
2.	Assam	0.00	9.65	0.00	0.00	54.87	0.00	64.52
3.	Manipur	0.00	0.00	0.00	0.00	0.00	0.00	
4.	Meghalaya	0.00	0.00	0.00	0.00	66.94	0.00	66.94
5.	Mizoram	0.00	0.00	0.00	0.00	34.86	0.00	34.86
6.	Nagaland	0.00	0.00	0.00	0.00	84.14	0.00	84.14
7.	Tripura	0.00	0.00	0.00	0.00	29.37	0.00	29.37
8.	Neeeco	0.00	0.98	0.00	0.00	0.00	0.00	0.98
	Total	33768.30	4599.02	3159.85	11784.66	8059.50	413.60	61784.93

Source: Central Electricity Authority (CEA)

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