

**GOVERNMENT OF INDIA
MINISTRY OF POWER
LOK SABHA
UNSTARRED QUESTION NO.1090
ANSWERED ON 08.02.2024**

POWER GENERATION FROM VARIOUS SOURCES

†1090. SHRI HAJI FAZLUR REHMAN:

**Will the Minister of POWER
be pleased to state:**

- (a) the details of the installed capacity of power generation in Central/State/private sectors and the percentage of electricity being generated from various sources in the country during the year 2023-24, State/UT-wise;**
- (b) the targets set and achieved for electricity generation from various sources during the years 2022-23 and 2023-24; and**
- (c) the details of power generation capacity increased in various sectors in the country during the last year and the details of future plans formulated by the Government to enhance the power generation capacity and to meet the increasing electricity demand in the country?**

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a): The sector-wise All India Installed Capacity of power generation, as on 31.12.2023, is given at Annexure-I. The State/UT and source-wise details of the Electricity Generation and percentage share of conventional sources during the year 2023-24 (up to December, 2023) is given at Annexure-II. The details of State/UT and source-wise Generation from Renewable Energy (RE) sources during current year 2023-24 (up to December, 2023) are given at Annexure-III.

(b): The generation target and electricity generation during the years 2022-23 and 2023-24 is given at Annexure-IV.

(c): There has been generation capacity addition of 28802 MW during the period from March, 2022 to December, 2023. The details of increase of power generation capacity in various sectors in the country during the last two year and current year upto December 2023 is given at Annexure-V.

Government of India have taken following steps to meet the increased demand for power in the country:

(i) In order to ensure an uninterrupted power supply for the nation's growth, the anticipated capacity addition between 2023-32 is given below:

(a) 26380 MW of Thermal Capacity is under construction, 11960 MW has been bid out and 19050 MW under clearances. The total anticipated Thermal capacity addition by 2031-2032 will be 93380 MW.

(b) 18033.5 MW of Hydro Capacity (including stalled projects) is under construction and the total anticipated Hydro capacity addition by 2031-2032 will be 42014 MW.

(c) 8000 MW of Nuclear Capacity is under construction and the total anticipated Nuclear capacity addition by 2031-2032 will be 12200 MW.

(d) 103660 MW of Renewable Energy Capacity is also currently under construction and the anticipated RE capacity addition by 2031-32 will be 322000 MW.

Thus, total 156073.5 MW of Capacity is under construction and the total anticipated capacity addition by 2031-2032 will be 469594 MW.

(ii) 1,89,052 circuit kilometer (ckm) of transmission lines, 6,88,142 MVA of Transformation capacity and 80,590 MW of Inter-Regional capacity has been added connecting the whole country into one grid running on one frequency with the capability of transferring 1,16,540 MW from one corner of the country to another. India's grid has emerged as one of the largest unified grids in the world. Connecting the whole country into one grid has transformed the country into one unified power market. Distribution Companies can buy power at cheapest available rates from any generator in any corner of the country thereby enabling cheaper electricity tariffs for consumers

(iii) India has committed to augment non fossil fuel based installed electricity generation capacity to over 500000 MW by 2030. Transmission plan for integration of 500000 MW RE capacity by 2030 is being implemented in a phased manner commensurate with RE capacity addition.

(iv) Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission to RE developers for installation of RE projects at large scale.

(v) We have reformed the Electricity market by adding the Real Time Market (RTM), Green Day Ahead Market (GDAM), Green Term Ahead Market (GTAM), High Price Day Ahead Market (HP-DAM) in Power Exchanges. Also, DEEP Portal (Discovery of Efficient Electricity Price) for e-Bidding and e-Reverse for procurement of short-term power by DISCOMs was introduced.

(vi) We have constructed Green Energy Corridors and put in place 13 Renewable Energy Management Centres. Presently Renewable Energy Capacity is 180800 MW and 103660 MW is under installation.

(vii) We have made the Power Sector viable. The AT&C losses have come down from 25.72% in 2014-15 to 15.40% in 2022-23. Since implementation of LPS Rules, legacy dues of Gencos have come down from Rs. 1,39,947 crore as on 03.06.2022 to Rs. 49,451 crore as on 31.01.2024. Further, Discoms are making payments for current overdues on time.

ANNEXURE-I

**ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION
NO. 1090 ANSWERED IN THE LOK SABHA ON 08.02.2024**

The detail of the sector-wise All India Installed Capacity

Sector	Installed Capacity (MW)
Central Sector	102274.94
State Sector	106332.93
Private Sector	219691.40
Grand Total	428299.27

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1090 ANSWERED IN THE LOK SABHA ON 08.02.2024

The detail of State/UT and source-wise electricity generation and percentage share of conventional sources during the year 2023-24 (up to December, 23)

(All fig. in MUs)

State	SECTOR	COAL	DIESEL	HIGH SPEED DIESEL	HYDRO	LIGNITE	NAPTH A	NATURAL GAS	NUCLEAR	Generation Total (in MU)
		% of total (State)	% of total (State)	% of total (State)	% of total (State)	% of total (State)	% of total (State)	% of total (State)	% of total (State)	
Andaman & Nicobar Islands	PVT SECTOR	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	187.02
	STATE SECTOR	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	65.68
Andhra Pradesh	CENTRAL SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8325.01
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20590.93
	STATE SECTOR	95.49	0.00	0.00	4.51	0.00	0.00	0.00	0.00	24657.65
Arunachal Pradesh	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	3752.98
Assam	CENTRAL SECTOR	73.11	0.00	0.00	3.77	0.00	0.00	23.11	0.00	5375.97
	STATE SECTOR	0.00	0.00	0.00	19.55	0.00	0.00	80.45	0.00	1614.68
Bihar	CENTRAL SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43267.06
Chhattisgarh	CENTRAL SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43284.67
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61256.67
	STATE SECTOR	98.37	0.00	0.00	1.63	0.00	0.00	0.00	0.00	15827.91
Delhi	IPP SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STATE SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	2891.10
Goa	IPP SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gujarat	CENTRAL SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	17.25	82.75	6723.34
	IPP SECTOR	83.68	0.00	0.00	0.00	5.43	0.00	10.89	0.00	40526.71
	PVT SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2134.71
	STATE SECTOR	71.05	0.00	0.00	16.92	9.15	0.00	2.88	0.00	21962.32
Haryana	CENTRAL SECTOR	97.85	0.00	0.00	0.00	0.00	0.00	2.15	0.00	6390.87
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6504.20
	STATE SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8683.59
Himachal Pradesh	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	23150.76
	IPP SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	6738.90
	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	2379.14
Jammu and Kashmir	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	9641.89
	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	4284.77
Jharkhand	CENTRAL SECTOR	99.40	0.00	0.00	0.60	0.00	0.00	0.00	0.00	14494.35
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10171.25
	STATE SECTOR	94.81	0.00	0.00	5.19	0.00	0.00	0.00	0.00	1771.31
Karnataka	CENTRAL SECTOR	61.11	0.00	0.00	0.00	0.00	0.00	0.00	38.89	14304.87
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7220.46
	STATE SECTOR	68.77	0.00	0.00	31.23	0.00	0.00	0.00	0.00	23253.79

Kerala	CENTRAL SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	IPP SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	3895.44
Ladakh	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	347.39
Lakshadweep	STATE SECTOR	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	47.80
Madhya Pradesh	CENTRAL SECTOR	91.94	0.00	0.00	8.06	0.00	0.00	0.00	0.00	47244.73
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45766.63
	STATE SECTOR	93.35	0.00	0.00	6.65	0.00	0.00	0.00	0.00	22649.17
Maharashtra	CENTRAL SECTOR	69.15	0.00	0.00	0.00	0.00	0.00	3.58	27.28	23350.32
	IPP SECTOR	99.95	0.00	0.00	0.05	0.00	0.00	0.00	0.00	35009.51
	PVT SECTOR	75.15	0.00	0.00	15.95	0.00	0.00	8.90	0.00	7565.96
	STATE SECTOR	90.61	0.00	0.00	6.83	0.00	0.00	2.56	0.00	44882.17
Manipur	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	248.72
	STATE SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meghalaya	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	714.12
Mizoram	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	81.71
Nagaland	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	155.53
Odisha	CENTRAL SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25559.10
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14249.07
	STATE SECTOR	64.30	0.00	0.00	35.70	0.00	0.00	0.00	0.00	13719.19
Puducherry	STATE SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	177.60
Punjab	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	906.62
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18317.91
	STATE SECTOR	67.79	0.00	0.00	32.21	0.00	0.00	0.00	0.00	9217.49
Rajasthan	CENTRAL SECTOR	0.00	0.00	0.00	0.00	17.76	0.00	4.94	77.30	6809.98
	IPP SECTOR	55.41	0.00	0.00	0.00	44.59	0.00	0.00	0.00	11503.61
	PVT SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	STATE SECTOR	96.02	0.00	0.00	1.87	0.00	0.00	2.10	0.00	32534.14
Sikkim	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	2226.29
	IPP SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	1973.30
	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	4292.76
Tamil Nadu	CENTRAL SECTOR	28.95	0.00	0.00	0.00	37.44	0.00	0.00	33.61	34068.78
	IPP SECTOR	91.66	0.00	0.00	0.00	8.34	0.00	0.00	0.00	12251.63
	STATE SECTOR	80.97	0.00	0.00	12.72	0.00	0.00	6.31	0.00	22483.80
Telangana	CENTRAL SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13470.14
	STATE SECTOR	96.25	0.00	0.00	3.75	0.00	0.00	0.00	0.00	28566.62
Tripura	CENTRAL SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	4580.74
	STATE SECTOR	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	364.98
Uttar Pradesh	CENTRAL SECTOR	94.10	0.00	0.00	0.00	0.00	0.00	2.54	3.36	61194.90
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32472.97
	STATE SECTOR	97.45	0.00	0.00	2.55	0.00	0.00	0.00	0.00	26199.14
Uttarakhand	CENTRAL SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	4807.79
	IPP SECTOR	0.00	0.00	0.00	89.64	0.00	0.00	10.36	0.00	3418.12
	STATE SECTOR	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	4013.19
West Bengal	CENTRAL SECTOR	96.83	0.00	0.00	3.17	0.00	0.00	0.00	0.00	33828.43
	IPP SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4823.90
	PVT SECTOR	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5116.80
	STATE SECTOR	94.93	0.00	0.00	5.07	0.00	0.00	0.00	0.00	25265.64
Bhutan	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4672.10
Grand Total										1136480.49

**ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1090
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**The detail of All India Generation from Renewable Energy Sources for the Year 2023-24
(upto Dec 2023)**

(All fig. in MUs)

Name of State/UT	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total
Chandigarh	0.00	9.99	0.00	0.00	0.00	0.00	9.99
Delhi	0.00	154.90	0.00	0.00	0.00	382.05	536.95
Haryana	0.00	701.62	218.99	57.46	178.80	44.91	1201.78
HP	0.00	44.94	0.00	0.00	2314.92	0.00	2359.86
J & K	0.00	0.00	0.00	0.00	347.34	0.00	347.34
Ladkh	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Punjab	0.00	2403.38	440.49	83.69	545.28	0.00	3472.84
Rajasthan	6861.59	28274.90	279.48	0.00	2.56	0.00	35418.53
Uttar Pradesh	0.00	2966.98	24.39	1486.24	126.03	76.69	4680.33
Uttarakhand	0.00	248.85	0.00	186.39	265.05	0.00	700.29
Northern Region	6861.59	34805.56	963.35	1813.77	3779.98	503.65	48727.90
Chhattisgarh	0.00	622.30	1038.31	8.85	134.17	0.00	1803.63
Gujarat	19804.55	9499.73	0.00	0.74	145.11	0.00	29450.12
Madhya Pradesh	3946.61	2696.29	64.85	27.28	355.13	19.86	7110.02
Maharashtra	7121.00	4130.21	228.17	1561.09	684.92	13.92	13739.31
Dadra and Nagar Haveli and Daman and Diu	0.00	11.10	9.71	0.00	0.00	0.00	20.81
Goa	0.00	45.72	0.00	0.00	0.00	5.92	51.64
Western Region	30872.15	17005.34	1341.04	1597.96	1319.33	39.70	52175.53
Andhra Pradesh	7257.52	5990.90	13.38	32.57	95.97	230.68	13621.02
Telangana	242.92	4988.87	3.88	38.82	50.16	108.33	5432.98
Karnataka	9216.22	11119.16	44.20	1637.40	1297.11	0.00	23314.08
Kerala	196.72	840.23	0.00	60.45	612.62	0.03	1710.05
Tamil Nadu	15177.48	8468.41	95.56	423.43	142.21	0.00	24307.08
Lakshadweep	0.00	0.07	0.00	0.00	0.00	0.00	0.07
Puducherry	0.00	9.18	0.00	0.00	0.00	0.00	9.18
Southern Region	32090.85	31416.82	157.01	2192.67	2198.06	339.05	68394.46
Andaman Nicobar	0.00	18.10	0.00	0.00	9.31	0.00	27.41
Bihar	0.00	140.65	0.00	72.73	5.51	0.00	218.89
Jharkhand	0.00	13.23	0.00	0.00	0.00	0.00	13.23
Orissa	0.00	548.77	73.21	0.00	350.59	0.00	972.57
Sikkim	0.00	0.00	0.00	0.00	9.27	0.00	9.27
West Bengal	0.00	119.30	0.00	0.00	163.65	1157.18	1440.13
Eastern Region	0.00	840.05	73.21	72.73	538.32	1157.18	2681.49
Arunachal Pradesh	0.00	1.59	0.00	0.00	0.52	0.00	2.11
Assam	0.00	238.47	0.00	0.00	56.58	0.39	295.44
Manipur	0.00	5.79	0.00	0.00	0.00	1.23	7.02
Meghalaya	0.00	0.00	0.00	0.00	53.60	0.00	53.60
Mizoram	0.00	2.39	0.00	0.00	71.95	0.00	74.34
Nagaland	0.00	0.00	0.00	0.00	72.93	0.00	72.93
Tripura	0.00	3.58	0.00	0.00	0.00	0.00	3.58
North Eastern Region	0.00	251.82	0.00	0.00	255.57	1.62	509.02
All India Total	69824.59	84319.58	2534.61	5677.13	8091.27	2041.21	172488.40

ANNEXURE- IV**ANNEXURE REFERRED IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1090
ANSWERED IN THE LOK SABHA ON 08.02.2024**

**The details of Generation Target and Electricity Generation during the years 2022-23
and 2023-24****(All fig. in MUs)**

Fuel		2022-23		2023-24 (Upto Dec)	
		Program	Generation	Program (Till December)	Generation
THERMAL	COAL	1181153.00	1145907.58	932087.00	932258.66
	DIESEL	151.00	229.71	84.00	300.50
	HIGH SPEED DIESEL	0.00	0.00	0.00	0.00
	LIGNITE	34170.00	36188.34	27063.00	24324.57
	NAPHTHA	0.00	0.83	0.00	0.00
	NATURAL GAS	41914.00	23884.21	23814.00	23903.53
NUCLEAR	NUCLEAR	43324.00	45861.09	34534.00	36263.36
HYDRO	HYDRO	150661.00	162098.77	131808.00	114757.77
Bhutan Import	Bhutan Import	8000.00	6742.40	6702.00	4672.10
Renewable (excl Large Hydro)	Renewable(excl Large Hydro)	184000.00	203552.68	215000	172488
Grand Total		1643373.00	1624465.61	1371092.00	1308968.49

ANNEXURE-V**ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 1090
ANSWERED IN THE LOK SABHA ON 08.02.2024**

**The details of power generation capacity increased in various sectors in the country
during the last two year and current year upto December 2023.****(All fig. in MW)**

Year	Central Sector	State Sector	Private Sector	All India	Increase in generation capacity
31/03/2022	99005	104855	195637	399497	
31/03/2023	100055	105726	210278	416059	16562
31/12/2023	102275	106333	219691	428299	12240
				Total	28802
