GOVERNMENT OF INDIA
MINISTRY OF POWER
RAJYA SABHA
UNSTARRED QUESTION NO.637
ANSWERED ON 07.02.2023

POWER GENERATION IN THE COUNTRY FROM DIFFERENT SOURCES

637 # SHRI JUGALSINH LOKHANDWALA:

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

(a) the quantum of electricity being generated in the country at present from different sources, along with the potential of electricity production and the increase registered in electricity production in the last five years;

(b) the schemes of Government to meet the continuous demand of power at the time of peak load and the success achieved in the same; and

(c) the percentage of electricity being generated from renewable energy sources such as solar energy, geothermal energy, wind energy, tidal energy, hydro power, biomass, etc. at present and the plan and target to take it further?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : The details of electricity produced in India, during the current year 2022-23 (up to December, 2022) from different sources along with the program of electricity production and the increase registered in electricity production during the last five years are given at **Annexure-I.**

(b) : Indian power system met a record power demand of 211.6 GW in June 2022. During the current year 2023, the power demand is expected to be around 225 GW during summer. The Government have taken the following steps to meet the peak demand of power:

(i) 175 GW of power generation capacity, 173459 ckt kms of transmission lines and 621176 MVA of transformation capacity has been added to our grid from 2014 till 31.12.2022.

(ii) Under DDUGJY/Saubhagya/IPDS the Distribution system has been strengthened at a cost of Rs. 2.02 Lakh Crore-adding 2927 new substations, upgrading 3964 substations and adding 8.48 lakh ckt km of HT/LT lines etc from 2014 till 31.12.2022.

(iii) 100% FDI through automatic route is allowed for projects of power generation (except atomic energy), transmission, distribution and trading.

(iv) Notification of Revised Tariff Policy on 28.01.2016 with various provisions to encourage private sector participation in generation as well as in transmission.

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(v) In order to promote generation from renewable sources of energy and attract investments in this sector, Inter State Transmission System (ISTS) charges for transmission of the electricity generated from solar and wind sources have been waived for projects to be commissioned by 30.06.2025. Further, ISTS charges on transmission of electricity generated from new hydro projects waived for 18 years from the date of commissioning.

(vi) Green Open Access Rules, 2022 have been notified on 06.06.22 for promoting generation, purchase and consumption of green energy.

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

(viii) With the objective of improving the quality and reliability of power supply to consumers through a financially sustainable and operationally efficient Distribution Sector in the country. Government of India has launched Revamped Distribution Sector Scheme (RDSS) in July 2021. The scheme aims to reduce the Aggregate Technical & Commercial losses (AT&C) to pan-India levels of 12-15% and Average Cost of Supply-Average Realizable Revenue (ACS-ARR) gap to zero by 2024-25. The scheme has an outlay of Rs.3,03,758 crore and an estimated Gross Budgetory Support (GBS) of Rs.97,631 crore from the Central Government.

(ix) Measures have been taken to ensure the availability of the generation capacity. The generators shall complete the maintenance work of their plants well before the period of high demand. No planned maintenance will be taken during the high demand period (say April to May 2023).

(x) Monitoring and Coordination with Ministries of coal and railways on a regular basis for increase in the production and dispatch of coal as much as possible.

(xi) All generators have been asked for timely import of Coal for blending purposes so that adequate coal stock is maintained in the plant.

(xii) All captive coal blocks have been asked to maximize the coal production to supplement the coal supply from domestic coal companies (CIL and SCCL).

(xiii) Additional arrangement for gas for running gas based stations has been planned from GAIL, during high power demand months.

(xiv) The Electricity Amendment Rules, 2022 has been notified on 29th December, 2022 which mandate preparation of resource adequacy plan so as to successfully meet the power demand of the consumers.

These measures have contributed to the present status wherein power availability has gone upto 22½ hrs, on an average, in rural areas and 23½ hrs in urban areas.

(c) : The percentage of electricity being produced from renewable energy sources such as solar energy, geothermal energy, wind energy, tidal energy, hydro power and biomass etc. during the current year 2022-23 (up to December, 2022) is given at **Annexure-II.**

The generation target from renewable energy sources including large hydro & Bhutan import for the year 2022-23 and 2023-24 is 342667 MU and 379000.70 MU respectively.

The Government is moving aggressively towards other renewable energy source like solar, Off-shore wind, On-shore wind, Biomass, Battery energy storage system etc. Renewable Capacity (excluding Large Hydro) under implementation is 61.98 GW and under tendering is 36.44 GW.

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ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 637 ANSWERED IN THE RAJYA SABHA ON 07.02.2023

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The details of electricity produced in India during the current year 2022-23 (up to December, 2022) from different sources along with the program of electricity production and the increase registered in electricity production in the last five years

Category	Fuel	2017-18		2018-19		2019-20		2020-21	
		Genera-tion (MU)	% Growth w.r.t. Last Year	Genera-tion (MU)	% Growth w.r.t. Last Year	Generation (MU)	% Growth w.r.t. Last Year	Genera-tion (MU)	% Growth w.r.t. Last Year
THERMAL	COAL	951754.51	4.57	987681.83	3.77	961218.23	-2.68	950937.55	-1.07
	LIGNITE	34836.14	0.32	34583.50	-0.73	32978.76	-4.64	30505.68	-7.50
	NATURAL GAS	50154.78	2.22	49832.89	-0.64	48442.64	-2.79	50842.59	4.95
	NAPTHA	52.96	100.7	0.86	-98.38		-100.0	101.41	-
	DIESEL	260.71	-5.30	124.80	-52.13	108.23	-13.28	126.31	16.71
	HIGH SPEED DIESEL	0.00	-	0.00	-	0.00	-	0.00	-
THERMAL Total		**1037059.10**	4.31	**1072223.88**	3.39	**1042747.86**	-2.75	**1032513.54**	-0.98
NUCLEAR Total		**38346.12**	1.13	**37812.59**	-1.39	**46472.45**	22.90	**43029.08**	-7.41
Large HYDRO		126122.70	3.06	134893.61	6.95	155769.12	15.48	150299.52	-3.51
Bhutan (IMP.)		4778.33	-14.94	4406.62	-7.78	5794.48	31.49	8765.50	51.27
TOTAL (Thermal, Nuclear, Large Hydro & Import) "A"		**1206306.25**	3.98	**1249336.70**	3.57	**1250783.91**	0.12	**1234607.64**	-1.29
Renewable (Excl. large Hydro) "B"		101839.48	24.88	126759.09	24.47	138337.02	9.13	147247.51	6.44
Grand Total(A+B) "C"		**1308145.73**	5.35	**1376095.79**	5.19	**1389120.93**	0.95	**1381855.15**	-0.52
Total Renewable (incl. Large Hydro and Bhutan Imp)"D"		232740.51	11.07	266059.32	14.32	299900.62	12.72	306312.53	2.14
% of Total Renewable W.r. t. Grand Total (% of C/D)		**17.79**		**19.33**		**21.59**		**22.17**	

Category	Fuel	2021-22		2022-23		2022-23	2023-24
		Generation (MU)	% Growth w.r.t. Last Year	Generation (upto-Dec 22) in (MU)	% Growth w.r.t. Last Year (up to Dec)	Generation Program (in MU)	Generation Program (in MU)
THERMAL	COAL	1041487.43	9.52	846570.89	11.39	1179367.00	1255000.00
	LIGNITE	37094.04	21.60	26998.82	-1.46	35956.00	37000.00
	NATURAL GAS	36015.77	-29.16	18384.22	-37.13	41914.00	32000.00
	NAPTHA	0.00	-100.00	0.83		0.00	0.00
	DIESEL	117.24	-7.18	134.90	80.23	151.00	110.00
	HIGH SPEED DIESEL	0.00	-	0.00			
THERMAL Total		**1114714.48**	7.96	**892089.66**	**9.23**	**1257388.00**	**1324110.00**
NUCLEAR Total		**47112.06**	9.49	**33920.02**	**-2.63**	43324.00	46190.00
Large HYDRO		151627.33	0.88	137903.61	9.35	150661.00	156700.00
Bhutan(IMP.)		7493.20	-14.51	6653.20	-8.25	8000.00	8000.00
TOTAL (Thermal, Nuclear, Large Hydro & Import) "A"		**1320947.07**	6.99	**1070566.49**	**8.69**	1459373.00	1535000.00
Renewable (Excl. large Hydro) "B"		170912.3	16.07	153052.71	**18.85**	**184000.00**	**215000.00**
Grand Total(A+B) "C"		**1491859.37**	7.96	**1223619.20**	**9.87**	**1643373.00**	**1750000.00**
Total Renewable (incl. Large Hydro and Bhutan Imp)"D"		330032.83	7.74	297609.52	9.87		
% of Total Renewable W.r. t. Grand Total (% of C/D)		**22.12**		**24.32**			

Note:

1. Gross Generation from sources (Thermal, Nuclear & Large Hydro) stations of 25 MW and above only.
2. Gross Generation from Renewable sources (Wind, Solar, Biomass, bagasse, Small Hydro and Others)

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 637 ANSWERED IN THE RAJYA SABHA ON 07.02.2023

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The percentage of electricity being produced from renewable energy sources such as solar energy, geothermal energy, wind energy, tidal energy, hydro power and biomass etc. during the current year 2022-23 (up to December, 2022)

All Figure in MU

Source	**2022-23 (Up to Dec-22)**	**% of Total**
Wind	59532.36	20.0
Solar	72924.49	24.5
Biomass	2251.72	0.8
Bagasse	7054.61	2.4
Small Hydro	9392.75	3.2
Large Hydro	137903.61	46.3
Bhutan Import	6653.20	2.2
Other	1896.79	0.6
Total	**297609.53**	**100.0**

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