

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
STARRED QUESTION NO.122
ANSWERED ON 01.08.2023

MANDATORY PURCHASE OF RENEWABLE ENERGY

122 DR. KANIMOZHI NVN SOMU:

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

- (a) whether Government is asking States to mandatorily purchase renewable energy for reducing the Plant Load Factor for existing thermal power projects;
- (b) if so, the details thereof and the reasons therefor;
- (c) whether the Union Government has asked the Government of Tamil Nadu to purchase solar power despite having surplus hydro power generation and if so, the reasons therefor;
- (d) the details of the States which have been given Renewable Purchase Obligation (RPO) targets and their achievements till date, State-wise; and
- (e) the details of penalties imposed for non-compliance of RPOs, State-wise?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) to (e) : A Statement is laid on the Table of the House.

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (e) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO.122 FOR REPLY ON 01.08.2023 REGARDING MANDATORY PURCHASE OF RENEWABLE ENERGY ASKED BY DR. KANIMOZHI NVN SOMU.

(a) to (c) : Government of India has been promoting use of various forms of renewable energy to attain the goal of 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

In furtherance of this objective, the obligations for purchase of Renewable Energy by the States have been prescribed. As per para 6.4(1) of the Tariff policy 2016, the Ministry of Power (MoP) in consultation with Ministry of New and Renewable Energy (MNRE) has to prescribe the long-term growth trajectory of Renewable Purchase Obligations (RPOs). Pursuant to above, the Government has been prescribing RPO from time to time. In the latest order dated 22nd July 2022, the RPO trajectory has been prescribed for the States from 2022-23 until 2029-30. As per the order, the States shall meet a certain percentage of their energy consumption from energy produced from Wind, Hydro, or Other Renewable Power sources. The RPO trajectory as per the afore-stated order is at **Annexure-I**.

The Plant Load Factor (PLF) of a thermal power plant is dependent on several factors including age of the units, past performance, planned outages, availability of fuel, power demand etc. The PLF of the thermal power plants in the country during the year 2022-23 has increased. The PLF of thermal power plants in the country during 2022-23 was 64.15% as compared to 58.91% in 2021-22 indicating a significant increase of 5.24%.

(d) : The RPO trajectory issued by the Government is applicable for all the States in the country including the State of Tamil Nadu. As per the order, any shortfall in Other RPO (which comprises of Solar energy sources among others) in a particular year can be met from excess of Hydro Purchase Obligation for that year. The present status of RPO compliance of States is enclosed at **Annexure-II**.

(e) : The shortfall in RPO can also be met by the obligated entities through purchase of Renewable Energy Certificates. The details of penalty imposed by the State Commission(s) due to non-compliance of RPO are enclosed at **Annexure-III**.

ANNEXURE REFERRED TO IN PARTS (a) TO (c) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 122 ANSWERED IN THE RAJYA SABHA ON 01.08.2023 REGARDING MANDATORY PURCHASE OF RENEWABLE ENERGY

1. RPO Trajectory beyond 2021-22 as per MoP Order dated 22nd July 2022:

Year	Wind RPO	HPO	Other RPO	Total RPO
2022-23	0.81%	0.35%	23.44%	24.61%
2023-24	1.60%	0.66%	24.81%	27.08%
2024-25	2.46%	1.08%	26.37%	29.91%
2025-26	3.36%	1.48%	28.17%	33.01%
2026-27	4.29%	1.80%	29.86%	35.95%
2027-28	5.23%	2.15%	31.43%	38.81%
2028-29	6.16%	2.51%	32.69%	41.36%
2029-30	6.94%	2.82%	33.57%	43.33%

(a) **Wind RPO** shall be met only by energy produced from Wind Power Projects (WPPs), commissioned after 31st March 2022.

(b) **HPO** shall be met only by energy produced from LHPs (including PSPs), commissioned after 8th March 2019.

(c) **Other RPO** may be met by energy produced from any RE power project not mentioned in (a) and (b) above.

2. Any shortfall remaining in achievement of 'Other RPO' category in a particular year can be met with either the excess energy consumed from WPPs, commissioned after 31st March 2022 beyond 'Wind RPO' for that year or with excess energy consumed from eligible LHPs (including PSPs), commissioned after 8th March 2019 beyond 'HPO' for that year or partly from both. Further, any shortfall in achievement of 'Wind RPO' in a particular year can be met with excess energy consumed from Hydro Power Plants, which is in excess of 'HPO' for that year and vice versa.

ANNEXURE REFERRED TO IN PART (d) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 122 ANSWERED IN THE RAJYA SABHA ON 01.08.2023 REGARDING MANDATORY PURCHASE OF RENEWABLE ENERGY

Table: Status of RPO compliance in FY 2022-23*

Sl. No.	State	RPO Target as per MoP Order for FY 2022-23				RPO Compliance			
		WPO	HPO	Other RPO	Total RPO	WPO	HPO	Other RPO	Total RPO
1	Chandigarh	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	76.2%	76.2%
2	Delhi	0.81%	0.35%	23.44%	24.61%	0.0%	0.6%	23.8%	24.4%
3	Haryana	0.81%	0.35%	23.44%	24.61%	0.0%	0.9%	20.8%	21.7%
4	Himachal Pradesh	0.81%	0.35%	23.44%	24.61%	0.0%	2.7%	76.0%	78.7%
5	Jammu Kashmir & Ladakh UT	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	56.9%	56.9%
6	Punjab	0.81%	0.35%	23.44%	24.61%	0.2%	0.0%	27.3%	27.6%
7	Rajasthan	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	18.3%	18.3%
8	Uttar Pradesh	0.81%	0.35%	23.44%	24.61%	0.0%	0.4%	14.8%	15.2%
9	Uttarakhand	0.81%	0.35%	23.44%	24.61%	0.0%	3.0%	57.4%	60.4%
10	Chhattisgarh	0.81%	0.35%	23.44%	24.61%	0.1%	1.2%	11.9%	13.3%
11	Daman & Diu and Dadra & Nagar Naveli	0.81%	0.35%	23.44%	24.61%	0.2%	0.4%	2.4%	2.9%
12	Goa	0.81%	0.35%	23.44%	24.61%	0.8%	0.4%	16.1%	17.3%
13	Gujarat	0.81%	0.35%	23.44%	24.61%	3.5%	0.2%	16.5%	20.3%
14	Madhya Pradesh	0.81%	0.35%	23.44%	24.61%	0.1%	0.0%	22.3%	22.4%
15	Maharashtra	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	17.1%	17.1%
16	Andhra Pradesh	0.81%	0.35%	23.44%	24.61%	3.3%	0.0%	25.1%	28.5%
17	Karnataka	0.81%	0.35%	23.44%	24.61%	6.4%	0.0%	40.3%	46.7%
18	Kerala	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	36.3%	36.3%
19	Lakshadweep	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	0.2%	0.2%
20	Puducherry	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	6.6%	6.6%

21	Tamil Nadu	0.81%	0.35%	23.44%	24.61%	5.8%	0.0%	19.7%	25.5%
22	Telangana	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	20.2%	20.2%
23	Andaman & Nicobar	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	10.9%	10.9%
24	Bihar	0.81%	0.35%	23.44%	24.61%	0.1%	0.1%	15.9%	16.0%
25	DVC	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	10.6%	10.6%
26	Jharkhand	0.81%	0.35%	23.44%	24.61%	0.0%	0.0%	30.0%	30.0%
27	Odisha	0.81%	0.35%	23.44%	24.61%	0.1%	0.1%	25.3%	25.4%
28	Sikkim	0.81%	0.35%	23.44%	24.61%	0.0%	3.7%	84.7%	88.4%
29	West Bengal	0.81%	0.35%	23.44%	24.61%	0.1%	0.0%	15.9%	15.9%
30	Arunachal Pradesh	0.81%	0.35%	23.44%	24.61%	0.0%	3.5%	15.3%	18.8%
31	Assam	0.81%	0.35%	23.44%	24.61%	0.0%	2.7%	20.4%	23.2%
32	Manipur	0.81%	0.35%	23.44%	24.61%	0.0%	0.2%	33.8%	34.0%
33	Meghalaya	0.81%	0.35%	23.44%	24.61%	0.0%	3.2%	56.7%	59.9%
34	Mizoram	0.81%	0.35%	23.44%	24.61%	0.3%	0.4%	42.1%	42.7%
35	Nagaland	0.81%	0.35%	23.44%	24.61%	0.0%	5.2%	31.3%	36.5%
36	Tripura	0.81%	0.35%	23.44%	24.61%	0.0%	0.1%	13.5%	13.6%

* Provisional

ANNEXURE-III

ANNEXURE REFERRED TO IN PART (e) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 122 ANSWERED IN THE RAJYA SABHA ON 01.08.2023 REGARDING MANDATORY PURCHASE OF RENEWABLE ENERGY

Sl. No.	State ERC	Penalty imposed on RPO non-compliance			
1.	Delhi ERC	The penalty imposed on Delhi Distribution Licensees for Non-compliance to RPO Targets from FY 2017-18 to FY 2019-20 are as follows:			
			RPO Penalty (Rs. Cr.)		
		DISCOMs	FY 2017-18	FY 2018-19	FY 2019-20
		BRPL	9.47	8.89	14.62
		BYPL	6.24	7.22	8.97
		TPDDL	0.00	3.16	2.75
		NDMC	0.28	0.34	0.63
		Total RPO Penalty	15.99	19.61	26.97

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
STARRED QUESTION NO.124
ANSWERED ON 01.08.2023

SURPLUS POWER GENERATION IN VARIOUS STATES

124 **SHRI R. GIRIRAJAN:**

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

- (a) whether Government has any plans to incentivize the surplus power/energy producing States in the country;
- (b) if so, the details thereof and if not, the reasons therefor;
- (c) the details of the power generation capacity installed and power generated in various power surplus States of the country and their comparison with that of Tamil Nadu;
- (d) the funds allocated and disbursed to various power surplus States in the country during the last three years; and
- (e) the steps taken by Government to mitigate the problems faced by Thermal Power Plants in Tamil Nadu due to shortage of coal?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) to (e) : A Statement is laid on the Table of the House.

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (e) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO. 124 FOR REPLY ON 01.08.2023 REGARDING SURPLUS POWER GENERATION IN VARIOUS STATES ASKED BY SHRI R. GIRIRAJAN

(a) & (b) : Electricity generating capacity is set up to meet the demand for electricity. The electricity which is generated is sold; and yields a profit, and no additional incentive is necessary. Indian Electricity Grid (220 kV and above) comprising of about 4.74 lakh ckm of transmission lines and about 11.92 lakh MVA of transformation capacity is operating in the country with the objective of One Nation-One Grid-One Frequency. This has facilitated transfer of surplus power from surplus region(s)/states to deficit region(s)/states. Further, a robust regulatory framework has been formulated for sale and purchase of power between various utilities operating in the country.

Power Exchanges have been set up in the country with the objective of ensuring fair, neutral, efficient and robust electricity price discovery. Surplus State/Distribution Companies (DISCOMs) can sell power in these Power Exchanges to States/DISCOMs/consumers requiring power. Different types of products namely Real Time Market (RTM), Day Ahead Market (DAM), Term Ahead Market (TAM), Green Day Ahead Market (GDAM), Green Term Ahead Market (GTAM) have been launched in these power exchanges to facilitate sale/purchase of power. A robust payment security mechanism adopted by Power Exchanges has led to no default/delay in payment. The sale/purchase of power also takes place through bilateral exchanges between States/DISCOMs through bilateral agreements.

A Portal for Utilization of Surplus Power (PUSHp) has been launched by Ministry of Power on 10.03.2023, wherein the original beneficiary State/DISCOMs can declare surplus power from Central Generating Station/Independent Power Producers/State Generating Stations/Inter State Generating Stations and the same can be allocated/transferred to the new buyer based on the requisition done by them. The liability of fixed cost along with energy charges is transferred to the new buyer thereby reducing the retail tariff cost of consumers of original beneficiary State and at the same time the demand of deficit state is being met.

Cross Border Trade of Electricity Guidelines have been notified by the Government, wherein Indian entity can sell their surplus power to an entity of neighbouring country, with whom India has agreement on cooperation of power, by following the established procedure.

(c) : The generation of electricity and its supply is commensurate to the energy requirements of the States/UTs and any surplus that may be available with any State, is utilized by the deficit ones through various market-based mechanisms. There are no perpetual surplus generating States. While in some part of the Day/Month/Season, these States have surplus, in some part of the Day/Month/Season, they are not surplus.

The total power generation installed capacity in the country and in Tamil Nadu as on 30.06.2023 is **421,901.63 MW and 37,837.12 MW** respectively. The details of State/UT-wise installed capacity including that in Tamil Nadu as on 30.06.2023 are given at **Annexure-I**.

.....2.

The total generation in the country during the year 2022-23 was 1624465 MU, while in Tamil Nadu, total generation for the year 2022-23 was 116688 MU. The details of State/UT-wise generation including that in Tamil Nadu are given at **Annexure-II**.

(d) : As there is no specific scheme to incentivize surplus power/energy producing State, the question of disbursement of funds to the power surplus generating States does not arise.

(e) : As on 24.07.2023, coal stock available with the power plants in Tamil Nadu is 14.6 lakhs tonnes, which is sufficient for about 13 days at a requirement of 85% PLF.

Government of India has taken the following steps to ensure coal supply to power plants in the country including Tamil Nadu for unhindered power generation:-

- i. To address the issues of coal supplies to power sector, an Inter-Ministerial Sub Group comprising of representatives from Ministries of Power, Ministry of Coal, Ministry of Railways, Central Electricity Authority (CEA), Coal India Limited (CIL) and Singareni Collieries Company Limited (SCCL) meet regularly to take various operational decisions to enhance supply of coal to thermal power plants as well as for meeting any contingent situations relating to Power Sector including to alleviate critical coal stock position in power plants.
- ii. An inter-ministerial Secretary-level meeting is held regularly to monitor coal stocks.
- iii. Government has issued revised coal stocking norms, which mandates the power plants to maintain sufficient stock at all times to meet any contingent situation.
- iv. Power Utilities have been importing coal considering their requirement as well as cost-economics. Ministry of Power vide order dated 09.01.2023 directed Central/State Gencos and IPPs to take necessary actions to import coal for blending at the rate of 6% by weight through a transparent competitive procurement so as to have sufficient stock at their power plants for smooth operations till September, 2023.
- v. As per Railways, during 2022-23, the net induction of coal carrying wagons was about 8800 (about 150 rakes). During 2023-24, the likely net induction of coal carrying rakes would be about 200 rakes, which could provide additional 50 rakes/day for coal loading. The expected increase in annual coal transportation capacity on account of wagon induction would be about 70 Million Tonnes (MT). Similarly, likely net induction of coal carrying rakes in 2024-25 is about 250 rakes, which could provide additional 60 rakes/day. The expected increase in annual coal transportation capacity on account of wagon induction would be about 85 MT.
- vi. Railways have identified 40 number of projects for augmentation of coal evacuation. Out of 40 projects, 17 number of projects have already been completed and 23 projects are in progress. Out of 23 projects, it is expected that about 18 projects would be completed by 2026-27.
- vii. According to Railways, likely increase in coal transportation capacity during 2023-24 and 2024-25 is about 185 MT.
- viii. To ensure sufficient coal, Captive Coal Mine Production target for Financial Year 2023-24 is kept at 141 Million Tonnes in comparison to 102.69 MT for previous FY 2022-23.

ANNEXURE-I

ANNEXURE REFERRED TO IN PART (c) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 124 ANSWERED IN THE RAJY SABHA ON 01.08.2023 REGARDING SURPLUS POWER GENERATION IN VARIOUS STATES

The State-wise Installed Generation Capacity (Fuel wise in MW) as on 30.06.2023

Sl. No.	Region / State	Fossil Fuel					Non-Fossil Fuel					Grand Total
		Coal	Lignite	Gas	Diesel	Total Fossil Fuel	Nuclear	Total RES (Including Hydro)				
								Hydro	Solar, Wind & Other RES	Total RES (Incl. Hydro)	Total Non-Fossil Fuel	
1	2	3	4	5=1+2+3+4	6	7	8	9=7+8	10=6+9	14=5+12		
1	Chandigarh	45	0	15	0	60	8	102	64	165	173	233
2	Delhi	3649	0	2115	0	5765	103	723	312	1035	1138	6903
3	Haryana	8817	0	582	0	9399	101	2325	1440	3765	3865	13264
4	Himachal Pradesh	145	0	0	0	145	29	3249	1086	4335	4364	4509
5	Jammu & Kashmir	577	0	304	0	881	68	2322	264	2585	2653	3535
6	Punjab	8214	0	150	0	8364	197	3818	1891	5710	5907	14271
7	Rajasthan	11569	1580	775	0	13923	557	1942	23182	25124	25681	39604
8	Uttar Pradesh	20388	0	1030	0	21417	289	3424	4792	8216	8506	29923
9	Uttarakhand	602	0	520	0	1122	31	2096	934	3030	3061	4183
	Un-allocated	1431	0	291	0	1722	237	751	0	751	988	2711
	Northern Region	55437	1580	5781	0	62798	1620	20752	33966	54717	56337	119135
10	Chhattisgarh	12222	0	0	0	12222	92	233	1314	1547	1638	13860
11	Gujarat	17298	1400	6587	0	25285	797	772	21237	22009	22806	48092
12	Madhya Pradesh	15913	0	332	0	16245	382	3224	6125	9348	9731	25975
13	Maharashtra	25254	0	3513	0	28767	879	3332	12973	16305	17184	45951
14	Daman & Diu	165	0	43	0	208	10	0	41	41	51	259
15	D.N. Haveli	422	0	66	0	489	13	0	5	5	18	507
16	Goa	492	0	68	0	560	34	2	36	38	72	632
	Un-allocated	2835	0	198	0	3033	333	0	0	0	333	3366
	Western Region	74602	1400	10806	0	86808	2540	7563	41730	49293	51833	138641
17	Andhra Pradesh	11231	189	4067	37	15524	127	1674	9378	11052	11179	26703
18	Telangana	9439	61	832	0	10332	149	2480	5135	7614	7763	18095
19	Karnataka	9948	486	0	25	10459	698	3632	17552	21184	21882	32341
20	Kerala	2059	325	534	160	3078	362	1864	1134	2998	3360	6438
21	Tamil Nadu	12754	1959	1027	212	15952	1448	2178	18259	20437	21885	37837
22	Pondicherry	141	118	33	0	292	86	0	43	43	129	421
23	Lakshadweep	0	0	0	27	27	0	0	3	3	3	30
24	NLC		66	0	0	66	0	0	0	0	0	66
	Un-allocated	1426	434	0	0	1860	450	0	0	0	450	2310
	Southern Region	46997	3640	6492	460	57589	3320	11827	51504	63331	66651	124241
25	Bihar	7397	0	0	0	7397	0	110	400	510	510	7907
26	DVC	3037	0	0	0	3037	0	186	0	186	186	3223
27	Jharkhand	2373	0	0	0	2373	0	191	128	319	319	2692
28	Odisha	5020	0	0	0	5020	0	2163	634	2797	2797	7817
29	West Bengal	8650	0	80	0	8730	0	1396	636	2032	2032	10762
30	Sikkim	14	0	0	0	14	0	633	60	693	693	707
31	Andaman- Nicobar	0	0	0	93	93	0	0	35	35	35	128
	Un-allocated	1737	0	0	0	1737	0	85	0	85	85	1822
	Eastern Region	28229	0	80	93	28401	0	4764	1892	6656	6656	35058
32	Arunachal Pradesh	37	0	47	0	84	0	545	145	689	689	773
33	Assam	403	0	742	0	1144	0	522	192	714	714	1858
34	Manipur	16	0	82	36	133	0	87	18	105	105	238
35	Meghalaya	0	0	110	0	110	0	417	50	468	468	578
36	Mizoram	31	0	60	0	92	0	98	76	174	174	265
37	Nagaland	32	0	74	0	106	0	66	36	102	102	208
38	Tripura	0	0	487	0	487	0	68	34	103	103	590
	Un-allocated	113	0	64	0	176	0	140	0	140	140	316
	North-Eastern	631	0	1665	36	2332	0	1944	551	2495	2495	4827
	All India	205895	6620	24824	589	237929	7480	46850	129643	176493	183973	421902

ANNEXURE-II

ANNEXURE REFERRED TO IN PART (c) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 124 ANSWERED IN THE RAJY SABHA ON 01.08.2023 REGARDING SURPLUS POWER GENERATION IN VARIOUS STATES

The details of State/UT-wise generation (in Million Unit) including that in Tamil Nadu:

Name of State/UT	For 2022-23							MUs
	Thermal	Gas	Nuclear	Hydro	Wind	Solar	Other RES	Total
Chandigarh	0	0	0	0	0	13	0	13
Delhi	0	3784	0	0	0	236	294	4314
Haryana	32137	3	0	0	0	555	865	33560
Himachal Pradesh	0	0	0	38667	0	59	2854	41580
Jammu & Kashmir	0	0	0	16777	0	0	393	17170
Ladakh	0	0	0	403	0	0	0	403
Punjab	31506	0	0	4400	0	2779	1391	40076
Rajasthan	55968	1450	6587	967	6111	34474	404	105961
Uttar Pradesh	151155	908	3193	974	0	3674	3543	163447
Uttarakhand	0	0	0	15436	0	332	602	16370
Chhattisgarh	142599	0	0	237	0	635	1368	144839
Gujarat	53323	2159	3640	6133	19206	10335	221	95017
Madhya Pradesh	135838	0	0	7309	4487	3839	547	152020
Maharashtra	124477	2430	8985	5894	7243	4388	5576	158993
DNH & DD	0	0	0	0	0	27	3	30
Goa	0	0	0	0	0	15	5	20
Andhra Pradesh	60932	610	0	3748	7426	8141	845	81702
Telangana	50738	0	0	6010	279	6745	405	64177
Karnataka	35014	0	7443	13157	9968	14154	5454	85190
Kerala	0	0	0	7989	179	880	887	9935
Tamil Nadu	65221	1862	16013	5966	16914	9419	1293	116688
Lakshadweep	15	0	0	0	0	0	0	15
Puducherry	0	233	0	0	0	12	0	245
Andaman Nicobar	215	0	0	0	0	24	14	253
Bihar	55200	0	0	0	0	170	119	55489
Jharkhand	30473	0	0	305	0	20	0	30798
Odisha	64874	0	0	5463	0	706	486	71529
Sikkim	0	0	0	11697	0	0	12	11709
West Bengal	87612	0	0	3424	0	125	1834	92995
Arunachal Pradesh	0	0	0	4821	0	22	3	4846
Assam	5026	3367	0	482	0	216	63	9154
Manipur	0	0	0	478	0	8	1	487
Meghalaya	0	0	0	980	0	0	72	1052
Mizoram	0	0	0	204	0	3	59	266
Nagaland	0	0	0	177	0	0	112	289
Tripura	0	7079	0	0	0	7	0	7086
Sub Total	1182326	23885	45861	162099	71814	102014	29724	1617723
Bhutan Import				6742.4				6742
All India Total								1624465

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
STARRED QUESTION NO.127
ANSWERED ON 01.08.2023

PAYMENT FOR ELECTRICITY PURCHASED BY STATE GOVERNMENTS

127 #SHRI DHIRAJ PRASAD SAHU:

Will the Minister of Power be pleased to state:

- (a) the number of days within which the State Governments are required to pay for the electricity purchased by them from the Union Government;
- (b) whether it is a fact that it takes almost two months for the State Governments to recover the cost of electricity from the consumers;
- (c) whether the Union Government is proposing to give more time to the State Governments to pay for the electricity so that they do not have to face the financial difficulties; and
- (d) if so, the details thereof?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) to (d) : A Statement is laid on the Table of the House.

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO.127 FOR REPLY ON 01.08.2023 REGARDING PAYMENT FOR ELECTRICITY PURCHASED BY STATE GOVERNMENTS ASKED BY SHRI DHIRAJ PRASAD SAHU.

(a) : Payment towards purchase of electricity by the DISCOMs/ State Governments from various Generation companies including Central Sector is guided by the terms and conditions of Power Purchase Agreements (PPAs) signed between the DISCOMs and the Generation companies. All PPAs have provisions related to payments of invoices raised by the Generating Companies which includes due date, rebate, late payment surcharge etc. Such terms and conditions in respect of Central Sector Generation Companies are in turn governed by extant CERC Regulations.

(b) : Electricity bills are raised by the DISCOMs/Power Distribution Utilities as per billing cycle determined by the respective State Electricity Regulatory Commissions (SERCs) for various categories of consumers which may be monthly/ bimonthly and consumers are expected to pay their bills as per due date. The due date varies from State to State as per their respective Supply Code depending upon consumer category, rural/urban location etc.

(c) & (d) : As replied in (a) above, the timeline for making payments to the Generating Companies by State DISCOMs is guided by the provisions of respective PPAs signed between the DISCOMs and the Generating Companies.

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1373
ANSWERED ON 01.08.2023

POWER PLANTS ESTABLISHED FOR EXPORT PURPOSE

1373 MS. DOLA SEN:

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

- (a) whether Government has data of all the power plants of the country, which have been established purely for export purpose;
- (b) if so, the details thereof and if not, the reasons therefor;
- (c) whether Government has data of power units being exported from such power plants to other countries; and
- (d) if so, the details thereof and if not, the reasons therefor?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) & (b) : 1600 MW (2 x 800 MW) Godda Thermal Power Project in State of Jharkhand has been established by Adani Power (Jharkhand) Limited (APJL) exclusively for export of power to Bangladesh. This Power Project, based on imported coal, is electrically not connected with Indian Grid and full capacity has been tied up with Bangladesh.

(c) & (d): The details of energy export to Bangladesh from Godda TPS are given at **Annexure**.

ANNEXURE

**ANNEXURE REFERRED TO IN REPLY TO PARTS (c) & (d) OF
UNSTARRED QUESTION NO. 1373 ANSWERED IN THE RAJYA SABHA
ON 01.08.2023**

Month	Energy export (MU)
March, 2023	170
April, 2023	444
May, 2023	403
June, 2023	564
July, 2023 (Till 20.07.2023)	307

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1419
ANSWERED ON 01.08.2023

CAPACITY ADDITION OF ENERGY FROM CONVENTIONAL SOURCES

1419 SHRI S NIRANJAN REDDY:

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

- (a) whether it is a fact that the target of the scheduled energy capacity addition of 51516.14 MW from conventional sources for 2017-22 has not been met;
- (b) if so, the reasons for missing the target;
- (c) the steps taken by Government to address the gap between planned and actual capacity addition from 2017-22 and meet future energy capacity needs;
- (d) whether Government has a plan to achieve this target while simultaneously decreasing dependence on coal and other non-renewable sources of energy; and
- (e) if so, the details thereof?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) & (b) : As against the scheduled generation capacity addition from conventional sources of 51,561.15 MW for the period 2017-22, capacity addition totalling to 30,667.91MW was achieved as on 31.03.2022.

There were various reasons for slippage of the scheduled energy capacity addition during the period 2017-22, with most important being the COVID-19 pandemic. Apart from the pandemic, other major reasons were:

- Delay in land acquisitions and forest clearance
- Disruption of work due to local issues / litigations
- Delay in supply by equipment manufacturers
- Rise in steel prices delaying material availability at site
- Delay due to change in design
- Impact of monsoons and unprecedented rains
- Inadequate manpower mobilization by contractors

(c) to (e) : The Ministry of Power and the Central Electricity Authority (CEA) monitor the progress of under-construction power projects through frequent site visits and interaction with the developers & other stakeholders to identify and resolve issues which are critical for commissioning of Projects.

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As per National Electricity Plan (NEP) notified in May 2023 (20th Electric Power Survey), following projections have been made to meet future energy capacity needs:

Type of Capacity	2026-2027	2031-2032
	Projected Peak demand - 277 GW Energy Requirement - 1907.8 BU	Projected Peak demand – 366.4 GW Energy Requirement – 2473.8 BU
	Capacity (MW)	
Conventional Capacity	2,73,038	3,04,147
- Coal	2,35,133	2,59,643
- Gas	24,824	24,824
- Nuclear	13,080	19,680
Renewable Capacity	3,36,553	5,96,275
- Large Hydro	52,446	62,178
- Solar	1,85,566	3,64,566
- Wind	72,895	1,21,895
- Small Hydro	5,200	5,450
- Biomass	13,000	15,500
- Pumped Storage Plant (PSP)	7,446	26,686
Battery Energy Storage System (BESS)	8,680/34,720 MWh	47,244/2,36,220 MWh

The share of coal-based capacity in the total installed capacity for the year 2026-27 is likely to be 38.57% which is likely to further reduce to 28.83% for the year 2031-32. The share of RE based capacity in the total installed capacity for the year 2026-27 is likely to be 55.20% which is likely to further increase to 66.22% for the year 2031-32.

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1430
ANSWERED ON 01.08.2023

POWER SUPPLY IN JHARKHAND

1430 # SMT. MAHUA MAJI:

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

- (a) the total power generation capacity in the country;
- (b) the details of power provided to Jharkhand by the Central Government in view of minerals like coal, iron and uranium of the State and its consumption of power;
- (c) whether Government is aware of the fact that the Adani power plant built in Jharkhand is selling power to Bangladesh by generating power from Jharkhand's resources, keeping in view of the acute shortage of electricity in Jharkhand, the reason for not providing electricity to Jharkhand by Adani power plant as per the agreement; and
- (d) the steps being taken by Government in this regard?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : The total power generation capacity in the country as on 30.06.2023 is **421901.63 MW**. Mode-wise break of the installed capacity is given at **Annexure**.

(b) : The allocation of power to Jharkhand from Central Sector Generating Stations as on 30.06.2023 is **1736.4 MW**, which comprises of **1580.6 MW** firm power and **155.8 MW** power from unallocated quota. Energy Supplied to Jharkhand for the year 2022-23 was **12288 MU**.

(c) & (d) : Godda Thermal Power Project, 1600 MW (2 x 800 MW) of Adani Power (Jharkhand) Limited (APJL), a special economic zone (SEZ) project in Jharkhand has been established for export of power to Bangladesh.

An MOU in this regard have been signed by the APJL and State Government of Jharkhand (GoJ). As per the information provided by GoJ, APJL has proposed to supply the 25% power i.e. 400MW from its Raipur Energen Ltd (REL) Power Plant, situated in Chhattisgarh, Raigarh.

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1430 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

The Mode-wise total power generation installed capacity in the country as on 30.06.2023:

Mode wise breakup									Grand Total (MW)
Thermal					Nuclear	Renewable Sources			
Coal	Lignite	Gas	Diesel	Total		Large Hydro	RES	Total	
205895.50	6620.00	24824.21	589.20	237928.91	7480.00	46850.17	129642.55	176492.72	421901.63

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1431
ANSWERED ON 01.08.2023

IMPLEMENTATION AND COVERAGE OF SAUBHAGYA

1431 DR. DHARMASTHALA VEERENDRA HEGGADE:

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

- (a) the status of implementation and coverage of the Pradhan Mantri Sahaj Bijli Har Ghar Yojana -"SAUBHAGYA" in the country;
- (b) whether the said scheme has covered all the States and UTs and if so, the details thereof;
- (c) the status of implementation and coverage of the said scheme in Karnataka, district-wise during the last three years; and
- (d) the funds allocated, released and utilized under the said scheme in Karnataka during the last three years, district-wise?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) & (b) : The Government of India launched Pradhan Mantri Sahaj Bijli Har Ghar Yojana – SAUBHAGYA in October, 2017 with the objective of achieving universal household electrification, by providing electricity connections to all un-electrified households in rural areas and all poor households in urban areas in the country. Under the aegis of SAUBHAGYA, as on 31.03.2019, all households were reported electrified by the States, except 18,734 households in Left Wing Extremists (LWE) affected areas of Chhattisgarh. Subsequently, seven States namely Assam, Chhattisgarh, Jharkhand, Karnataka, Manipur, Rajasthan and Uttar Pradesh reported that around 19.09 lakh un-electrified households, identified before 31.03.2019, which were unwilling earlier but later expressed willingness to get electricity connection. This was also sanctioned. All these seven States had reported 100% household electrification as on 31.03.2021. A total of 2.817 crore households were electrified since the launch of SAUBHAGYA, up to 31.03.2021.

Thereafter, the States reported that some households remained to be electrified, against which, States reported electrification of 4.43 lakh households. Accordingly, a total 2.86 crore households have been electrified. The scheme stands closed on 31.03.2022. As per the SAUBHAGYA portal, a total of 29 states participated during scheme period. The State-wise details of Household electrification in the Country under SAUBHAGYA are as per **Annexure-I**.

(c) : The District-wise status of SAUBHAGYA implementation since its launch, till 31.03.2022, in the State of Karnataka is enclosed at **Annexure-II**.

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(d) : There was no upfront allocation of funds for any State/District under SAUBHAGYA scheme. Funds were released for sanctioned projects in instalments based on the reported utilization of the funds released in the previous instalments and fulfilment of stipulated conditions. Funds under SAUBHAGYA scheme were disbursed DISCOM-wise as a whole by the Nodal Agency but not as district-wise. The DISCOM-wise details of funds allocated, released and utilized under the SAUBHAGYA scheme in the State of Karnataka during the last three years are as under:

(Rs in Crore)

DISCOMs*	2019-20	2020-21	2021-22	2022-23	Total
CESCOM	0.88	0	0.14	0	1.02
GESCOM	18.71	0	1.22	0	19.93
HRECS	1.31	0	0.98	0	2.29
HESCOM	16.75	0	6.38	0	23.13
MESCOM	1.54	0	0	0	1.54
Total released					47.91
Grant Utilized					100%

Note*:CESCOM: Chamundeshwari Electricity Supply Corporation Limited
GESCOM: Gulbarga Electricity Supply Company Limited
HRECS: Hukkeri Rural Electric Co-operative Society Limited
HESCOM: Hubli Electricity Supply Company Limited
MESCOM: Mangalore Electricity Supply Company Limited

ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 1431 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

State-wise electrification of households since launch of Saubhagya Scheme including Additional Households achievement under DDUGJY							
Sl. No.	Name of the States	No. of Households electrified from 11.10.2017 to 31.03.2019 as per Saubhagya Portal	Additional Sanction allowed under Saubhagya		Further Additional Households sanctioned under DDUGJY		Grand Total(A+B)
			No. of Households reported electrified from 01.04.2019 to 31.03.2021	Total HHs electrified as on 31.03.2021(A)	Households Sanctioned during 2021-22	Households electrified(as on 31.03.2022)(B)	
1	Andhra Pradesh*	181,930	0	181,930			181,930
2	Arunachal Pradesh	47,089	0	47,089	7859	0	47,089
3	Assam	1,745,149	200,000	1,945,149	480249	381507	2,326,656
4	Bihar	3,259,041	0	3,259,041			3,259,041
5	Chhattisgarh	749,397	40,394	789,791	21981	2577	792,368
6	Gujarat*	41,317	0	41,317			41,317
7	Haryana	54,681	0	54,681			54,681
8	Himachal Pradesh	12,891	0	12,891			12,891
9	Jammu & Kashmir	377,045	0	377,045			377,045
10	Jharkhand	1,530,708	200,000	1,730,708			1,730,708
11	Karnataka	356,974	26,824	383,798			383,798
12	Ladakh	10,456	0	10,456			10,456
13	Madhya Pradesh	1,984,264	0	1,984,264	99722	0	1,984,264
14	Maharashtra	1,517,922	0	1,517,922			1,517,922
15	Manipur	102,748	5,367	108,115	21135	0	108,115
16	Meghalaya	199,839	0	199,839	420	401	200,240
17	Mizoram	27,970	0	27,970			27,970

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18	Nagaland	132,507	0	132,507	7009	7009	139,516
19	Odisha	2,452,444	0	2,452,444			2,452,444
20	Puducherry*	912	0	912			912
21	Punjab	3,477	0	3,477			3,477
22	Rajasthan	1,862,736	212,786	2,075,522	210843	52206	2,127,728
23	Sikkim	14,900	0	14,900			14,900
24	Tamil Nadu*	2,170	0	2,170			2,170
25	Telangana	515,084	0	515,084			515,084
26	Tripura	139,090	0	139,090			139,090
27	Uttar Pradesh	7,980,568	1,200,003	9,180,571	334652	0	9,180,571
28	Uttarakhand	248,751	0	248,751			248,751
29	West Bengal	732,290	0	732,290			732,290
Total		26,284,350	1,885,374	28,169,724	1,183,870	443,700	28,613,424

*Electrified prior to Saubhagya and not funded under Saubhagya

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 1431 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

District-wise details of households electrified since launch of Saubhagya in Karnataka state

Sl. No	District	Number of Households electrified as per Saubhagya portal (upto 31.03.2019)	Households Covered after 31.03.2019 till 31.03.2021	Total Households electrified since launch of Saubhagya
1	Kodagu	2545		2545
2	Bellary	6303		6303
3	Bidar	5006		5006
4	Gulbarga	7227		7227
5	Koppal	5830		5830
6	Raichur	10309		10309
7	Yadgir	13204		13204
8	Bagalkot	7346	3093	10439
9	Belgaum	35906	10253	46159
10	Bijapur	10797	1310	12107
11	Dharwad	4249	736	4985
12	Gadag	10674	3314	13988
13	Haveri	11190	4853	16043
14	Uttara Kannada	5625	3265	8890
15	Chikmagalur	14211		14211
16	Dakshina Kannada	8540		8540
17	Shimoga	16244		16244
18	Udupi	14060		14060
19	Bangalore	2788		2788
20	Bangalore Rural	6543		6543
21	Chamarajanagar	4456		4456
22	Chikkaballapura	6314		6314
23	Chitradurga	33383		33383
24	Davanagere	11445		11445
25	Hassan	12669		12669
26	Kolar	12411		12411
27	Mandya	15012		15012
28	Mysore	16730		16730
29	Ramanagara	13249		13249
30	Tumkur	32708		32708
State Total		356974	26824	383798

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1433
ANSWERED ON 01.08.2023

UDAY SCHEME

1433 DR. SANTANU SEN:

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

- (a) the status of repayment of the bonds issued by the State Governments and the DISCOMs under the UDAY scheme in the past three years;
- (b) the details of the States that have achieved or failed to achieve the targets of reducing Aggregate Technical & Commercial (AT&C) losses and eliminating Average Cost of Supply-Average Realisable Revenue (ACS-ARR) gap under the UDAY scheme; and
- (c) the details of the challenges and constraints faced in the implementation and monitoring of the UDAY scheme and the steps taken to address them?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : As per OM dated 20th November, 2015 of UDAY Scheme (Clause 7), for Operational and Financial Turnaround of Power Distribution Companies—

- i. State will issue non-SLR (Statutory Liquidity Ratio) including SDL (State Development Loans) bonds in the market or directly to the respective bank/ financial Institution holding the DISCOMs debts to the appropriate extent. Proceeds realized from issue of the bonds to the Banker/ FIs shall be entirely transferred by State to DISCOMs, which in turn shall discharge the corresponding amount of Bank/ FIs debts.
- ii. Non SLR bonds issued by the State will have a maturity period of 10-15 years with a moratorium on repayment of principal up to 5 years, as required by the State.

The summary of bonds issued under UDAY scheme is attached as **Annexure-I**. The maturity period of these bonds vary from State to State and is between 5 and 15 years.

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(b) : As a result of participation of DISCOMs under UDAY and other efficiency measures, State Power Distribution Utilities reported improvements which include:

- i. AT&C losses have reduced from 23.70% in FY2015-16 to 20.73% in FY 2019-20.
- ii. ACS-ARR Gap: The Gap between Average Cost of Supply (ACS) and the Average Revenue Realized (ARR) reduced from Rs. 0.54 per Unit in FY2015-16 to Rs. 0.50 per Unit in FY2019-20.

State-wise details of AT&C losses and ACS-ARR gap are given at **Annexure-II** and **Annexure-III**, respectively.

(c) : Ministry of Power vide Office Memorandum dated 19.01.2016 constituted Monitoring Committee under the Chairmanship of Secretary (Power) and the progress of the scheme, challenges faced were regularly reviewed during the Monitoring Committee meetings. No major challenges were reported for implementation of scheme. The period of the scheme was from FY2015-16 to FY2019-20.

ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1433 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

SUMMARY OF BOND ISSUED UNDER UDAY SCHEME								
Sl. No.	State	Discom Liabilities (as per MoU) as on 30-09-2015	Discom Liabilities to be restructured as on 30-09-2015	Total Bonds issued by State till date	Total Bonds issued by Discom till date	Total bond issued under UDAY till date	Remaining Bonds to be issued by State	Remaining Bonds to be issued by Discoms
1	ANDHRA PRADESH	14721	14721	8256	0	8256	0	6465
2	ASSAM	1510	No bonds have been issued by the Govt. of Assam as the state took over loss in the form of grant and equity.					
3	BIHAR	3109	3109	2332	777	3109	0	0
4	CHHATISGARH	1740	870	870	0	870	0	0
5	HARYANA	34602	34518	25951	0	25951	0	8566
6	HIMACHAL PRADESH	3854	3854	2891	0	2891	0	963
7	JAMMU & KASHMIR	3538	3538	3538	0	3538	0	0
8	JHARKHAND	6718	6136	6136	0	6136	0	0
9	MADHYA PRADESH	34739	7360	7360	0	7360	0	0
10	MAHARASHTRA	22097	6613	4960	0	4960	0	1653
11	MEGHALAYA	167	167	125	0	125	0	42
12	PUNJAB	20838	20262	15629	0	15629	0	4633
13	RAJASTHAN	80530	76120	59722	12368	72090	0	4030
14	TAMIL NADU	30420	30420	22815	0	22815	0	7605
15	TELANGANA	11897	11244	8923	0	8923	0	2321
16	UTTAR PRADESH	53935	50125	39133	10377	49510	0	616
TOTAL		324415	269057	208641	23522	232163.29	0	36894.35
%age of Bonds issued to total debts to be restructured						86%		
Note- States- Goa, Uttarakhand, Gujarat, Karnataka, Manipur, Puducherry, Sikkim, Tripura, Kerala, Arunachal Pradesh, Mizoram have only opted for operational parameters under UDAY, hence, their debt was not taken over by State.								

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1433 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

AT&C LOSS

State	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Andaman & Nicobar Islands			30.28	23.43	23.34
Andhra Pradesh	10.36	13.77	14.15	25.67	10.77
Arunachal Pradesh	54.58	53.64	51.08	52.53	40.49
Assam	26.02	20.11	17.64	20.19	23.39
Bihar	43.30	43.34	33.51	33.30	39.95
Chandigarh			9.56	13.50	15.86
Chhattisgarh	22.10	23.87	20.74	24.96	18.46
Dadra & Nagar Haveli			6.55	5.45	3.56
Daman & Diu			17.11	6.19	4.07
Delhi	12.44	10.79	9.87	9.12	8.26
Goa	19.77	24.33	10.48	17.61	11.41
Gujarat	16.23	14.42	12.19	13.06	10.95
Haryana	29.27	26.42	21.78	18.08	18.26
Himachal Pradesh	9.68	11.48	11.08	12.46	13.33
Jammu & Kashmir	58.75	59.96	53.67	49.94	60.46
Jharkhand	33.34	40.83	44.72	28.33	37.13
Karnataka	17.13	16.84	15.61	19.82	17.58
Kerala	12.40	13.42	12.81	9.10	13.12
Lakshadweep			19.15	26.82	13.69
Madhya Pradesh	27.37	26.80	30.51	36.63	30.38
Maharashtra	21.74	22.84	14.07	15.30	18.56
Manipur	31.72	33.01	27.46	25.26	23.30
Meghalaya	45.98	38.81	41.19	35.22	31.67
Mizoram	35.18	24.98	16.16	16.20	20.66
Nagaland	33.44	38.50	110.85	65.73	64.79
Odisha	38.60	37.19	33.59	31.55	28.94
Puducherry	22.43	21.34	19.19	19.77	18.45
Punjab	15.88	14.46	17.31	11.28	14.35
Rajasthan	31.59	27.33	24.07	28.25	29.86
Sikkim	43.89	35.62	32.48	41.83	28.77
Tamil Nadu	16.83	18.23	19.47	17.86	15.00
Telangana	14.01	15.19	19.40	18.41	21.92
Tripura	32.68	28.95	30.04	38.03	35.71
Uttar Pradesh	39.76	40.91	37.34	32.75	29.64
Uttarakhand	18.01	16.68	16.34	17.45	20.35
West Bengal	28.08	27.83	22.71	19.66	17.76
Grand Total	23.70	23.72	21.57	21.64	20.73

ANNEXURE-III

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1433 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

ACS-ARR GAP on Tariff Subsidy received (excluding Regulatory Income and Revenue Grant under UDAY for loan takeover)

State	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Andaman & Nicobar Islands			19.40	19.19	19.24
Andhra Pradesh	0.80	0.52	0.09	2.63	(0.18)
Arunachal Pradesh	0.49	3.65	3.66	4.47	4.90
Assam	0.23	0.06	(0.32)	(0.32)	(1.04)
Bihar	0.46	0.51	0.68	0.61	0.91
Chandigarh			(1.12)	(0.64)	(0.27)
Chhattisgarh	(0.01)	0.21	0.16	0.24	0.02
Dadra & Nagar Haveli			0.01	(0.02)	(0.03)
Daman & Diu			(0.26)	0.61	0.52
Delhi	(0.37)	(0.08)	(0.08)	(0.22)	0.20
Goa	0.71	0.70	(0.23)	0.27	0.61
Gujarat	(0.02)	(0.05)	(0.11)	(0.05)	(0.11)
Haryana	0.16	0.04	(0.08)	(0.05)	(0.06)
Himachal Pradesh	(0.31)	0.18	0.03	(0.09)	(0.03)
Jammu & Kashmir	3.00	2.65	1.85	1.72	2.03
Jharkhand	0.93	1.39	0.16	0.57	0.87
Karnataka	0.33	0.53	0.36	0.68	0.37
Kerala	0.30	0.62	0.32	0.05	0.10
Lakshadweep			19.11	21.37	20.58
Madhya Pradesh	0.87	0.81	0.88	1.33	0.69
Maharashtra	0.43	0.59	0.25	(0.22)	0.27
Manipur	0.02	0.06	0.08	0.06	0.06
Meghalaya	0.82	1.66	1.16	0.85	1.86
Mizoram	2.06	2.12	2.13	3.70	0.57
Nagaland	0.20	0.81	1.22	1.30	1.21
Odisha	0.39	0.38	0.32	0.60	0.34
Puducherry	(0.02)	0.03	(0.02)	0.13	0.97
Punjab	0.53	0.65	0.48	(0.07)	0.17
Rajasthan	1.83	1.79	1.49	1.50	1.49
Sikkim	2.09	1.20	0.25	0.02	1.71
Tamil Nadu	0.67	0.50	1.41	1.80	1.75
Telangana	0.74	1.23	1.11	1.38	1.09
Tripura	0.42	0.10	(0.08)	(0.14)	0.30
Uttar Pradesh	0.29	0.33	0.42	0.52	0.32
Uttarakhand	0.10	0.24	0.18	0.56	0.21
West Bengal	0.52	0.36	(0.01)	0.10	0.22
Grand Total	0.54	0.59	0.49	0.66	0.50

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1434
ANSWERED ON 01.08.2023

CLARIFICATION REGARDING FUNCTIONING OF CERC AND APTEL

1434 SHRI P. WILSON:

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

- (a) the reasons as to why Central Electricity Regulatory Commission (CERC) Members are acting detrimental to the interest of Distribution companies and the interest of southern states by not declaring transmission lines as national assets despite directions issued by the Ministry on 30th may, 2022;
- (b) whether the Ministry has taken cognisance of the fact that CERC does not have representation from the Southern States especially Tamil Nadu thereby neglecting the interests of the Southern region and that biased CERC orders are leading to heavy losses to the State Governments; and
- (c) the steps taken to fill up the judicial vacancies, staff members and infrastructure issues in Appellate Tribunal for Electricity (APTEL)?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : Ministry of Power vide letter dated 30.05.2022 (enclosed at **Annexure**) had requested CERC to consider transmission charges of all HVDC inter-regional links under National Component provided there is certain quantum of bi-directional power flow through the concerned HVDC inter-regional link, in consultation with stakeholders including POSOCO (Now Grid-India), CEA and CTU. In this regard, CERC is in the process of finalizing draft Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) (Third Amendment) Regulations 2023, which has been published on 12.06.2023, proposing sharing of transmission charges of all inter-regional HVDC Transmission Systems under 'National Component' based on bi-directional flow of power in HVDC Transmission Systems.

(b) : Chairperson and Members of CERC are appointed as per relevant provisions of Electricity Act, 2003. CERC takes decisions safeguarding consumers' interest and keeping in view the national perspective. Equal opportunities are given to all the stakeholders including Southern region States during the course of drafting of regulations and in petitions filed before the Commission.

(c) : One post of Technical Member (Electricity) is vacant w.e.f. 29.11.2021 and one post of Judicial Member is vacant w.e.f. 04.12.2022 in APTEL. The process for filling up of both the vacancies is under process. As regards, the other vacant positions in APTEL, the process for filling up the vacancies is under process in APTEL. Vacancy circular for the post of Judicial Member was issued on 29.4.2022. As required, the Search-cum-selection Committee was notified on 2.12.2022. The Committee has shortlisted some candidates to be interacted after certain mandatory clearances.

APTEL is having its rented office premises in Delhi and have sufficient infrastructure for running the court proceedings.

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1434 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

No.2/5/2022-Trans
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg, New Delhi

Dated: 30th May, 2022

To,

Secretary,
Central Electricity Regulatory Commission
3 rd& 4 th Floor, Chanderlok Building,
36, Janpath, New Delhi – 110001

Sub: Declaration of Raigarh-Pugalur-Trissur HVDC line as National Component

Sir,

I am directed to say that references have been received from Hon'ble Chief Ministers of Karnataka and Tamilnadu on declaration of ± 800 kV, 6000 MW Raigarh – Pugalur-Thrissur HVDC transmission system (4000 MW terminal at Pugalur and 2000 MW at Thrissur) as National & Strategic Component and transmission charges for the system to be shared under “National Component” as per CERC (Sharing of Transmission Charges and Losses) Regulation 2020.

2. The matter has been examined in the Ministry in consultation with Central Transmission Utility of India (CTUIL) and Power System Operation Corporation (POSOCO). It has been observed that

(i) As per existing CERC (Sharing of Transmission Charges and Losses) Regulation 2020, transmission charges of all HVDC back to back substations are under National Component and shared by Designated Interstate Transmission Customers (DICs). For HVDC links, 70% of the charges is under Regional component and are shared by Regional beneficiaries and 30% under National Component, and shared by all beneficiaries, except for following 2 links, where 100% charges are under National Component:

- Biswanath-Chariali/Alipurduar-Agra HVDC transmission system
- Mundra-Mahendragarh 2500 MW HVDC transmission system corresponding to 1005 MW capacity

ii) As per existing CERC Sharing Regulations 2020, 70% transmission charges for Raigarh-Pugalur-Thrissur system is under Regional Component and 30% is under National Component.

iii) ± 800 kV, 6000 MW Raigarh – Pugalur-Thrissur HVDC transmission system (4000 MW terminal at Pugalur and 2000 MW at Thrissur along with 5 ac links) was planned to facilitate direct interconnection between pit head generating stations in Chhattisgarh and load centres in Southern Region and primarily meant for supply power to Southern Region. 4 poles of Raigarh-Pugalur were commissioned from Sept 2020- Oct 2021, whereas 2 poles of Pugalur-Thrissur were commissioned from March 2021-June 2021.

iv) Power flow pattern through this link from April 2021-March 2022 is enclosed. During the period, power flow from Western Region (WR) to Southern Region (SR) is at 64%, while power flow from SR to WR is 36%. With the commissioning of more RE generating Stations in Southern Region, power from SR to WR may also increase.

3. Thus.c Raigarh – Pugalur-Thrissur HVDC transmission system is benefitting both WR and SR. Therefore, it appears that there is a case for considering the above transmission system under "National Component" as per CERC (Sharing of Transmission Charges and Losses) Regulations 2020. However, considering that there are other inter-regional HVDC links, it will be prudent to consider any HVDC link under National component as per CERC Sharing Region 2020.

4. Accordingly, CERC is requested to consider transmission charges of all HVDC inter-regional links under National Component [100% transmission charges to be borne by all Designated Inter State Transmission Customers], provided that

i) There is certain quantum of bi-directional power flow through the concerned HVDC inter-regional link

ii) The quantum of bi-direction power flow [for considering 100% of transmission charges of the link under National Component] may be decided by CERC in consultation with stakeholders including POSOCO, CEA and CTU.

5. This issues with the approval of competent authority.

Yours faithfully,
-sd-

(Bihari Lal)
Under Secretary (Trans)
E-mail: transdesk-mop@nic.in
Telefax: 011-23325242

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1435
ANSWERED ON 01.08.2023

TIME-OF-DAY TARIFF SYSTEM

1435 SHRI M. SHANMUGAM:
SHRI VAIKO:

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

- (a) whether the Ministry is proposing to roll out Time-of-Day (ToD) tariff system;
- (b) if so, the details thereof;
- (c) whether it would be applicable for commercial and domestic consumers, if so, the details thereof;
- (d) whether the electricity tariff would be costlier for the consumers and if so, the details thereof;
- (e) whether any views/suggestions have been sought on this proposal from the stakeholders, if so, the response thereof; and
- (f) if not, the reasons therefor?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) to (d) : Ministry of Power vide notification dated 14.06.2023 has issued the Electricity (Rights of Consumers) Amendment Rules, 2023 wherein the rule for Time of Day (ToD) Tariff has also been specified. The main features of these Rules are as under:

- i. ToD tariff for Commercial and Industrial consumers having maximum demand more than 10kW shall be made effective from a date not later than 1st April, 2024 and for other consumers except agricultural consumers, the ToD tariff shall be made effective not later than 1stApril, 2025.
- ii. ToD tariff shall be made effective immediately after installation of smart meters for the consumers.
- iii. ToD tariff, during the peak period of the day, for Commercial and Industrial consumers shall not be less than 1.20 times the normal tariff and for other consumers it shall not be less than 1.10 times the normal tariff.
- iv. Tariff for solar hours, of the day, to be specified by the State Commission shall be at least twenty percent (20%) less than the normal tariff for that category of consumers.

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- v. ToD tariff shall be applicable on energy charge component of the normal tariff.
 - vi. The duration of peak hours shall not be more than solar hours as notified by the concerned State Electricity Regulatory Commission or State Load Despatch Centre and the duration of solar hours shall be eight hours in a day as specified by the State Commission .
- (e) & (f) :** The draft Rules were circulated for comments of stakeholders on 20.04.2023. The views/suggestions received were examined and suitably incorporated in the aforesaid Rules.

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1436
ANSWERED ON 01.08.2023

SAMARTH MISSION TO REDUCE AIR POLLUTION FROM STUBBLE BURNING

1436 #SHRI SURENDRA SINGH NAGAR:
SHRI MOHAMMED NADIMUL HAQUE:
DR. FAUZIA KHAN:

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

- (a) whether Government has information on the number of power plants successfully implementing the mandate to use 5 per cent biomass pellets in co-firing with coal, as per the revised biomass policy;
- (b) if so, the details thereof and if not, the reasons therefor;
- (c) whether Government has taken any initiatives to ensure the availability and procurement of biomass pellets for co-firing in Thermal Power Plants (TPPs); and
- (d) if so, the agri residues-based biomass that has been co-fired in coal based thermal power plants in metric tonnes till May 2023, along with State/UT-wise details and if not, the reasons therefor?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) & (b) : There are 47 number of Thermal Power Plants which have carried out co-firing of agro residue based biomass pellets with coal. Ministry of Power issued modification on 16.06.2023 to revise the biomass policy dated 08.10.2021 and now it mandates 5% biomass co-firing in Thermal Power Plants (TPPs) from FY 2024-25. This obligation shall increase to 7% from FY 2025-26.

(c) : The Government has taken many initiatives to ensure the availability and procurement of biomass pellets for co-firing in TPPs like, Finance Assistance Schemes by MNRE and CPCB have been issued for biomass pellet manufacturing units, Reserve Bank of India (RBI) has approved 'Biomass pellet manufacturing' as an eligible activity under Priority Sector Lending (PSL), Procurement Provision of Biomass Category has been created on GeM portal, Revised Model long term contract for Biomass supply was issued by MOP, Vendor database finalized and listed on SAMARTH website, awareness programmes & Advertisement Campaign were carried out, Provision of Udyam Aadhaar on National Single Window System, Bankable Model Project Report for Biomass Pellet Plants etc.

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Further, MoP through a policy Addendum dated 03-05-2023 has indicated the various type of various agro residues such as stubble/straw/stalk/husk which are surplus and not being used as animal fodder for making the biomass pellets. This includes agro-residue obtained from crops like Paddy, Soya, Arhar, Gwar, Cotton, Gram, Jawar, Bajra, Moong, Mustard, Sesame, Til, Maize, Sunflower, Jute, Coffee, etc. as well as Groundnut Shell, Coconut Shell, Castor Seed Shell etc.

In addition, pellets made from the following agro product/crop/waste can also be used for co-firing in TPPs viz Bamboo and its by-products, Horticulture waste such as dry leaves and trimmings obtained from maintenance & pruning of trees and plants and other biomass such as Pine Cone/Needle, Elephant Grass, Sarkanda, etc.

(d) : Approximately 1,64,976 Metric Tonnes of agri residues-based biomass has been co-fired in 47 number of coal based thermal power plants till May 2023. State-wise list of thermal power plants co-firing above biomass pellets is at **Annexure**.

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 1436 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

State-wise details of Biomass usage in all TPPs in the country till May' 2023

Sl. No.	State	Name of the Plant	Capacity (MW)	Cumulative Biomass usage (Metric Tonne)	State-wise Biomass usage (Metric Tonne)
1	Uttar Pradesh	National Capital Power Station, Dadri, UP	1820	20617	70977
2		Harduaganj TPS, UP	1265	7392	
3		Feroze Gandhi Unchahar Thermal Power Station, UP	1550	9486	
4		Tanda Thermal Power Station, Ambedkar Nagar, UP	1760	3806	
5		Mahan Al. Unit- CPP, UP	900	29676	
6	Haryana	Yamuna Nagar TPS, Haryana	600	455	20969
7		Rajiv Gandhi TPS, Hisar, Haryana	1200	95	
8		IGSTPP, Jhajjar, Haryana	1500	16008	
9		Mahatma Gandhi TPS, Jhajjar, Haryana	1320	4411	
10	Punjab	Nabha Power Limited (NPL), Punjab	1400	30	180
11		Guru Gobind Singh Super Thermal Plant Ropar (GGSSTP), Ropar, Punjab	840	61	
12		Guru Hargobind Thermal Plant (GHTP), Lehra Mohabbat, Punjab	920	39	
13		TSPL, Mansa, Punjab	1980	50	
14	Maharashtra	Mauda Super Thermal Power Station, Nagpur, MH	2320	24167	27349
15		Solapur Super Thermal Power Station, Solapur, MH	1320	3060	
16		Dhariwal Thermal Power Plant Chandrapur, MH	600	87	
17		GMR Warora Energy Limited, Maharashtra	600	20	
18		JSW Energy - Ratnagiri Maharashtra	1200	5	
19		Sai Wardha Power Generation Limited, MH	540	10	
20	Karnataka	Kudgi Super Thermal Power Station, Bijapur, Karnataka	2400	1912	2248
21		JSW Energy - TPP Bellary, Karnataka	860	336	
22	Andhra Pradesh	Simhadri Super Thermal Power Station, AP	2000	4551	4551
23	Chhattisgarh	LARA Super Thermal Power Station, Raigarh, CG	1600	489	11464
24		Sipat Super Thermal Power Station, Bilaspur, CG	2980	3882	
25		Jindal super thermal power plant Tamnar, CG	3400	24	
26		Raipur Energen Limited, CG	1370	77	
27		Badadarha TPP, CG	1200	25	
28		Raigarh Energy Generation Ltd, CG	600	25	
29		Bharat Aluminum Company Limited, CG	1740	6942	

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30	Madhya Pradesh	Gadarwara Super Thermal Power Station, MP	1600	3140	17603
31		Khargone Super Thermal Power Station, , MP	1320	13417	
32		Jaypee Nigrie super Thermal power plant, MP	1320	577	
33		Jaypee Bina TPS, MP	500	425	
34		Sasan Power Ltd Madhya Pradesh	3960	44	
35	Bihar	Kahalgaon Super Thermal Power Station, Bihar	2340	10	10
36	West Bengal	Budge Budge Thermal Power station, WB	750	181	896
37		Haldia Thermal Power plant, WB	600	90	
38		Farakka super thermal Power plant, Murshidabad, WB	2100	77	
39		Durgapur Steel Thermal Power Station (DSTPS)	1000	501	
40		Bakreswar Thermal power station, WB	1050	22	
41		Sagardighi TPS, WB	1600	25	
42	Rajasthan	Adani Power Rajasthan Limited, Rajasthan	1320	111	7927
43		Shree Mega Power Bewar (CFBC), RJ	344	7816	
44	Odisha	Jharsuguda Captive Power, Odisha	1215	44	64
45		GMR Kamal Ganga, Odisha	700	20	
46	Tamil Nadu	OPG Power Generation Pvt Ltd, Tamil Nādu	420	715	715
47	Jharkhand	Jojobera Power Plant, Jharkhand	427.5	23	23
Grand Total			64351.5	164976	164976

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1437
ANSWERED ON 01.08.2023

POWER GENERATION

1437 SHRI K.C. VENUGOPAL:

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

- (a) the details of the power generated through various means/sources in the country, State/UT-wise;
- (b) the steps taken/proposed to be taken by Government to enhance the power production in the country to meet the rising demand of power; and
- (c) the States which levy tax on the use of water for the generation of electricity?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : The State-wise details of electricity generation through various sources of energy in the country during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023) are given at **Annexure**.

(b) : In order to enhance the power production, 18 numbers of coal based thermal power projects having total capacity of 25440 MW, one (1) gas based thermal power project having capacity of 370 MW and 42 numbers of hydro-electric projects (above 25 MW) having total capacity of 18033.5 MW are under construction in the country as on 30th June 2023. Further, Nuclear capacity totalling to 8000 MW is under various stages of construction. Also, 22840 MW additional coal based thermal capacity has been planned by 2030, out of which 15300 MW will be under Central Sector and 7540 MW under State Sector.

(c) : Four (4) States / UTs have imposed water tax / water usage charges on non-consumptive usage of water:

- (i) UT of Jammu and Kashmir and UT of Ladakh (erstwhile State of Jammu and Kashmir)
- (ii) Uttarakhand
- (iii) Sikkim
- (iv) Himachal Pradesh

ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1437 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

The State-wise details of electricity generation through various sources of energy in the country during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023)

(in GWh)

States	2022-23					2023-24 (Apr to May)				
	THERMAL	NUCLEAR	HYDRO	RENEWABLE	TOTAL	THERMAL	NUCLEAR	HYDRO	RENEW-ABLE	TOTAL
Chandigarh	0.00	0.00	0.00	12.61	12.61	0.00	0.00	0.00	2.95	2.95
DELHI	3784.30	0.00	0.00	530.20	4314.50	370.67	0.00	0.00	110.26	480.93
HARYANA	32139.27	0.00	0.00	1419.73	33559.00	4380.57	0.00	0.00	237.04	4617.61
HIMACHAL PRADESH	0.00	0.00	38666.98	2912.95	41579.93	0.00	0.00	4830.43	483.87	5314.30
JAMMU AND KASHMIR	0.00	0.00	16777.42	393.20	17170.62	0.00	0.00	3531.31	100.98	3632.29
LADAKH	0.00	0.00	402.78	0.00	402.78	0.00	0.00	35.77	0.00	35.77
PUNJAB	31506.16	0.00	4399.65	4169.59	40075.40	5411.41	0.00	537.09	928.25	6876.75
RAJASTHAN	57418.72	6587.27	967.43	40990.05	105963.47	9700.09	1216.56	6.24	8514.47	19437.36
UTTAR PRADESH	152063.22	3192.62	974.04	7217.18	163447.06	25347.83	586.04	53.94	1382.51	27370.32
UTTARAKHAND	0.00	0.00	15435.77	933.72	16369.49	199.76	0.00	1664.47	155.62	2019.85
CHHATTISGARH	142599.20	0.00	237.37	2003.05	144839.62	28152.59	0.00	34.03	389.64	28576.26
GOA	0.00	0.00	0.00	19.96	19.96	0.00	0.00	0.00	8.93	8.93
GUJARAT	55481.62	3639.91	6133.14	29762.63	95017.30	12803.29	636.84	266.76	7739.67	21446.56
MADHYA PRADESH	135838.47	0.00	7309.07	8872.72	152020.26	24228.53	0.00	382.69	1730.73	26341.95
MAHARASHTRA	126907.03	8985.48	5894.29	17206.59	158993.39	23695.17	1077.21	1481.01	2583.53	28836.92
ANDHRA PRADESH	61541.93	0.00	3747.58	16411.91	81701.42	12359.14	0.00	242.88	2546.52	15148.54
KARNATAKA	35014.30	7443.24	13157.34	29575.44	85190.32	7612.26	1251.78	2004.77	4515.86	15384.67
KERALA	0.12	0.00	7989.00	1946.26	9935.38	0.00	0.00	1243.44	312.15	1555.59
PUDUCHERRY	233.07	0.00	0.00	12.24	245.31	40.75	0.00	0.00	2.04	42.79
TAMIL NADU	67083.23	16012.57	5965.77	27626.45	116688.02	13321.76	2239.93	477.38	3578.07	19617.14
TELANGANA	50738.20	0.00	6010.07	7429.89	64178.16	9494.59	0.00	106.60	1373.82	10975.01
LAKSHDWEEP	15.02	0.00	0.00	0.10	15.12	11.66	0.00	0.00	0.02	11.68
ANDAMAN NICOBAR	214.57	0.00	0.00	37.88	252.45	61.01	0.00	0.00	5.79	66.80
BIHAR	55200.21	0.00	0.00	288.85	55489.06	9832.35	0.00	0.00	56.53	9888.88
JHARKHAND	30472.78	0.00	305.47	19.70	30797.95	5821.13	0.00	14.59	2.94	5838.66
WEST BENGAL	87612.45	0.00	3423.73	1959.12	92995.30	15891.14	0.00	415.98	326.63	16633.75
ODISHA	64874.24	0.00	5462.81	1192.10	71529.15	11684.39	0.00	770.41	195.86	12650.66
SIKKIM	0.00	0.00	11696.79	12.35	11709.14	0.00	0.00	1461.52	2.06	1463.58
ARUNACHAL PRADESH	0.00	0.00	4820.94	24.85	4845.79	0.00	0.00	483.41	0.52	483.93
ASSAM	8393.08	0.00	481.60	279.01	9153.69	1473.21	0.00	29.95	60.32	1563.48
MANIPUR	0.00	0.00	477.98	8.79	486.77	0.00	0.00	12.71	2.57	15.28
MEGHALAYA	0.00	0.00	980.25	72.16	1052.41	0.00	0.00	84.66	8.66	93.32
MIZORAM	0.00	0.00	204.13	62.27	266.40	0.00	0.00	12.47	16.52	28.99
NAGALAND	0.00	0.00	177.37	111.95	289.32	0.00	0.00	3.14	7.06	10.20
TRIPURA	7079.48	0.00	0.00	6.58	7086.06	1195.46	0.00	0.00	1.08	1196.54
Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	30.62	30.62	0.00	0.00	0.00	5.09	5.09
BHUTAN IMPORT	0.00	0.00	6742.40	0.00	6742.40	0.00	0.00	190.00	0.00	190.00
Grand Total	1206210.67	45861.09	168841.17	203552.68	1624465.61	223088.76	7008.36	20377.65	37388.56	287863.33

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1438
ANSWERED ON 01.08.2023

**DISTRIBUTION OF ENERGY THROUGH DIFFERENT SOURCES OF ENERGY
IN THE COUNTRY**

1438 #SHRI RAJENDRA GEHLOT:

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

- (a) the total distribution of energy from different sources in the country, State-wise;
- (b) the details of the regions having the least share in the production and use of renewable sources of energy in the country; and
- (c) the quantum of amount received through the export of both renewable and non-renewable energy during each of the last three years?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : The State-wise details of electricity generation through various sources of energy in the country during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023) are **given at Annexure-I.**

(b) : North-East Region has least share in production and usage of renewable sources of Energy in the country. The details of region-wise and State-wise electricity production from renewable sources during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023) are **given at Annexure-II.**

(c) : The details of quantum of energy Imported/Exported by India from various neighbouring countries are given at **Annexure-III.**

ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 1438 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

The State-wise details of electricity generation through various sources of energy in the country during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023)

(in GWh)

States	2022-23					2023-24 (Apr to May)				
	THERMAL	NUCLEAR	HYDRO	RENEW-ABLE	TOTAL	THERMAL	NUCLEAR	HYDRO	RENEW-ABLE	TOTAL
Chandigarh	0.00	0.00	0.00	12.61	12.61	0.00	0.00	0.00	2.95	2.95
DELHI	3784.30	0.00	0.00	530.20	4314.50	370.67	0.00	0.00	110.26	480.93
HARYANA	32139.27	0.00	0.00	1419.73	33559.00	4380.57	0.00	0.00	237.04	4617.61
HIMACHAL PRADESH	0.00	0.00	38666.98	2912.95	41579.93	0.00	0.00	4830.43	483.87	5314.30
JAMMU AND KASHMIR	0.00	0.00	16777.42	393.20	17170.62	0.00	0.00	3531.31	100.98	3632.29
LADAKH	0.00	0.00	402.78	0.00	402.78	0.00	0.00	35.77	0.00	35.77
PUNJAB	31506.16	0.00	4399.65	4169.59	40075.40	5411.41	0.00	537.09	928.25	6876.75
RAJASTHAN	57418.72	6587.27	967.43	40990.05	105963.47	9700.09	1216.56	6.24	8514.47	19437.36
UTTAR PRADESH	152063.22	3192.62	974.04	7217.18	163447.06	25347.83	586.04	53.94	1382.51	27370.32
UTTARAKHAND	0.00	0.00	15435.77	933.72	16369.49	199.76	0.00	1664.47	155.62	2019.85
CHHATTISGARH	142599.20	0.00	237.37	2003.05	144839.62	28152.59	0.00	34.03	389.64	28576.26
GOA	0.00	0.00	0.00	19.96	19.96	0.00	0.00	0.00	8.93	8.93
GUJARAT	55481.62	3639.91	6133.14	29762.63	95017.30	12803.29	636.84	266.76	7739.67	21446.56
MADHYA PRADESH	135838.47	0.00	7309.07	8872.72	152020.26	24228.53	0.00	382.69	1730.73	26341.95
MAHARASHTRA	126907.03	8985.48	5894.29	17206.59	158993.39	23695.17	1077.21	1481.01	2583.53	28836.92
ANDHRA PRADESH	61541.93	0.00	3747.58	16411.91	81701.42	12359.14	0.00	242.88	2546.52	15148.54
KARNATAKA	35014.30	7443.24	13157.34	29575.44	85190.32	7612.26	1251.78	2004.77	4515.86	15384.67
KERALA	0.12	0.00	7989.00	1946.26	9935.38	0.00	0.00	1243.44	312.15	1555.59
PUDUCHERRY	233.07	0.00	0.00	12.24	245.31	40.75	0.00	0.00	2.04	42.79
TAMIL NADU	67083.23	16012.57	5965.77	27626.45	116688.02	13321.76	2239.93	477.38	3578.07	19617.14
TELANGANA	50738.20	0.00	6010.07	7429.89	64178.16	9494.59	0.00	106.60	1373.82	10975.01
LAKSHDWEEP	15.02	0.00	0.00	0.10	15.12	11.66	0.00	0.00	0.02	11.68
ANDAMAN NICOBAR	214.57	0.00	0.00	37.88	252.45	61.01	0.00	0.00	5.79	66.80
BIHAR	55200.21	0.00	0.00	288.85	55489.06	9832.35	0.00	0.00	56.53	9888.88
JHARKHAND	30472.78	0.00	305.47	19.70	30797.95	5821.13	0.00	14.59	2.94	5838.66
WEST BENGAL	87612.45	0.00	3423.73	1959.12	92995.30	15891.14	0.00	415.98	326.63	16633.75
ODISHA	64874.24	0.00	5462.81	1192.10	71529.15	11684.39	0.00	770.41	195.86	12650.66
SIKKIM	0.00	0.00	11696.79	12.35	11709.14	0.00	0.00	1461.52	2.06	1463.58
ARUNACHAL PRADESH	0.00	0.00	4820.94	24.85	4845.79	0.00	0.00	483.41	0.52	483.93
ASSAM	8393.08	0.00	481.60	279.01	9153.69	1473.21	0.00	29.95	60.32	1563.48
MANIPUR	0.00	0.00	477.98	8.79	486.77	0.00	0.00	12.71	2.57	15.28
MEGHALAYA	0.00	0.00	980.25	72.16	1052.41	0.00	0.00	84.66	8.66	93.32
MIZORAM	0.00	0.00	204.13	62.27	266.40	0.00	0.00	12.47	16.52	28.99
NAGALAND	0.00	0.00	177.37	111.95	289.32	0.00	0.00	3.14	7.06	10.20
TRIPURA	7079.48	0.00	0.00	6.58	7086.06	1195.46	0.00	0.00	1.08	1196.54
Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	30.62	30.62	0.00	0.00	0.00	5.09	5.09
BHUTAN IMPORT	0.00	0.00	6742.40	0.00	6742.40	0.00	0.00	190.00	0.00	190.00
Grand Total	1206210.67	45861.09	168841.17	203552.68	1624465.61	223088.76	7008.36	20377.65	37388.56	287863.33

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 1438 ANSWERED IN THE RAJYA SABHA ON 01.08.2023

The details of region-wise and State-wise electricity production from renewable sources during the last year i.e. 2022-23 and the current year 2023-24 (upto May, 2023)

(in GWh)

States	2022-23			2023-24 (Apr to May)		
	HYDRO	RENEWABLE	TOTAL	HYDRO	RENEWABLE	TOTAL
Chandigarh	0.00	12.61	12.61	0.00	2.95	2.95
DELHI	0.00	530.20	530.20	0.00	110.26	110.26
HARYANA	0.00	1419.73	1419.73	0.00	237.04	237.04
HIMACHAL PRADESH	38666.98	2912.95	41579.93	4830.43	483.87	5314.30
JAMMU AND KASHMIR	16777.42	393.20	17170.62	3531.31	100.98	3632.29
LADAKH	402.78	0.00	402.78	35.77	0.00	35.77
PUNJAB	4399.65	4169.59	8569.24	537.09	928.25	1465.34
RAJASTHAN	967.43	40990.05	41957.48	6.24	8514.47	8520.71
UTTAR PRADESH	974.04	7217.18	8191.22	53.94	1382.51	1436.45
UTTARAKHAND	15435.77	933.72	16369.49	1664.47	155.62	1820.09
NORTHERN REGION	77624.07	58579.22	136203.29	10659.25	11915.95	22575.20
CHHATTISGARH	237.37	2003.05	2240.42	34.03	389.64	423.67
GOA	0.00	19.96	19.96	0.00	8.93	8.93
GUJARAT	6133.14	29762.63	35895.77	266.76	7739.67	8006.43
MADHYA PRADESH	7309.07	8872.72	16181.79	382.69	1730.73	2113.42
MAHARASHTRA	5894.29	17206.59	23100.88	1481.01	2583.53	4064.54
Dadra and Nagar Haveli and Daman and Diu	0.00	30.62	30.62	0.00	5.09	5.09
WESTERN REGION	19573.87	57895.56	77469.43	2164.49	12457.59	14622.08
ANDHRA PRADESH	3747.58	16411.91	20159.49	242.88	2546.52	2789.40
KARNATAKA	13157.34	29575.44	42732.78	2004.77	4515.86	6520.63
KERALA	7989.00	1946.26	9935.26	1243.44	312.15	1555.59
PUDUCHERRY	0.00	12.24	12.24	0.00	2.04	2.04
TAMIL NADU	5965.77	27626.45	33592.22	477.38	3578.07	4055.45
TELANGANA	6010.07	7429.89	13439.96	106.60	1373.82	1480.42
LAKSHDWEAP	0.00	0.10	0.10	0.00	0.02	0.02
SOUTHERN REGION	36869.76	83002.29	119872.05	4075.07	12328.48	16403.55
ANDAMAN NICOBAR	0.00	37.88	37.88	0.00	5.79	5.79
BIHAR	0.00	288.85	288.85	0.00	56.53	56.53
JHARKHAND	305.47	19.70	325.17	14.59	2.94	17.53
WEST BENGAL	3423.73	1959.12	5382.85	415.98	326.63	742.61
ODISHA	5462.81	1192.10	6654.91	770.41	195.86	966.27
SIKKIM	11696.79	12.35	11709.14	1461.52	2.06	1463.58
EASTERN REGION	20888.80	3510.00	24398.80	2662.50	589.81	3252.31
ARUNACHAL PRADESH	4820.94	24.85	4845.79	483.41	0.52	483.93
ASSAM	481.60	279.01	760.61	29.95	60.32	90.27
MANIPUR	477.98	8.79	486.77	12.71	2.57	15.28
MEGHALAYA	980.25	72.16	1052.41	84.66	8.66	93.32
MIZORAM	204.13	62.27	266.40	12.47	16.52	28.99
NAGALAND	177.37	111.95	289.32	3.14	7.06	10.20
TRIPURA	0.00	6.58	6.58	0.00	1.08	1.08
BHUTAN IMPORT	6742.40	0.00	6742.40	190.00	0.00	190.00
NORTH EASTERN REGION	13884.67	565.60	14450.27	816.34	96.74	913.08
Grand Total	168841.17	203552.68	372393.85	20377.65	37388.56	57766.21

ANNEXURE-III**ANNEXURE REFERRED TO IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 1438 ANSWERED IN THE RAJYA SABHA ON 01.08.2023**

The details of quantum of Energy Imported/ Exported by India from various neighbouring countries are given below:

Financial Year	Bhutan		Nepal		Bangladesh	Myanmar
	Energy Exported MU	Energy Imported MU	Energy Exported MU	Energy Imported MU	Energy Exported MU	Energy Exported MU
Year 2020-21	0	9318	1866	0	7552	9
Year 2021-22	138	7819	2084	164	7322	9
Year 2022-23	200	6580	1421	1263	8622	10
Year 2023-24 (Till June 23)	22	782	703	89	2181	2

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1439
ANSWERED ON 01.08.2023

IMPORTED COAL FOR THERMAL POWER PLANTS

1439 SHRI JAWHAR SIRCAR:

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

- (a) what shortage of coal for thermal power is making it imperative to import more expensive coal to blend in thermal power plants in the last five years;
- (b) the rise in power costs due to imported coal in thermal power plants in that period and estimated for current year;
- (c) the reasons which prevent building up adequate stocks of domestic coal at power plants; and
- (d) whether there is profiteering by certain dominant private players in imported coal and its transport or handling?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) & (b) : Coal, whether domestic or imported, is procured by Thermal Power Plants (DCBs or ICBs) separately and as per their requirements. As Coal is under open general licence (OGL) since 1993, thermal power plants/generators have been regularly importing coal as per their preference (imported coal has high GCV value and therefore is of better quality) and needs based on their commercial prudence. There are a number of Power Plants based exclusively on imported coal. In the Domestic Coal Based plants blending of imported coal varied between 26.5 Million Tonnes in 2011-12 to 48.5 Million Tonnes in 2014-15. Information regarding coal imports by DCBs and ICBs is regularly collected and monitored by CEA.

The import of coal by power plants during the last 5 FYs and the first quarter of the current FY is as under:

All figures in Million Tonnes

Imported Coal Receipt at Coal based Power Plants			
Year	Domestic Coal based Plants (Blending)	Imported Coal based Plants	Total
2018-19	21.4	40.3	61.7
2019-20	23.8	45.5	69.2
2020-21	10.4	35.1	45.5
2021-22	8.1	18.9	27.0
2022-23	35.1	20.5	55.6
2023-24 (April-June)	6.5	7.7	14.2

.....2.

The above table clearly shows that import of coal, for DCBs, was on decline since 2019-20 primarily due to increased availability of domestic coal on account of various policy measures taken to increase domestic coal production. Accordingly, the Ministry of Power, in FY 2020-21, gave advisory to GENCOS to reduce their imports as Ministry of Coal informed that sufficient domestic coal was available. However, from July, 21 onwards the consumption of coal in Thermal Power Plants increased because of increased demand and the supply of domestic coal on a daily basis was less than consumption such that the stocks at Plants end came down from 28.7 Million Tonnes (MT) as on 30.06.2021 to about 8.1 Million Tonnes (MT) as on 30.09.2021. This was only three and half days stock. During this period (Q2 of FY 2021-22), the gap between consumption and supply of domestic coal has been about 2.38 Lakh Tonnes/day. The Ministry of Power, while observing the trend of domestic coal supplies viz-a viz consumption and to ensure non repetition of the situation of critical domestic stocks at the end of Q2, advised all the States Gencos & IPPs, in December 2021, to import coal @4% (by weight) and NTPC/DVC @ 10% (by weight) for meeting their requirements during 2022-23. During the month of April, 2022, the Power Demand and the coal consumption in power plants have grown by about 12 % as compared to April, 2021. In view of the high demand for power and receipt of coal being less than consumption leading to depletion of coal stock, MOP on 28.04.2022 advised States and IPPs to import coal @ 10% (by weight) of their requirement in order to meet the requirements of power generation.

The procurement and payment of the imported coal is done by each Genco separately.

During April-Sep, 2022 (Q1, Q2 of FY 2022-23) the receipt of domestic coal was about 355 MT against the consumption of 385 MT (Dom: 359 MT +Imp: 1.4 x 18.9 MT). If there would have been no import for blending purpose, the coal stock available at the domestic coal based plants, which was about 24 MT at the beginning of the FY 2022-23 would have reduced to ZERO during September, 2022. The gap between supply of domestic coal and consumption of coal was about 1.6 lakh tones/day during first half of FY 2022-23. On the improvement of the situation MOP advised GENCOs on 01.08.2022 to take decision regarding blending at their level taking into account the domestic coal supply and stock position (need based blending) with continuous monitoring of stock levels. However, during September, 2022 to January, 2023, the gap between daily coal consumption and daily arrival of domestic coal ranged from 0.26 Million Tonnes to 0.05 Million Tonnes. Therefore Ministry of Power advised Central, State Gencos and Independent Power Producers (IPPs) on 09.01.2023 to import coal through a transparent competitive procurement for blending so as to have sufficient coal stocks at their power plants for smooth operations till September, 2023.

The cost of generation of electricity is dependent upon the price of coal and cost of freights and in case of blending also the price of the blended imported coal. The price of imported coal is linked with International Indices, source of origin and factors like ocean freight, insurance etc. which vary with international demand supply scenario. Further, every generating company consumes imported coal as per its requirement.

(c) & (d) : Because of blending, the coal stocks at plants have improved. The coal stock available at 165 Domestic Coal Based (DCB) plants, as on 17.07.2023, was 33.4 MT which is sufficient to run these plants for an average of 13 days at 85% Plant Load Factor (PLF). 41.5 Million Tonnes (MT) of imported coal was used for blending between 01.04.2022 and 22.07.2023. This is equivalent to 58.1 Million Tonnes (MT) of domestic coal. If this blending had not happened the stock would have been zero around September, 2022 and remained at zero levels because the gap between supply and consumption continued.

Government has taken following steps to ensure smooth coal supply to power plants for unhindered power generation: -

- I. To address the issues of coal supplies to power sector, an Inter-Ministerial Sub Group comprising of representatives from Ministries of Power, Ministry of Coal, Ministry of Railways, Central Electricity Authority (CEA), Coal India Limited (CIL) and Singareni Collieries Company Limited (SCCL) meet regularly to take various operational decisions to enhance supply of coal to thermal power plants as well as for meeting any contingent situations relating to Power Sector including to alleviate critical coal stock position in power plants.
- II. An inter-ministerial Secretary-level meeting is held regularly to monitor coal stocks.
- III. As per Railways, during 2022-23, the net induction of coal carrying wagons was about 8800 (about 150 rakes). During 2023-24, the likely net induction of coal carrying rakes would be about 200 rakes, which could provide additional 50 rakes/day for coal loading. The expected increase in annual coal transportation capacity on account of wagon induction would be about 70 Million Tonnes (MT). Similarly, likely net induction of coal carrying rakes in 2024-25 is about 250 rakes, which could provide additional 60 rakes/day. The expected increase in annual coal transportation capacity on account of wagon induction would be about 85 MT.
- IV. Railways have identified 40 number of project for augmentation of coal evacuation. Out of 40 projects, 17 number of projects have already been completed and 23 projects are in progress. Out of 23 projects, it is expected that about 18 projects would be completed by 2026-27.
- V. According to Railways, likely increase in coal transportation capacity during 2023-24 and 2024-25 is about 185 MT.

Coal is imported by the Gencos themselves considering their requirement.

GOVERNMENT OF INDIA
MINISTRY OF POWER
RAJYA SABHA
UNSTARRED QUESTION NO.1440
ANSWERED ON 01.08.2023

ELECTRIC COOKING IN RURAL AREAS

1440 SHRI SUSHIL KUMAR GUPTA:

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

- (a) whether Government has drawn any plan to focus on encouraging electric cooking in rural areas;
- (b) whether the Ministry is taking any steps to involve both private and public sector to meet the challenge of expensive appliances for electric cooking;
- (c) if so, the details in this regard; and
- (d) if not, whether the Ministry will give a serious thinking to it, keeping in view the short supply of LPG in future?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) to (d) : (I) Following actions are being taken by Bureau of Energy Efficiency (BEE), a Statutory Body under the Ministry of Power through State Designated Agencies (SDAs) to promote electric cooking in rural areas:-

- (i) Demonstration projects
- (ii) Awareness creation under “Go electric” campaign through capacity building seminars/workshops, roadshows, electronic media etc.

(II) Energy Efficiency Services Limited (EESL), a joint venture company of Public Sector Undertakings (PSUs) under the Ministry of Power is dedicated to make clean cooking solutions more affordable for end beneficiaries and promote their widespread adoption by employing the demand aggregation approach. EESL is preparing three distinct models to encourage the adoption of clean cooking solutions. The initial model involves introducing Induction Cook-Stoves in urban areas. In Tier-2 Cities and Semi-urban regions, the focus is on deploying Grid-connected Solar-based Induction Cook-Stoves. In rural areas, the plan is to introduce Solar-based Induction Cook-Stoves with battery storage.

(III) With an aim to reduce dependency on LPG and to create an environmentally sustainable cooking solution, Indian Oil Corporation (IOC) has developed 3 models of solar based cooktop, namely, “Surya Nutan” which can be of great utility in rural areas against the backdrop of increasing LPG adoption and ensuing domestic availability in Indian market. To cater to exigency of need, all models have been equipped with hybridization option so that grid electricity can also be used for charging and cooking thru Surya Nutan. IOC has empanelled 10 Indian vendors for manufacturing, marketing, installation & providing after sales service for commercial launch of the product.

(IV) Ministry of Power, through BEE, has also launched the voluntary Star Labelling programme for Induction Stove on 1st March 2023. The objective of this initiative is to encourage the adoption of Electric Cooking by promoting use of Energy Efficient Induction hob among the consumers.
