

**GOVERNMENT OF INDIA
MINISTRY OF POWER
LOK SABHA
STARRED QUESTION NO.176
ANSWERED ON 14.12.2023**

POWER GENERATION

***176. SHRIMATI QUEEN OJA:**

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

- (a) whether the Government has any data about the total power generation in the country and if so, the details thereof, State/UT-wise;**
- (b) whether it is a fact that the demand of electricity is increasing due to establishment of new industries and factories in the country and if so, the details thereof; and**
- (c) the steps taken by the Government to augment power generation to meet the excess demand across the country?**

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

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

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) IN RESPECT OF LOK SABHA STARRED QUESTION NO.176 FOR REPLY ON 14.12.2023 REGARDING POWER GENERATION ASKED BY SHRIMATI QUEEN OJA.

(a) : The State/UT wise details of total Power Generation in the country for the year 2022-23 and 2023-24 (up to October, 2023) is given at Annexure-I.

(b) : Yes, Sir, the demand of electricity is increasing in the country. The details of Energy Requirement and Peak Demand during the period from 2018-19 till November 2023 indicating growth in percentage terms is given at Annexure-II.

The details of Industrial Power Consumption during the period from 2018-19 to 2021-22 is given at Annexure-III. There has been growth of 7.18% in industrial power consumption from 2018-19 to 2021-22.

(c) : Government of India have taken following steps to augment power generation to meet the excess demand in the country:

- 1. 20 Nos. of thermal power projects having total capacity of 27,180 MW are under construction in the country. The details of under construction thermal power project in the country are given at Annexure-IV.**
- 2. 33 Nos. of Hydroelectric Projects and Pumped Storage Projects having total capacity of 16768 MW are under construction in the country. The details of under construction Hydroelectric Projects and Pumped Storage power project in the Country are given at Annexure-V.**
- 3. 5 Nos. of Nuclear Power Projects having total capacity of 8000 MW are under construction in the country. The details of under construction Nuclear Power Projects in the Country are given at Annexure-VI.**
- 4. A total RE capacity of 78935 MW is under construction including 50056 MW of Solar projects and 16225 MW of Wind projects.**
- 5. Ministry of Power has notified Guidelines to promote development of Pumped Storage Projects in the country on 10th April, 2023 with proactive support of the State Governments.**
- 6. Waiver of ISTS Charges on the transmission for new Hydro Projects and Pumped Storage Projects.**

7. The Government has taken several measures to promote Renewable energy in the country, including, inter-alia, the following:

- i. Permitting Foreign Direct Investment (FDI) up to 100 percent under the automatic route;**
- ii. Waiver of Inter State Transmission System (ISTS) charges for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025;**
- iii. Declaration of trajectory for Renewable Purchase Obligation (RPO) up to the year 2029-30;**
- iv. Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission to RE developers for installation of RE projects at large scale;**
- v. Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), Solar Rooftop Phase II, 12000 MW CPSU Scheme Phase II;**
- vi. Laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power;**
- vii. Notification of standards for deployment of solar photovoltaic system/devices;**
- viii. Setting up of Project Development Cell for attracting and facilitating investments;**
- ix. Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar PV and Wind Projects;**
- x. Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators;**
- xi. Notification of Promoting Renewable Energy through Green Energy Open Access Rules 2022;**
- xii. National Green Hydrogen Mission launched with an aim to make India a global hub for production, utilization and export of Green Hydrogen and its derivatives; and**

- xiii. Notification of prescribed trajectory for RE power bids to be issued by Renewable Energy Implementation Agencies from FY 2023-24 to FY 2027-28. Under the trajectory, 50 GW/annum of RE bids to be issued.**
- 8. Additional gas-based generation capacity, exclusively, is being tied up by the Government to cater the high peak demand during the summer.**
- 9. Directions has been issued under Section 11 of Electricity Act 2003 to the Imported coal based plants to compulsorily run their plants during peak demand period.**
- 10. Gas based generating stations are instructed to procure adequate fuel (gas) to cater the peak demand requirement during summer season.**
- 11. Coal allocation under SHAKTI policy (Scheme to Harness and Allocate Koyla Transparently in India) has helped in improving domestic coal availability for thermal power stations.**
- 12. Introduction of Real Time Market (RTM), Green Day Ahead Market (GDAM), Green Term Ahead Market (GTAM), High Price Day Ahead Market (HP-DAM) in Power Exchanges. Also, DEEP Portal (Discovery of Efficient Electricity Price) for e-Bidding and e-Reverse for procurement of short-term power by DISCOMs was introduced.**
- 13. To ensure smooth coal supply to power plants for unhindered power generation, Railways, during 2022-23, has done the net induction of 8800 coal carrying wagons (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. Similarly, likely net induction of coal carrying rakes in 2024-25 is about 250 rakes, which could provide additional 60 rakes/day. Railways have identified 40 number of project for augmentation of coal evacuation.**

**ANNEXURE REFERRED TO IN PART (a) OF THE STATEMENT LAID IN REPLY TO
STARRED QUESTION NO. 176 ANSWERED IN THE LOK SABHA ON 14.12.2023
REGARDING POWER GENERATION**

The details of State/UT wise total Power Generation (Conventional + Renewable) in the country for the year 2022-23 and 2023-24 (up to October, 2023)

(fig. in MUs)

Region	State	2023-24 (upto-Oct 23)	2022-23	
		Total Generation	Total Generation	
NR	Chandigarh	8.73	12.6	
	DELHI	2804.93	4314.5	
	HARYANA	18342.80	33559.0	
	HIMACHAL PRADESH	31308.07	41579.9	
	JAMMU AND KASHMIR	13209.89	17170.6	
	LADAKH	307.32	402.8	
	PUNJAB	26014.77	40075.4	
	RAJASTHAN	68911.79	105963.5	
	UTTAR PRADESH	99968.15	163447.1	
	UTTARAKHAND	11157.01	16369.5	
		Dadra and Nagar Haveli and Daman and Diu	16.15	30.6
WR	CHHATTISGARH	95742.91	144839.6	
	GOA	40.77	20.0	
	GUJARAT	80347.46	95017.3	
	MADHYA PRADESH	94862.33	152020.3	
	MAHARASHTRA	98334.71	158993.4	
	SR	ANDHRA PRADESH	54718.62	81701.4
		KARNATAKA	54102.21	85190.3
KERALA		4594.45	9935.4	
LAKSHADWEEP		37.34	15.1	
PUDUCHERRY		152.07	245.3	
TAMIL NADU		75297.73	116688.0	
TELANGANA		37199.36	64178.2	
ER		ANDAMAN NICOBAR	215.43	252.4
	BIHAR	34643.91	55489.1	
	JHARKHAND	20728.50	30798.0	
	ODISHA	41951.26	71529.2	
	SIKKIM	8318.54	11709.1	
	WEST BENGAL	55283.17	92995.3	
NER	ARUNACHAL PRADESH	3329.00	4845.8	
	ASSAM	5760.77	9153.7	
	MANIPUR	189.34	486.8	
	MEGHALAYA	669.25	1052.4	
	MIZORAM	123.35	266.4	
	NAGALAND	205.18	289.3	
	TRIPURA	3897.81	7086.1	
IMPORT	Bhutan (IMP)	4644.00	6742.4	
Grand Total		1047439.04	1624465.6	

**ANNEXURE REFERRED TO IN PART (b) OF THE STATEMENT LAID IN REPLY TO
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REGARDING POWER GENERATION**

Growth in Energy Requirement and Peak Demand since 2018-19

Period	Energy Requirement	Growth in Energy Requirement	Peak Demand	Growth in Peak Demand
	MU	%	MW	%
2018-19	12,74,595	-	1,77,022	-
2019-20	12,91,010	1.3	1,83,804	3.8
2020-21 *	12,75,534	-1.2	1,90,198	3.5
2021-22	13,79,812	8.2	2,03,014	6.7
2022-23	15,11,847	9.6	2,15,888	6.3
2022-23 (Upto Nov.)	10,15,908	-	2,15,888	-
2023-24 (Upto Nov.)	11,02,887	8.6	2,43,271	12.7

* Covid Pandemic Period

ANNEXURE-III**ANNEXURE REFERRED TO IN PART (b) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 176 ANSWERED IN THE LOK SABHA ON 14.12.2023 REGARDING POWER GENERATION**

The details of Industrial Power Consumption during the period from 2018-19 to 2021-22

Category	2018-19	2019-20	2020-21	2021-22	
	Consumption (GWh)	Consumption (GWh)	Consumption (GWh)	Consumption (GWh)	% Growth
Industrial Power	519196	532819	508776	556480	7.18

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REGARDING POWER GENERATION**

The details of under construction thermal power projects in the country

(As on 30-11-2023)

S.No	NAME OF PROJECT	STATE	DEVELOPER	UNIT NO.	CAPACITY (MW)
Central Sector					
1	Barh STPP-I	Bihar	NTPC	U-3	660
2	North Karanpura STPP	Jharkhand	NTPC	U-2	660
				U-3	660
3	Telangana STPP St- I	Telangana	NTPC	U-2	800
4	Talcher TPS, St-III	Odisha	NTPC	U-1	660
				U-2	660
5	Patratu STPP	Jharkhand	PVUNL	U-1	800
				U-2	800
				U-3	800
6	Buxar TPP	Bihar	SJVN	U-1	660
				U-2	660
7	Ghatampur TPP	Uttar Pradesh	NUPPL	U-1	660
				U-2	660
				U-3	660
8	Khurja SCTPP	Uttar Pradesh	THDC	U-1	660
				U-2	660
9	Lara STPP St-II	Chhattisgarh	NTPC	U-1	800
				U-2	800
	Sub Total				12720
State Sector					
10	Ennore SCTPP	Tamil Nadu	TANGEDCO	U-1	660
				U-2	660
11	North Chennai TPP St-III	Tamil Nadu	TANGEDCO	U-1	800
12	Udangudi STPP Stage I	Tamil Nadu	TANGEDCO	U-1	660
				U-2	660
13	Yadadri TPS	Telangana	TSGENCO	U-1	800
				U-2	800
				U-3	800
				U-4	800
				U-5	800

14	Jawaharpur STPP	Uttar Pradesh	UPRVUNL	U-1	660
				U-2	660
15	Obra-C STPP	Uttar Pradesh	UPRVUNL	U-1	660
				U-2	660
16	Panki TPS Extn.	Uttar Pradesh	UPRVUNL	U-1	660
17	Dr.Narla Tata Rao TPS St-V	Andhra Pradesh	APGENCO	U-8	800
18	Bhusawal TPS	Maharashtra	MAHAGENCO	U-6	660
19	Sagardighi Thermal Power Plant Ph-III	West Bengal	WBPDC	U-5	660
Sub Total					12860
Private Sector					
20	Mahan USCTPP Ph-II	Madhya Pradesh	Adani Power	U-1	800
				U-2	800
Sub Total					1600
Grand Total					27180

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REGARDING POWER GENERATION**

The details of under construction Hydroelectric Projects and Pumped Storage power project in the country

As on 30.11.2023

List of Hydro Electric Projects (above 25 MW) under implementation - Sector-wise						
Sl. No	Name of the Project (Executing Agency)	State / UT	District	I.C. (No. X MW.)	Cap. Under Execution (MW)	River/Basin
Central Sector						
1	Subansiri Lower (NHPC)	Arunachal Pradesh/Assam	Lower Subansiri, Ar.Pradesh / Dhemaji, Assam	8x250	2000.00	Subansiri/ Brahmaputra
2	Parbati St. II (NHPC)	Himachal Pradesh	Kullu	4x200	800.00	Parbati/Beas/ Indus
3	Luhri-I (SJVN)	Himachal Pradesh	Kullu/Shimla	2x80+2x25	210.00	Satluj/Indus
4	Dhaulasidh (SJVN)	Himachal Pradesh	Hamirpur/ Kangra	2x33	66.00	Beas/Indus
5	Pakal Dul (CVPPL)	UT of Jammu & Kashmir	Kishtwar	4x250	1000.00	Marusadar/ Chenab / Indus
6	Kiru (CVPPL)	UT of Jammu & Kashmir	Kishtwar	4x156	624.00	Chenab/ Indus
7	Teesta St. VI NHPC	Sikkim	South Sikkim	4x125	500.00	Teesta/ Brahmaputra
8	VishnugadPipalkoti (THDC)	Uttarakhand	Chamoli	4x111	444.00	Alaknanda/ Ganga
9	Naitwar Mori (SJVNL)	Uttarakhand	Uttarkashi	2x30	30.00	Tons/Yamuna/ Ganga
10	TapovanVishnugad (NTPC)	Uttarakhand	Chamoli	4x130	520.00	Dhauliganga / Alaknanda & / Ganga
11	Tehri PSS (THDC)	Uttarakhand	Tehri Garhwal	4x250	1000.00	Bhilangna/ Bhagirathi/ Ganga
12	Rammam-III (NTPC)	West Bengal	Darjeeling	3x40	120.00	Rammam/ Rangit/Teesta Brahmaputra
13	Rangit-IV (NHPC)	Sikkim	West Sikkim	3x40	120.00	Rangit/ Teesta/ Brahmaputra
14	Ratle (RHEPPL / NHPC)	UT of Jammu & Kashmir	Kishtwar	4x205 + 1x30	850.00	Chenab/Indus
15	Kwar (CVPPPL)	UT of Jammu & Kashmir	Kishtwar	4x135	540.00	Chenab/Indus
16	Sunni Dam (SJVN)	Himachal Pradesh	Shimla/Mandi	4x73+1x73+ 1x17	382.00	Satluj/Indus
17	Dibang Multipurpose Project (NHPC)	Arunachal Pradesh	Lower Dibang Valley	12x240	2880.00	Dibang/ Brahmaputra
Sub-Total: Central Sector					12086.00	

	State Sector					
18	Polavaram (APGENCO/ Irrigation Dept., A.P.)	Andhra Pradesh	East & West Godavari	12x80	960.00	Godavari/EFR
19	Lower Kopli (APGCL)	Assam	Dima Hasao & Karbi Anglong	2x55+2x2.5+1x5	120.00	Kopili/ Brahmaputra
20	Uhi-III (BVPCL)	Himachal Pradesh	Mandi	3x33.33	100.00	Uhi/Beas/ Indus
21	Shongtong Karcham (HPPCL)	Himachal Pradesh	Kinnaur	3x150	450.00	Satluj/ Indus
22	Parnai (JKSPDC)	UT of Jammu & Kashmir	Poonch	3x12.5	37.50	Jhelum/ Indus
23	Pallivasal (KSEB)	Kerala	Idukki	2x30	60.00	Mudirapuzha/ Periyar/ Baypore Periyar/ WFR
24	Thottiyar (KSEB)	Kerala	Idukki	1x30+1x10	40.00	Thottiyar/ Periyar/ Baypore Periyar/ WFR
25	Shahpurkandi (PSPCL/ Irrigation Deptt., Pb.)	Punjab	Pathankot	3x33+3x33+1x8	206.00	Ravi/ Indus
26	Kundah Pumped Storage Phase-I,II&III)	Tamil Nadu	Nilgiris	4x125	500.00	Kundah/ Bhavani/ Cauvery/EFR
27	Chanju-III (HPPCL)	Himachal Pradesh	Chamba	3x16	48.00	Chanju Nallah
28	Mankulam (KSEB)	Kerala	Idukki	2x20	40.00	Melachery
39	Lakhwar Multipurpose Project (UJVNL)	Uttarakhand	Dehradun & Tehri Garhwal	3x100	300.00	Yamuna
30	Lower Sileru Extension (APGENCO)	Andhra Pradesh	Alluri Sitharamaraju	2x115	230.00	Sileru/ Godavari
Sub-Total: State Sector					3091.50	
	Private Sector					
31	Tidong-I (Statkraft IPL)	Himachal Pradesh	Kinnaur	3x50	150.00	Tidong/Satluj/ Indus
32	Kutehr (JSW Energy Ltd)	Himachal Pradesh	Chamba	3x80	240.00	Ravi/ Indus
33	Pinnapuram (Greenko AP01 IREP Private Limited)	Andhra Pradesh	Kurnool	4x240+2x120	1200.00	Pennar Basin
Sub-Total: Private Sector					1590.00	
Total:					16767.50	

ANNEXURE-VI**ANNEXURE REFERRED TO IN PART (c) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 176 ANSWERED IN THE LOK SABHA ON 14.12.2023 REGARDING POWER GENERATION**

The details of under construction Nuclear Power Project in the country**As on 30.11.2023**

S.NO.	NAME OF GENERATOR	DEVELOPER	STATE	INSTALLED CAPACITY (MW)
UNDER CONSTRUCTION PROJECTS				
1	KAKRAPARA A.P.S. UNIT 4	NPCIL	GUJARAT	700
2	KUDANKULAM UNIT 3,4,5,6	NPCIL	TAMILNADU	4*1000=4000
3	PFBR NEW UNIT 1	BHAVINI	TAMILNADU	500
4	RAJASTHAN A.P.S. UNIT 7-8	NPCIL	RAJASTHAN	2*700=1400
5	GORAKHPUR UNIT 1,2	NPCIL	HARYANA	2*700=1400
TOTAL				8000
