GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2694
ANSWERED ON 24.03.2025

PERMANENT EMPLOYMENT TO THE PERSONS BELONGING TO THE LANDLESS FAMILIES

2694 # SHRI HARSH MAHAJAN:

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

(a) number of persons belonging to landless families affected in year 2009 under NHPC Chamera-3 project in Chamba district of Himachal Pradesh vide notification number REV(PC)A(10)7/2008 dated 19/01/2009 who have been given permanent employment till date and number of affected people bereft of such employment;

(b) details thereof, including their names and addresses;

(c) by when permanent employment would be provided to the persons belonging to the landless families if permanent employment has not been provided to them till date, the details thereof; and

(d) whether Government has imposed any ban on permanent employment for aforesaid landless affected people, if so, the reasons therefor?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : As per the approved Rehabilitation and Resettlement (R&R) Scheme for Chamera - III Power Station, notified by the Govt. of Himachal Pradesh vide No.: RRO/CBA/R&R Scheme/CHEP-III/2010-4809-18 dated 01/03/2011, one member from each Project Affected Family (PAF) rendered landless is to be provided employment by the Project Authority in the categories of skilled / semi-skilled / unskilled workmen subject to fulfilling the requisite criteria / qualification and as and when any fresh recruitment is done in these categories.

As informed by NHPC Ltd, no fresh recruitment has taken place since the notification of the aforesaid scheme due to the absence of vacancies. However, the PAF / Local people have been employed by NHPC through outsourcing as per their work requirement. At present, 201 workers have been employed in these contract works. In addition, as per NHPC policy, petty contracts upto Rs. 1.25 crore are reserved for PAF / Local people of Chamera – III Power Station. During the F.Y. 2024-25 (till date), the power station has spent about Rs. 3.06 crore on the works awarded to PAF / Local people.

(d) : No.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2695
ANSWERED ON 24.03.2025

RENEWABLE ENERGY TARGETS AND CLEAN ENERGY ADOPTION

2695 SHRI SANJEEV ARORA:

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

(a) the Ministry's current progress in achieving country's renewable energy target of 500 GW non-fossil fuel-based power capacity by 2030, and the amount of gigawatts of renewable energy capacity added so far in the current year;

(b) manner in which Government is addressing the challenges in integration of renewable energy sources into the grid, particularly with regard to solar and wind energy intermittency; and

(c) in light of India's COP26 commitment to achieve net-zero emissions by 2070, specific measures Government is taking to accelerate the adoption of clean energy technologies, including green hydrogen?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : As on 28.02.2025, the country's electricity generation capacity from non-fossil fuel sources was about 223 Giga Watts (GW) including around 215 GW of Renewable Energy (RE) capacity. During the current financial year, around 24 GW RE capacity has been added so far.

(b) : The measures taken by the Government to address the challenges in integration of renewable energy sources into the grid, are placed at **Annexure-I**.

(c) : The measures taken by Government of India towards adoption of clean energy technologies are placed at **Annexure-II.**

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 2695 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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For addressing the integration of Renewable Energy (RE) sources into the national grid to ensure reliability and stability inter alia following initiatives have been taken:

1. Technical Standards for Connectivity,2007 and subsequent amendments, issued by Central Electricity Authority (CEA) have mandates like Low and High Voltage Ride Through (LVRT and HVRT) to avoid outages due to voltage fluctuations, Reactive power capabilities, active power and frequency control, power quality requirements for connecting RE with Grid.

2. Indian Electricity Grid Code, 2023 issued by Central Electricity Regulatory Commission (CERC) have provisions like trial run operation , frequency response requirements and periodic testing.

3. Flexible Operation of Coal based Thermal Power Generating Units Regulations, 2023 issued by CEA mandates coal based thermal power generating units to have minimum power level of forty percent and specified ramp rate capability.

4. A comprehensive policy and regulatory framework has been established to ensure resource adequacy, which includes advance planning for generation capacity addition.

5. 13 Renewable Energy Management Centers have been established in RE rich states and regions for dedicated monitoring, forecasting and scheduling of solar and wind plants.

6. Several key initiatives undertaken for planned development of RE in line with resource adequacy plans, shifting loads to periods of high solar generation, Time of Day Tariff etc.

7. The Central Electricity Authority (CEA) prepared a Transmission Plan for 500 GW of Renewable Energy (RE) by 2030. To enhance grid stability, the plan incorporates use of advanced technologies, and energy storage solutions.

8. A number of state-of– the art Static Synchronous Compensators installed to improve grid reliability and voltage stability.

9. Various initiatives including notification of national framework for Energy Storage Systems (ESS), Issuance of Guidelines to promote development of Pump Storage Projects (PSP), implementation of a Viability Gap Funding (VGF) scheme for 13,200 MWh grid-scale Battery Energy Storage system (BESS) taken for development of ESS.

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 2695 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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Government of India has taken various measures towards **adoption of clean energy technologies** including the following: -

1. 100% Foreign Direct Investment (FDI) permitted under the automatic route for renewable energy projects.

2. Waiver of ISTS (Inter-State Transmission System) charges for renewable and storage projects.

3. Renewable Purchase Obligation (RPO) trajectory has been declared up to 2030.

4. Ultra Mega Renewable Energy Parks established to provide land and transmission infrastructure on a plug-and-play basis.

5. Key government schemes launched, including PM-KUSUM, Solar Rooftop Phase II, and the 12,000 MW CPSU Scheme Phase II.

6. PM Surya Ghar Muft Bijli Yojana for installing rooftop solar for 1 crore households launched.

7. Production Linked Incentive (PLI) scheme "National Programme on High Efficiency Solar PV Modules" for promoting domestic manufacturing capacity of solar PV modules.

8. Green Energy Corridor Scheme facilitating new transmission lines and sub-station capacity for renewable power evacuation.

9. Transmission plan in place for integrating 500 GW of renewable energy capacity by 2030.

10. Standard Bidding Guidelines issued for tariff-based competitive procurement of power from grid-connected renewable and storage projects.

11. LPS (Late Payment Surcharge) Rules, 2022 issued for ensuring timely payments to generators.

12. Green Energy Open Access Rules 2022 notified to promote renewable energy.

13. Green Day Ahead Market (GDAM) and Green Term Ahead Market (GTAM) launched to enable the sale of renewable energy through power exchanges.

14. Promotion of Generation of Electricity from Must Run Power Plants Rules, 2021 notified to ensure optimum utilization of the renewable energy sources.

15. National Green Hydrogen Mission has been launched to facilitate production of Green Hydrogen and its derivatives.

16. VGF scheme launched for development of Off-shore wind energy projects.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2696
ANSWERED ON 24.03.2025

INITIATIVES REGARDING NATIONAL ELECTRICITY PLAN

2696 DR. K. LAXMAN:

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

(a) the key objectives of the National Electricity Plan (2023-2032), and manner in which it will support country's future power demand of 458 GW by 2032;

(b) the role nine new High Voltage Direct Current (HVDC) lines will play in strengthening country's power infrastructure;

(c) manner in which the inter-regional transfer capacity expansion from 119 GW to 168 GW will improve power distribution across States; and

(d) the ways in which the National Electricity Plan will facilitate renewable energy integration and green hydrogen adoption into the grid?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): The National Electricity Plan-Transmission outlines the transmission system required to be added in the country during the period 2023 to 2032, commensurate with the generation capacity addition and growth of electricity demand in the country. The transmission plan includes the addition of central and state transmission systems (220 kV level and above) to meet the projected peak electricity demand of 388 Giga Watt (GW) by the year 2032.

(b): High Voltage Direct Current (HVDC) lines facilitate bulk transfer of power over long distances. New HVDC lines have been primarily planned for transfer of bulk power from Renewable Energy (RE) rich areas to major load centers.

(c): Resources for electricity generation are unevenly distributed across the country. Some states have huge variable RE potential while some states are rich in hydro potential. The increase in Inter-Regional transfer capacity from 119 GW to 168 GW by 2032 would facilitate seamless transfer of power from power surplus regions/states to power deficit regions/states, thereby helping the states to meet their electricity demand.

(d): The National Electricity Plan -Transmission, inter-alia, outlines the transmission system for evacuation of power from major RE potential Zones/ areas. Further, transmission system has also been planned for delivery of power to the Green Hydrogen/Green Ammonia manufacturing potential hubs in the country. The transmission projects associated with integration of RE and for delivery of power to Green Hydrogen manufacturing hubs are under different stages of implementation.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2697
ANSWERED ON 24.03.2025

STUBBLE PELLETS

2697 SHRI RAGHAV CHADHA:

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

(a) whether the Central Government has implemented the mixing of farm stubble pellets upto 10 per cent of the total fuel in a power plant, if so, the details thereof;

(b) whether mixing of farm stubble pellets will affect the efficiency in terms of gross calorific value, if so, the details thereof;

(c) whether NTPC has entered into any tie up or arrangement for bio pellets, if so, the details thereof; and

(d) whether NTPC has planned to expand scheme of mixing of farm stubble pellets gradually in its all plants, if so, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): Ministry of Power issued revised policy on "Biomass Utilization for Power Generation through Co-firing in Coal based Power Plants" in October 2021 which mandated all thermal power plants in the country to use 5 to 7% biomass along with coal for power production. This biomass policy was further modified on 16.06.2023 and mandated 5% biomass co-firing in Thermal Power Plants (TPPs) from FY 2024-25. This obligation shall increase to 7% from FY 2025-26 onwards.

(b) : The mixing of up to 5% biomass along with coal may have very minimal impact on the efficiency of TPPs, as the GCV of biomass pellets is almost of the same range as that of coal.

(c) & (d): NTPC Ltd. procures biomass pellets for all its plants through open tender process. So far, around 8.9 Lakh Metric Ton (LMT) of agro-residue based biomass has been received and co-fired by NTPC across its 16 TPPs. In compliance with the Ministry of Power's Revised Biomass policy issued on 08.10.2021 and further, modified on 16.06.2023, NTPC Ltd is expanding the use of farm stubble biomass pellets along with coal across all its plants.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2698
ANSWERED ON 24.03.2025

NUMBER OF ELECTRICITY CONNECTION OF VILLAGES

2698 SHRI SAMIRUL ISLAM:

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

(a) the number of villages in the country that have no electricity connection;

(b) State-wise data on villages in districts without power connection;

(c) the average rate per unit of electricity in the country; and

(d) a list of the rates per unit of electricity, State-wise?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : Electricity being a concurrent subject, supply and distribution of electricity to the consumers is within the purview of the respective State Government/Power Utility. Government of India has been supporting the States/ UTs under schemes like Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) to improve access and quality of power supply to all consumers. These schemes stand closed as on 31.03.2022.

Under DDUGJY, electrification of all census villages was taken up and a total of 18,374 villages were electrified (State/UT-wise details at **Annexure-I**). Under SAUBHAGYA, as reported by States, electrification of all willing households was completed by 31st March, 2019. A total of 2.86 crore households were electrified during SAUBHAGYA period. (State/UT-wise details at **Annexure-II**)

Government of India is further supporting the States for grid electrification of households left-out during SAUBHAGYA, under the ongoing scheme of Revamped Distribution Sector Scheme (RDSS), launched in July,2021. In addition, all households belonging to Particularly Vulnerable Tribal Group (PVTG) identified under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and households belonging to Scheduled Tribes under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan) are being sanctioned for on-grid electricity connection under RDSS as per the scheme guidelines. Till date, works amounting to Rs. 4,643 Cr. have been sanctioned for electrification of 10,19,030 households (State/UT-wise details placed at **Annexure-III**). All Household electrification works sanctioned under RDSS are to be completed by the sunset date of the scheme.

(c) & (d) : As per the *'Report on 13th Annual Integrated Rating and Ranking:Power Distribution Utilities'* published by Power Finance Corporation (PFC) Limited in February 2025, the Average Cost of Supply (ACS) for FY 2023-24 at the National level is Rs. 7.09/kWh. The State/UT-wise figures for ACS are placed at **Annexure-IV**.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2698 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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State-wise electrification of inhabited census villages under DDUGJY

S. No.	Name of the States	Number of villages electrified
1	Arunachal Pradesh	1,483
2	Assam	2,732
3	Bihar	2,906
4	Chhattisgarh	1,078
5	Himachal Pradesh	28
6	Jammu & Kashmir	129
7	Jharkhand	2,583
8	Karnataka	39
9	Madhya Pradesh	422
10	Maharashtra	80
11	Manipur	366
12	Meghalaya	1,051
13	Mizoram	54
14	Nagaland	78
15	Odisha	3,281
16	Rajasthan	427
17	Tripura	26
18	Uttar Pradesh	1,498
19	Uttarakhand	91
20	West Bengal	22
	Total	**18,374**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2698 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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Households electrified since the launch of SAUBHAGYA scheme including additional households under DDUGJY

S.No.	Name of the States	No of Households electrified
1	Andhra Pradesh*	1,81,930
2	Arunachal Pradesh	47,089
3	Assam	23,26,656
4	Bihar	32,59,041
5	Chhattisgarh	7,92,368
6	Gujarat*	41,317
7	Haryana	54,681
8	Himachal Pradesh	12,891
9	Jammu & Kashmir	3,77,045
10	Jharkhand	17,30,708
11	Karnataka	3,83,798
12	Ladakh	10,456
13	Madhya Pradesh	19,84,264
14	Maharashtra	15,17,922
15	Manipur	1,08,115
16	Meghalaya	2,00,240
17	Mizoram	27,970
18	Nagaland	1,39,516
19	Odisha	24,52,444
20	Puducherry*	912
21	Punjab	3,477
22	Rajasthan	21,27,728
23	Sikkim	14,900
24	Tamil Nadu*	2,170
25	Telangana	5,15,084
26	Tripura	1,39,090
27	Uttar Pradesh	91,80,571
28	Uttarakhand	2,48,751
29	West Bengal	7,32,290
Total		**2,86,13,424**

**Not funded under SAUBHAGYA Scheme*

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2698 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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Household Electrification Works sanctioned under RDSS

[Particularly Vulnerable Tribal Group (PVTG) + Additional Households (HHs) + Vibrant Village Programme (VVP)]

S. No.	Name of State	Sanctioned Outlay (Rs. Crores)	Sanctioned GBS (Rs. Crores)	Total Households Sanctioned
A.	**Addl. HHs Sanctioned under RDSS**			
1	Rajasthan	459.18	275.51	1,90,959
2	Meghalaya	435.7	392.13	50,501
3	Mizoram	79.9	71.91	15,167
4	Nagaland	69.55	62.59	10,004
5	Uttar Pradesh	931.04	558.62	2,51,487
6	Andhra Pradesh	49.24	29.55	15,475
7	Jharkhand	7.47	4.48	872
8	Jammu & Kashmir	77.1	69.39	10,730
9	Bihar	238.86	143.32	35,467
10	Assam	785.55	706.99	1,27,111
11	Arunachal Pradesh	47.11	42.4	6,506
12	Manipur	214.44	193	36,972
13	Chhattisgarh	316.51	189.9	63,161
14	Kerala	0.33	0.2	40
Total (A)		**3,711.98**	**2,739.99**	**8,14,452**
B.	**Electrification works sanctioned under RDSS in Vibrant Villages**			
1	Himachal Pradesh*	6.08	5.47	0
2	Arunachal Pradesh	20.18	18.16	1,683
3	Uttarakhand	13.08	11.77	1,154
Total (B)		**39.34**	**35.41**	**2,837**
C.	**Electrification of PVTG Households through Grid Connectivity under PM-JANMAN**			
C1	**Sanctioned under RDSS**			
1	Andhra Pradesh	88.71	53.23	25,054
2	Bihar	0.28	0.17	51
3	Chhattisgarh	38.17	22.9	7,077
4	Jharkhand	74.13	44.47	12,442
5	Madhya Pradesh	143.39	86.02	29,290
6	Maharashtra	26.61	15.96	8,556
7	Rajasthan	40.34	24.2	17,633
8	Karnataka	3.77	2.26	1,615
9	Kerala	0.86	0.52	345
10	Tamil Nadu	29.89	17.94	10,673
11	Telangana	6.79	4.07	3,884
12	Tripura	61.52	55.37	11,664

13	Uttarakhand	0.6	0.54	669
14	Uttar Pradesh	1.1	0.66	316
Sub Total (C1)		**516.15**	**328.31**	**1,29,269**
C2	**PVTG HH electrification covered under State Plan****			
1	Gujarat	0	0	
2	Odisha	0	0	
3	West Bengal	0	0	
Sub Total (C2)				
Total (C=C1+C2)		**516.15**	**328.31**	**1,29,269**
D.	**Electrification of Tribal Households identified under DA-JGUA**			
D1	**Sanctioned Households**			
1	Andhra Pradesh	19.12	11.47	4,921
2	Arunachal Pradesh	8.2	7.38	1,938
3	Bihar	61.4	36.84	7,117
4	Chhattisgarh	11.98	7.19	2,550
5	Himachal Pradesh	0.55	0.49	100
6	Karnataka	32.13	19.28	4,229
7	Kerala	5.88	3.53	1,097
8	Madhya Pradesh	39.82	23.89	6,493
9	Maharashtra	2.07	1.24	480
10	Telangana	110.73	66.44	26,525
11	Tripura	40.69	36.62	7,677
12	Uttar Pradesh	32.21	19.32	6,867
SubTotal (D1)		**364.77**	**233.69**	**69,994**
D2	**Sanctioned Public Places**			
1	Andhra Pradesh	0.7	0.42	182
2	Arunachal Pradesh	0.04	0.03	9
3	Madhya Pradesh	1.5	0.9	256
4	Telangana	2.89	1.74	672
5	Tripura	2.31	2.08	512
6	Uttar Pradesh	0.13	0.08	30
Sub Total (D2)		**7.58**	**5.26**	**1,661**
Total (D=D1+D2)		**372.34**	**238.95**	**71,655**
E.	**Electrification works sanctioned under Pradhan Mantri Anusuchit Jaati Abhuyday Yojana (PM-AJAY)**			
1	Andhra Pradesh	3.5	2.1	811
2	Madhya Pradesh	0.002	0.001	6
Total (E)		**3.5**	**2.1**	**817**
GrandTotal (A+B+C+D+E)		**4,643.32**	**3,344.75**	**10,19,030**

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ANNEXURE-IV

ANNEXURE REFERRED IN REPLY TO PARTS (c) & (d) OF UNSTARRED QUESTION NO. 2698 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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State wise Average Cost of Supply for FY 2023-24

States/ UTs	Average Cost of Supply (Rs/kWh)
Andaman & Nicobar Islands	30.16
Andhra Pradesh	8.32
Arunachal Pradesh	6.08
Assam	7.81
Bihar	6.82
Chandigarh	Not Available
Chhattisgarh	5.20
Dadra & Nagar Haveli and Daman & Diu	Not Available
Delhi	7.61
Goa	6.35
Gujarat	6.17
Haryana	6.20
Himachal Pradesh	5.23
Jammu & Kashmir	Not Available
Jharkhand	7.80
Karnataka	8.39
Kerala	6.85
Ladakh	7.14
Lakshadweep	Not Available
Madhya Pradesh	6.11
Maharashtra	7.29
Manipur	8.04
Meghalaya	7.23
Mizoram	8.75
Nagaland	8.03
Odisha	5.24
Puducherry	5.27
Punjab	6.01
Rajasthan	6.80
Sikkim	4.92
Tamil Nadu	9.04
Telangana	7.62
Tripura	6.53
Uttar Pradesh	7.73
Uttarakhand	5.95
West Bengal	6.36
National Level	**7.09**

Source: Report on 13th Annual Integrated Rating and Ranking: Power Distribution Utilities published by Power Finance Corporation (PFC) Limited in February 2025.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2699
ANSWERED ON 24.03.2025

ELECTRICITY GENERATED IN UTTAR PRADESH

2699 # DR. LAXMIKANT BAJPAYEE:

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

(a) a detailed account of the electricity produced in the State of Uttar Pradesh during the last five years by the Central Sector, Private Sector, and State Sector, including the name of the electricity company, station, type of fuel used, source, and cost of production ;

(b) Government's plan to increase electricity production in the State of Uttar Pradesh; and

(c) the problems being faced by Government while increasing electricity production in the State?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The sector-wise, utility-wise, station-wise and fuel-wise details of electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24) from Conventional Sources are given at **Annexure-I**. The source-wise details of the electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24) from Renewable Energy sources (RES) (excluding Large Hydro) are given at **Annexure - II.** The details of total electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24) are given at **Annexure - III**.

The details of rate of sale of power from conventional power stations located in Uttar Pradesh for the last five years (F.Y 2019-20 to 2023-24) are given at **Annexure - IV**.

(b) & (c): With a view to ensure adequate generation capacity, all the States, in consultation with CEA, have prepared their "**Resource Adequacy Plans (RAPs)",** which are dynamic 10 year rolling plans and includes power generation as well as power procurement planning. All the States including Uttar Pradesh were advised to initiate process for creation of generation capacities from all generation sources, as per their Resource Adequacy Plans.

Presently, following four thermal power plants are under construction in Uttar Pradesh:

(i) Obra-C STPP (Unit 2, 660 MW)-likely to be commissioned in 2025.
(ii) Ghatampur TPP (Unit 2 & 3, 660 MW each)- likely to be commissioned in 2025.
(iii) Khurja SCTPP (Unit 2, 660 MW)- likely to be commissioned in 2025.
(iv) Singrauli STPP, St-III (Unit 1 & 2, 800 MW each)- likely to be commissioned in 2029.

In addition, using 6.10 MTPA (Million Ton per Annum) coal under para B(iv) of SHAKTI policy, Tariff Based Competitive Bidding (TBCB) was conducted by Uttar Pradesh Power Corporation Limited (UPPCL) for addition of 1600 MW of new thermal capacity.

Further, following three PSPs (Pumped Storage Projects) are presently under survey & investigation and are likely to be commissioned by the year 2031-32:

(i) Kandhaura (1680 MW) by JSW Energy,
(ii) UP-01 (3660 MW) by Greenko and
(iii) Musakhand (600 MW) by ACME

The project activities are being actively coordinated by agencies concerned.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO.2699 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The detail of sector-wise, utility-wise, station-wise and fuel-wise details of electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24) from Conventional Sources:

(All generation figures are in Million Units)

Sector	Utility Name	Station Name	Fuel	2019-20	2020-21	2021-22	2022-23	2023-24
CENTRAL SECTOR	MUNPL	MEJA STPP	COAL	1,050.67	4,054.65	7,572.83	7,366.82	8,275.82
	NPCIL	NARORA A.P.S.	NUCLEAR	3,791.29	3,284.81	3,580.25	3,192.62	2,874.63
	NTPC Ltd.	AURAIYA CCPP	NATURAL GAS	444.79	687.42	361.19	224.34	698.05
		DADRI (NCTPP)	COAL	6,546.43	3,957.75	5,723.77	10,703.99	9,982.72
		DADRI CCPP	NATURAL GAS	1,851.75	1,783.33	787.30	683.89	921.47
		RIHAND STPS	COAL	23,359.27	23,398.68	22,406.34	23,368.30	23,399.81
		SINGRAULI STPS	COAL	15,331.89	14,959.51	14,453.81	15,332.74	15,756.09
		TANDA TPS	COAL	3,958.39	5,738.68	8,616.41	10,039.63	10,397.00
		UNCHAHAR TPS	COAL	8,526.46	7,156.40	8,242.66	8,615.27	8,464.35
	NUPPL	GHATAMPUR TPP	COAL				0.00	0.00
	THDC	KHURJA TPP	COAL				0.00	0.00
PRIVATE SECTOR	BEPL	BARKHERA TPS	COAL	90.84	184.19	200.16	290.68	347.29
		KHAMBARKHERA TPS	COAL	79.81	188.10	199.94	262.15	339.87
		KUNDARKI TPS	COAL	125.18	246.58	280.07	319.34	326.46
		MAQSOODPUR TPS	COAL	102.56	190.83	198.40	291.60	349.51
		UTRAULA TPS	COAL	119.42	261.35	242.19	282.86	338.98
	LAPPL	ANPARA C TPS	COAL	7,539.56	8,666.50	8,270.56	8,129.22	8,161.55
	LPGCL	LALITPUR TPS	COAL	7,174.91	7,289.49	9,551.59	11,334.39	12,352.91
	PPGCL (Jaypee)	PRAYAGRAJ TPP	COAL	9,120.88	10,751.13	11,656.38	12,509.99	12,699.02
	RPSCL	ROSA TPP Ph-I	COAL	6,039.70	6,751.18	5,773.63	7,511.05	7,609.70
STATE SECTOR	UPJVNL	KHARA HPS	HYDRO	351.03	325.46	357.57	328.57	273.64
		MATATILA HPS	HYDRO	73.36	116.81	87.04	126.39	99.31
		OBRA HPS	HYDRO	190.59	338.87	311.58	160.09	145.41
		RIHAND HPS	HYDRO	458.50	791.21	646.49	358.99	332.28
	UPRVUNL	ANPARA TPS	COAL	17,047.66	15,279.04	17,428.19	18,347.23	17,256.44
		HARDUAGANJ TPS	COAL	3,274.14	2,142.65	1,528.65	5,660.07	6,428.87
		JAWAHARPUR STPP	COAL		0.00	0.00	0.00	0.00
		OBRA TPS	COAL	3,695.92	4,698.93	4,644.41	5,591.02	4,810.77
		PARICHHA TPS	COAL	3,835.22	3,677.32	3,708.94	5,198.64	5,208.04
			Grand Total	1,24,180.22	1,26,920.87	1,36,830.35	1,56,229.88	1,57,849.99

Note: Generation from Conventional Thermal, Large Hydro and Nuclear sources is from stations of capacity 25 MW and above

MUNPL: Meja Urja Nigam Private Limited
NPCIL: Nuclear Power Corporation of India Limited
NUPPL: Neyveli Uttar Pradesh Power Ltd.
THDC: Tehri Hydro Development Corporation Limited
BEPL: Bajaj Energy Ltd
LAPPL: Lanco Anpara Power Ltd
LPGCL: Lalitpur Power Generation Company Limited
PPGCL: Prayagraj Power Generation Company LTd
RPSCL: Rosa Power Supply Company Limited
HPS: Hydro Power Station
HEP: Hydro Electric Plant
UPJVNL: Uttar Pradesh Jal Vidyut Nigam Limited
UPRVUNL: Uttar Pradesh Rajya Vidyut Utpadan Nigam
STPP: Super Thermal Power Plant
STPS: Super Thermal Power Station
APS: Atomic Power Station
CCPP: Combined Cycle Power Plant
NCTPP: National Capital Thermal Power Plant

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO.2699 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The fuel/source-wise details of the electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24) from Renewable Energy sources (RES) (excluding Large Hydro):

(All generation figures are in Million Units)

Fuel/Source	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Wind	0.0	0.0	0.0	0.0	0.0
Solar	1,447.0	1,856.2	2,900.4	3,674.0	3,971.3
Biomass	129.6	135.8	85.2	66.4	46.7
Bagasse	3,530.1	3,590.9	3,160.4	3,183.7	2,923.5
Small Hydro	36.4	164.9	162.5	234.7	175.2
Others	0.0	0.0	20.4	58.4	84.8
Renewable Energy Total (excluding Large Hydro)	**5,143.2**	5,747.8	6,328.9	7,217.2	7,201.6

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO.2699 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The details of total electricity generated in Uttar Pradesh during the last five years (FY 2019-20 to FY 2023-24):

(All generation figures are in Million Units)

Fuel		2019-20	2020-21	2021-22	2022-23	2023-24
Conventional Sources	COAL	1,17,018.91	1,19,592.96	1,30,698.93	1,51,154.99	1,52,505.20
	HYDRO	1,073.48	1,572.35	1,402.68	974.04	850.64
	LIGNITE		0.00	0.00		
	NATURAL GAS	2,296.54	2,470.75	1,148.49	908.23	1,619.52
	NUCLEAR	3,791.29	3,284.81	3,580.25	3,192.62	2,874.63
Conventional Sources Total		**1,24,180.22**	**1,26,920.87**	**1,36,830.35**	**1,56,229.88**	**1,57,849.99**
Renewable Sources (excluding Large Hydro)	Wind	0.00	0.00	0.00	0.00	0.00
	Solar	1,447.05	1,856.19	2,900.41	3,674.02	3,971.31
	Biomass	129.63	135.82	85.20	66.35	46.65
	Bagasse	3,530.10	3,590.87	3,160.39	3,183.67	2,923.55
	Small Hydro	36.43	164.91	162.54	234.69	175.24
	Others	0.00	0.00	20.40	58.45	84.85
Renewable Sources Total (excluding Large Hydro)		5,143.20	5,747.78	6,328.94	7,217.18	7,201.59
Grand Total		**1,29,323.42**	**1,32,668.65**	**1,43,159.29**	**1,63,447.06**	**1,65,051.58**

NOTE : Generation from Conventional Thermal, Large Hydro and Nuclear sources is from stations of capacity 25 MW and above.

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ANNEXURE-IV

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO.2699 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The detail of rate of sale of power from conventional power stations in Uttar Pradesh for the year 2019-20:

Sl. No.	Name of Utility/Power Station	SECTOR	UTILITY	Energy Source-Coal/Gas/ Naptha/LSHS/ Diesel/Hydro	Installed Capacity (MW)	Rate of Sale of Power (Paise/Kwh)
1	ANPARA A TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	630.00	259.08
2	ANPARA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	220.92
3	ANPARA D	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	316.53
4	AURAIYA CCPP	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	663.36	471.00
5	BABAIL SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	283.00
6	BARKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	562.00
7	BELKA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	212.00
8	DADRI	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	829.78	500.00
9	DADRI COAL- I (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	840.00	511.00
10	DADRI COAL - II (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	980.00	518.00
11	FGUTPS UNCHAHAR III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	210.00	492.00
12	FGUTPS UNCHAHAR IV	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	500.00	498.00
13	FGUTPS UNCHAHAR I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	465.00
14	FGUTPS UNCHAHAR II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	461.00
15	HARDUAGANJ EXTN. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	523.10
16	HARDUAGANJ TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	105.00	869.35
17	KHAMBERKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	563.00
18	KHARA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	72.00	37.00
19	KUNDARKHI	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	517.00
20	LALITPUR PGCL	PRIVATE SECTOR	LALITPUR PGCL	THERMAL-COAL	1,980.00	526.00

21	MAQSOODAPUR	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	565.00
22	MATATILLA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	30.60	32.30
23	MEJA URJA NIGAM PRIVATE LTD	CENTRAL SECTOR	MEJA URJA NIGAM PRIVATE LTD	THERMAL-COAL	660.00	684.00
24	NARORA A.P.S. 1 & 2	CENTRAL SECTOR	NPCIL	NUCLEAR-NUCLEAR	440.00	299.14
25	OBRA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	288.66
26	OBRA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	99.00	41.70
27	PARICHHA EXTN. ST. 2 TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	589.33
28	PARICHHA EXTN.TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	420.00	508.84
29	PARICHHA TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	220.00	655.28
30	PPGCL	PRIVATE SECTOR	TATA POWER COM. LTD.	THERMAL-COAL	1,980.00	367.20
31	RIHAND	STATE SECTOR	UPJVNL	HYDRO-HYDRO	300.00	57.40
32	RIHAND STPS I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	221.00
33	RIHAND STPS II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	206.00
34	RIHAND STPS III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	278.00
35	SHEETLA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.60	154.00
36	SHRINAGAR HEP	PRIVATE SECTOR	ALAKNANDA HPCL	HYDRO-HYDRO	330.00	516.80
37	SINGRAULI STPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	2,000.00	206.00
38	TANDA I TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	440.00	444.00
39	TANDA II TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	660.00	428.00
40	UGC SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	13.70	283.00
41	UTRAULA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	539.00

FGUTPS: Feroze Gandhi Unchahar Thermal Power Plant

The detail of rate of sale of power from conventional power stations in Uttar Pradesh for the year 2020-21

Sl. No.	Name of Utility/Power Station	SECTOR	UTILITY	Energy Source-Coal/Gas/ Naptha/LSHS/ Diesel/Hydro	Installed Capacity (MW)	Rate of Sale of Power (Paise/Kwh)
1	ANPARA A TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	630.00	272.69
2	ANPARA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	221.57
3	ANPARA D	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	340.98
4	AURAIYA CCPP	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	663.36	414.00
5	BABAIL SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	283.00
6	BARKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	526.00
7	BELKA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	212.00
8	DADRI	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	829.78	363.00
9	DADRI COAL- I (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	840.00	433.00
10	DADRI COAL - II (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	980.00	476.00
11	DHUKWAN SHP (24MW)	CENTRAL SECTOR	THDC	HYDRO-HYDRO	24.00	487.00
12	FGUTPS UNCHAHAR III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	210.00	443.00
13	FGUTPS UNCHAHAR IV	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	500.00	447.00
14	FGUTPS UNCHAHAR I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	412.00
15	FGUTPS UNCHAHAR II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	412.00
16	HARDUAGANJ EXTN. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	636.19
17	KHAMBERKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	528.00
18	KHARA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	72.00	49.80
19	KUNDARKHI	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	499.00
20	LALITPUR PGCL	PRIVATE SECTOR	LALITPUR PGCL	THERMAL-COAL	1,980.00	522.00
21	MAQSOODAPUR	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	517.00
22	MATATILLA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	30.60	79.10
23	MEJA URJA NIGAM PRIVATE LTD	CENTRAL SECTOR	MEJA URJA NIGAM PRIVATE LTD	THERMAL-COAL	1,320.00	512.00
24	NARORA A.P.S. 1 & 2	CENTRAL SECTOR	NPCIL	NUCLEAR-NUCLEAR	440.00	299.14
25	OBRA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	323.85
26	OBRA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	99.00	79.10

27	PARICHHA EXTN. ST. 2 TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	614.51
28	PARICHHA EXTN.TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	420.00	641.70
29	PPGCL	PRIVATE SECTOR	TATA POWER COM. LTD.	THERMAL-COAL	1,980.00	357.70
30	PPGCL (BARA)	PRIVATE SECTOR	JP POWER VENTURES LTD	THERMAL-COAL	1,980.00	357.70
31	RIHAND	STATE SECTOR	UPJVNL	HYDRO-HYDRO	300.00	120.00
32	RIHAND STPS I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	225.00
33	RIHAND STPS II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	211.00
34	RIHAND STPS III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	283.00
35	SHEETLA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.60	154.00
36	SINGRAULI STPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	2,000.00	205.00
37	TANDA I TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	440.00	457.00
38	TANDA II TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	660.00	419.00
39	UGC SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	13.70	283.00
40	UTRAULA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	523.00

FGUTPS: Feroze Gandhi Unchahar Thermal Power Plant

The detail of rate of sale of power from conventional power stations in Uttar Pradesh for the year 2021-22

Sl. No.	Name of Utility/Power Station	SECTOR	UTILITY	Energy Source-Coal/Gas/ Naptha/LSHS/ Diesel/Hydro	Installed Capacity (MW)	Rate of Sale of Power (Paise/Kwh)
1	ANPARA A TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	630.00	265.90
2	ANPARA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	225.36
3	Anpara C TPS	PRIVATE SECTOR	LANCO anpara	THERMAL-COAL	1,200.00	274.00
4	ANPARA D	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	334.15
5	AURAIYA CCPP	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	663.36	606.00
6	BABAIL SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	283.00
7	BARKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	571.00
8	BELKA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.00	212.00
9	DADRI	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	829.78	798.00
10	DADRI COAL- I (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	840.00	416.00
11	DADRI COAL - II (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	980.00	468.00
12	DHUKWAN SHP (24MW)	CENTRAL SECTOR	THDC	HYDRO-HYDRO	24.00	487.00
13	FGUTPS UNCHAHAR III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	210.00	464.00
14	FGUTPS UNCHAHAR IV	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	500.00	476.00
15	FGUTPS UNCHAHAR I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	436.00
16	FGUTPS UNCHAHAR II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	440.00
17	HARDUAGANJ EXTN. - II TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	660.00	467.84
18	HARDUAGANJ EXTN. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	804.05
19	KHAMBERKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	574.00
20	KHARA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	72.00	43.70
21	KUNDARKHI	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	540.00

22	LALITPUR PGCL	PRIVATE SECTOR	LALITPUR PGCL	THERMAL-COAL	1,980.00	529.00
23	MAQSOODAPUR	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	562.00
24	MATATILLA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	30.60	56.80
25	MEJA URJA NIGAM PRIVATE LTD	CENTRAL SECTOR	MEJA URJA NIGAM PRIVATE LTD	THERMAL-COAL	1,320.00	445.16
26	NARORA A.P.S. 1 & 2	CENTRAL SECTOR	NPCIL	NUCLEAR-NUCLEAR	440.00	299.14
27	OBRA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	316.49
28	OBRA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	99.00	41.30
29	PARICHHA EXTN. ST. 2 TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	617.68
30	PARICHHA EXTN.TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	420.00	598.08
31	PPGCL	PRIVATE SECTOR	TATA POWER COM. LTD.	THERMAL-COAL	1,980.00	339.00
32	RIHAND	STATE SECTOR	UPJVNL	HYDRO-HYDRO	300.00	72.50
33	RIHAND STPS I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	227.00
34	RIHAND STPS II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	218.00
35	RIHAND STPS III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	284.00
36	SHEETLA SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	3.60	154.00
37	SINGRAULI STPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	2,000.00	217.00
38	TANDA I TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	440.00	492.00
39	TANDA II TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,320.00	426.00
40	UGC SHP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	13.70	283.00
41	UTRAULA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	556.00

FGUTPS: Feroze Gandhi Unchahar Thermal Power Plant

The detail of rate of sale of power from conventional power stations in Uttar Pradesh for the year 2022-23:

Sl. No.	Name of Station/Unit	SECTOR	UTILITY	Energy Source-Coal/Gas/ Naptha/LSHS/ Diesel/Hydro	Installed Capacity (MW)	Rate of Sale of Power (Paise/Kwh)
1	ANPARA A TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	630.00	282.62
2	ANPARA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	231.10
3	Anpara C TPS	PRIVATE SECTOR	LANCO anpara	THERMAL-COAL	1,200.00	311.00
4	ANPARA D	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	328.14
5	AURAIYA CCPP	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	663.36	1,976.92
6	BARKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	620.00
7	DADRI	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS	829.78	1,473.29
8	DADRI COAL- I (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	840.00	584.09
9	DADRI COAL - II (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	980.00	618.09
10	FGUTPS UNCHAHAR III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	210.00	558.36
11	FGUTPS UNCHAHAR IV	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	500.00	581.47
12	FGUTPS UNCHAHAR I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	543.07
13	FGUTPS UNCHAHAR II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	522.96
14	HARDUAGANJ EXTN. -II TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	660.00	555.29
15	HARDUAGANJ EXTN. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	663.10
16	HARDUAGANJ. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	105.00	761.79
17	KHAMBERKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	643.00
18	KHARA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	72.00	46.30
19	KUNDARKHI	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	622.00
20	LALITPUR PGCL	PRIVATE SECTOR	LALITPUR PGCL	THERMAL-COAL	1,980.00	572.00
21	MAQSOODAPUR	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	611.00
22	MATATILLA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	30.60	47.50

23	MEJA URJA NIGAM PRIVATE LTD	CENTRAL SECTOR	MEJA URJA NIGAM PRIVATE LTD	THERMAL-COAL	1,320.00	514.60
24	NARORA A.P.S. 1 & 2	CENTRAL SECTOR	NPCIL	NUCLEAR-NUCLEAR	440.00	290.12
25	OBRA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	330.01
26	OBRA HEP	STATE SECTOR	UPJVNL	HYDRO-HYDRO	99.00	41.30
27	PARICHHA EXTN. ST. 2 TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	554.70
28	PARICHHA EXTN.TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	420.00	519.60
29	PPGCL	PRIVATE SECTOR	TATA POWER COM. LTD.	THERMAL-COAL	1,980.00	351.00
30	RIHAND	STATE SECTOR	UPJVNL	HYDRO-HYDRO	300.00	46.60
31	RIHAND STPS I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	236.60
32	RIHAND STPS II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	233.00
33	RIHAND STPS III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	298.74
34	SINGRAULI STPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	2,000.00	215.16
35	TANDA I TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	440.00	628.95
36	TANDA II TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,320.00	534.96
37	UTRAULA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	640.00

FGUTPS: Feroze Gandhi Unchahar Thermal Power Plant

The detail of rate of sale of power from conventional power stations in Uttar Pradesh for the year 2023-24:

Sl. No.	Name of Station/Unit	SECTOR	UTILITY	Energy Source-Coal/Gas/ Naptha/LSHS/ Diesel/Hydro	Installed Capacity (MW)	Rate of Sale of Power (Paise/Kwh)
1	ANPARA A TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	630.00	296.03
2	ANPARA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	244.90
3	Anpara C TPS	PRIVATE SECTOR	LANCO anpara	THERMAL-COAL	1,200.00	339.00
4	ANPARA D	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	358.00
5	AURAIYA CCPP	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS/RLNG	663.36	1,241.85
6	BARKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	604.00
7	DADRI	CENTRAL SECTOR	NTPC LTD.	THERMAL-GAS/RLNG	829.78	1,166.31
8	DADRI COAL- I (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	840.00	575.38
9	DADRI COAL - II (NCTPP)	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	980.00	591.59
10	FGUTPS UNCHAHAR III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	210.00	561.73
11	FGUTPS UNCHAHAR IV	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	500.00	585.99
12	FGUTPS UNCHAHAR I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	560.46
13	FGUTPS UNCHAHAR II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	420.00	480.42
14	HARDUAGANJ EXTN. -II TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	660.00	634.63
15	HARDUAGANJ EXTN. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	648.86
16	HARDUAGANJ. TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	110.00	841.98
17	KHAMBERKHERA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	619.00
18	KHARA HEP	STATE SECTOR	UPJVNL	HYDRO	72.00	46.30
19	KUNDARKHI	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	605.00
20	LALITPUR PGCL	PRIVATE SECTOR	LALITPUR PGCL	THERMAL-COAL	1,980.00	550.00

21	MAQSOODAPUR	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	611.00
22	MATATILLA HEP	STATE SECTOR	UPJVNL	HYDRO	30.60	40.00
23	MEJA URJA NIGAM PRIVATE LTD	CENTRAL SECTOR(JV of NTPC & UPRVUNL)	MEJA URJA NIGAM PRIVATE LTD	THERMAL-COAL	1,320.00	509.10
24	NARORA A.P.S. 1 & 2	CENTRAL SECTOR	NPCIL	NUCLEAR-NUCLEAR	440.00	302.40
25	OBRA B TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	1,000.00	375.83
26	OBRA C	STATE SECTOR	UPRVUNL	THERMAL-COAL	660.00	375.98
27	OBRA HEP	STATE SECTOR	UPJVNL	HYDRO	99.00	41.30
28	PARICHHA EXTN. ST. 2 TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	500.00	505.34
29	PARICHHA EXTN.TPS	STATE SECTOR	UPRVUNL	THERMAL-COAL	420.00	477.97
30	PPGCL	PRIVATE SECTOR	TATA POWER COM. LTD.	THERMAL-COAL	1,980.00	357.00
31	RIHAND	STATE SECTOR	UPJVNL	HYDRO	300.00	45.80
32	RIHAND STPS I	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	240.98
33	RIHAND STPS II	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	235.82
34	RIHAND STPS III	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,000.00	302.12
35	ROSA THERMAL POWER STATION	PRIVATE SECTOR	ROSA POWER SCL	THERMAL-COAL	1,200.00	459.10
36	SHRINAGAR HEP	PRIVATE SECTOR	ALAKNANDA HPCL	HYDRO	330.00	618.20
37	SINGRAULI STPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	2,000.00	231.67
38	TANDA I TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	440.00	627.82
39	TANDA II TPS	CENTRAL SECTOR	NTPC LTD.	THERMAL-COAL	1,320.00	505.35
40	UTRAULA	PRIVATE SECTOR	BAJAJ ENERGY PVT. LTD.	THERMAL-COAL	90.00	619.00

FGUTPS: Feroze Gandhi Unchahar Thermal Power Plant

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2700
ANSWERED ON 24.03.2025

ACHIEVEMENTS UNDER PAT SCHEME

2700 SHRI SANJAY SETH:

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

(a) the sector-wise details of the energy conservation targets and cumulative energy savings which have been achieved under the Perform Achieve and Trade (PAT) Scheme since its inception;

(b) the sector-wise details of the economic impact of the PAT Scheme on industries in terms of cost savings and enhanced competitiveness;

(c) steps taken to provide technical and financial support to industries participating in the PAT Scheme to adopt energy-efficient technologies; and

(d) whether Government is considering to expand the scope of the PAT Scheme to include additional sectors or industries, such as agriculture or transportation, if so, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : The PAT Scheme was launched in 2012, and as of FY 2024, a total of 1,333 units across 13 energy-intensive sectors have been covered. This program has saved 27.07 Million Ton of Oil Equivalent (MTOE) energy and encouraged investment of about ₹75,000 crores in energy efficient technologies and related measures.

The sector wise details of energy target and savings are given below:

Sl. NO.	Sector Name	Energy Saving Target in MTOE	Achieved Savings in MTOE	Monetary Savings in Rs. crores
1	Aluminium	1.057	2.138	4806
2	Cement	2.183	3.474	7006
3	Chlor and Alkali	0.161	0.230	505
4	Fertilizer	0.924	1.163	1998
5	Iron & Steel	4.618	6.168	12939
6	Paper & Pulp	0.297	0.650	1328
7	Textile	0.234	0.328	666

…….2.

8	Power (Thermal)	7.138	7.726	15807
9	DISCOM	4.675	2.423	7231
10	Refinery	2.267	2.261	5150
11	Railways	0.077	0.196	585
12	Petrochemical	0.230	0.284	380
13	Building	0.009	0.031	42
Grand Total		23.87	27.07	58444

(c) : The Bureau of Energy Efficiency (BEE) periodically conducts capacity enhancement programs for Designated Consumers through various initiatives, including PAT awareness programs, sector-specific workshops on energy efficient technologies, best practices, energy-efficient approaches, and process optimization. BEE has organised 65 cross sectoral workshops cum awareness programs and 9 sector specific trainings on technology and best practices for the various stakeholders during 2024-25 (till February, 2025).

(d) : Ministry of Power has already issued notification in June 2023 for the addition of 13 new Energy Intensive sectors under PAT Scheme including sectoral energy threshold level, namely Sugar, Chemical, Ceramic, Glass, Zinc, Copper, Dairy, Port trusts, Automobile Assembly Unit, Tyre manufactures, Forging, Foundry and Refractories.

The Baseline Audit of 280 units under newly notified Sugar sector has been completed. Further, the proforma development in Zinc and Copper sector has been completed.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2701
ANSWERED ON 24.03.2025

COMPREHENSIVE STRATEGY TO ACHIEVE VIKSIT BHARAT

2701 SMT. SANGEETA YADAV:

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

(a) whether it is a fact that a comprehensive strategy to achieve 'Viksit Bharat' have been outlined in Union Budget 2024-25 by focusing on nine key priorities that aim to create abundant opportunities for all citizens includes energy security as well;

(b) if so, the details of plans formulated, roadmap or action plan drawn by Government to realize the goal of securing energy security as a component of 'Viksit Bharat';

(c) whether Government is actively collaborating with other Ministries/NITI Aayog towards achieving the goal of 'Viksit Bharat'; and

(d) if so, the details thereof, if not, the reasons therefor?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b): Yes. Ministry of Power has proactively taken several measures along with existing initiatives to realize the goal of securing energy security as a component of 'Viksit Bharat' which inter-alia includes the following:

(i) Expanding the generation capacity to 900 GW, including 615 GW from non- fossil sources to meet the projected demand of 388 GW by 2031-32.

(ii) Developing, dynamic 10-year "Resource Adequacy Plans (RAPs)" to ensure that capacity meets the peak demand. States have also been advised to begin creating generation capacities from all sources as per these plans.

(iii) Planning a total capacity of 47 GW/236 GWh from Battery Energy Storage Systems (BESS) and 27 GW/175 GWh from Pumped Storage Plants (PSP) by 2031-32, to tackle the challenges of integrating large-scale Variable Renewable Energy (VRE) into the grid.

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(iv) For promoting the technology-agnostic and economically viable Energy Storage Systems (ESS) in India, the Government has already taken several steps such as releasing the 'National Framework for promoting ESS' and guidelines for BESS in generation, transmission, and distribution; launching the Viability Gap Funding (VGF) scheme for BESS; waiving Inter-State Transmission System (ISTS) charges for 25 years for Hydro PSP and 12 years for BESS; allowing ESS to provide Secondary and Tertiary Reserve Ancillary Services under CERC conditions; issuing the Electricity (Rights of Consumers) Amendment Rules, 2022; and launching a Productivity Linked Incentive (PLI) Scheme for Advanced Chemistry Cells (ACC) to support battery manufacturing.

(c) & (d): The Government has decided to formulate a 25-year Vision, "Viksit Bharat@2047," aiming to make India a developed nation by 2047. To achieve this, 10 Sectoral Groups of Secretaries (SGoS), coordinated by NITI Aayog, have been established. Ministry of Power is part of SGoS-3 (Resource group), working with six other Ministries/Departments on goals like energy independence, affordable and clean energy, minerals security, environmental sustainability, global presence, resource ecosystem reforms, and technology & R&D.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2702
ANSWERED ON 24.03.2025

THERMAL POWER PLANTS IN THE COUNTRY

2702 # SMT. GEETA ALIAS CHANDRAPRABHA:

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

(a) the total number of thermal power plants in the country;

(b) the States in which the maximum number of thermal power plants have been set up in the country;

(c) whether Government has considered expanding the capacity of thermal power plants;

(d) if so, the details of the steps taken by Government to expand capacity of the plants;

(e) the number of thermal power plants currently set up in the State of Uttar Pradesh; and

(f) whether Government may consider setting up more thermal power plants in the State infuture, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : As on 28.02.2025, there are total 281 thermal power plants (Coal, Lignite, Gas and Diesel) in the country.

(b) : Maximum number of thermal power plants are located in Maharashtra and Tamil Nadu (i.e. 27 in each State).

(c) & (d) : Government of India (GoI) has proposed in November, 2023 for setting up of an additional minimum 80,000 MW coal-based thermal capacity by 2031-32. Against this target, a total coal-based capacity of 9,350 MW has already been commissioned in 2023-24 & 2024- 25 and currently, 29,900 MW of thermal capacity is under construction. In FY 2024-25, contracts for 22,640 MW thermal capacity have been awarded, out of which about 5,600 MW is now under construction. Further, 33,580 MW of coal-based candidate capacity has been identified which is at various stages of planning in the country. This includes both Brownfield expansion and Greenfield capacity.

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(e) : 26 **(**Twenty-Six) thermal power plants have been set up in the State of Uttar Pradesh.

(f) : As per Section 7 of Electricity Act, 2003 setting up of a power plant is a de-licensed activity in the country. Any generating company may establish, operate and maintain a generating station without obtaining a license under Electricity Act, 2003 if it complies with the technical standards relating to connectivity with the grid. The availability of adequate generation capacity to meet the electricity demand in a State lies under the purview of the respective state Government/ State Power Utility. In order to meet the demand of electricity, state may either set up a new thermal power plants (either through Brownfield expansion or through Greenfield capacity addition) of its own or may invite bid for setting up of new power plant.

Following coal-based thermal power projects are under construction in the State of Uttar Pradesh:

Sl. No.	Project Name (& Implementing Agency)	Sector	Unit No.	Capacity (MW)	Anticipated Trial Run Date
1	Obra-C STPP (Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited)	State	Unit-2	660	Mar-25
2	Ghatampur TPP (Neyveli Uttar Pradesh Power Ltd)	Central	Unit-2	660	May-25
3	Khurja SCTPP (THDC India Ltd.)	Central	Unit-2	660	June-25
4	Ghatampur TPP (Neyveli Uttar Pradesh Power Ltd)	Central	Unit-3	660	Oct-25
5	Singrauli STPP, St-III (NTPC Ltd.)	Central	Unit-1	800	May-29
6	Singrauli STPP, St-III (NTPC Ltd.)	Central	Unit-2	800	Nov-29
Total				**4,240**	

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2703
ANSWERED ON 24.03.2025

CAPTIVE POWER PROJECT VERIFICATION

2703 DR. SUMER SINGH SOLANKI:
SHRI MADAN RATHORE:

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

(a) the manner in which Government will ensure transparency in the process of reducing toll fees;

(b) whether the verification reports be publicly accessible to prevent discrepancies;

(c) the manner in which State electricity regulators coordinate with the Central Electricity Authority to ensure uniform implementation; and

(d) the consequences non-compliant projects will face under the new verification rules?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): Does not pertain to Captive Power Projects.

(b) & (c) : Under Rule 3 of the Electricity Rules, 2005 (as amended from time to time), Central Electricity Authority (CEA) is responsible for verifying the captive status of such generating plants, where captive generating plant and its captive user(s) are located in more than one state. The verification will be carried out in accordance with the procedure approved by the Central Government and reports would be made available to the relevant stakeholders. The Procedure for verification of captive status of such generating plant, where Captive Generating Plant and its Captive User(s) are located in more than one state, has been issued by CEA and available on its website.

For generating plants and their users located within the State, the captive status shall be verified by the State Electricity Regulatory Commission or any other designated agency of the State Government, in accordance with regulations or procedures framed under the relevant provisions of the Electricity Act, 2003 and Rule 3 of the Electricity Rules, 2005 (as amended from time to time).

(d) : In case the generating plant fails to meet the criteria for captive generating plant as provided under Rule 3 of Electricity Rules, 2005 (as amended from time to time), then such plant shall not be entitled for the benefits available to the captive generating plants and surcharge on open access shall be applicable in accordance with provisions of the Electricity Act, 2003.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2704
ANSWERED ON 24.03.2025

DEVELOPMENT OF HYDROPOWER POTENTIAL OF THE NORTH EASTERN REGION

2704 SMT. S. PHANGNON KONYAK:

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

(a) the measures being implemented by Government to harness the hydropower potential of the North Eastern Region;

(b) manner in which these initiatives aim to address the challenges associated with hydropower development in the region; and

(c) the financial assistance provided thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The Government has taken several policy initiatives, for development of hydropower in the country including the North Eastern Region (NER) which are as under:-

1. A number of measures were approved on 08.03.2019 for promoting hydro power viz., (i) Declaring Large Hydro Power (projects with capacity more than 25 MW) as Renewable Energy source (ii) Hydro Purchase Obligation (HPO) as a separate entity within Non-solar Renewable Purchase Obligation (RPO) (iii) Tariff rationalization measures for bringing down hydro power tariff (iv) Budgetary support for Flood Moderation/Storage Hydro Electric Projects (HEPs) (v) Budgetary support for Cost of Enabling Infrastructure, i.e. roads/bridges.

2. The scope for budgetary support has been subsequently widened to include the cost incurred for the construction of: **(a)** transmission line from power house to the nearest pooling point including upgradation of pooling substation of State /Central Transmission Utility, **(b)** ropeways, **(c)** railway siding, and **(d)** communication infrastructure.

3. Scheme of Central Financial Assistance (CFA) to fund the equity portion of the State Governments of NER for development of Hydro Electric Projects, capped at 24% of the total project equity subject to a maximum of ₹750 crore per project with provision to revisit the limit of ₹750 crore on case-to-case basis.

4. A number of hydro projects which were stuck up for a long time have been revived during last few years, due to persistent efforts and policies of the Government. These include Teesta VI (500 MW) and Rangit IV (120 MW) in Sikkim and Lower Subansiri (2000 MW) and Dibang project (2880 MW) in Arunachal Pradesh.

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5. Waiver of ISTS charges on transmission of power from new Hydro Power Projects as well as Pumped Storage Projects(PSPs).

6. Ministry of Power vide orders dated 22.12.2021 and 11.05.2023 has indicated 58 HEPs with installed capacity of 44.7 GW in Arunachal Pradesh for implementation by hydro CPSUs. Memorandum of Agreement for 13 projects, totaling 12.7 GW, were signed between the Government of Arunachal Pradesh and CPSUs. Out of these 13 projects, investment approval has been accorded for two projects viz., Tato-I (186 MW) and Heo (240 MW).

(b) : These measures are envisaged to be beneficial for development of hydro projects in NER, which are located in remote and far-flung areas and require development of extensive associated infrastructure such as roads, bridges for transportation of heavy, large sized equipment & machinery to the project site. Further, CFA to fund the equity portion of the State Governments of NER for development of Hydro Electric Projects would encourage state governments to resolve the issues of delay in land acquisition, rehabilitation & resettlement and local law & order.

(c) : The details of Central assistance provided for the development of hydropower in the North Eastern States are as under:

1. An amount of ₹175.03 crore towards cost of Downstream protection works in respect of Subansiri Lower HE project (2000 MW) has been released.

2. An amount of ₹546.86 crores has been reimbursed against expenditure incurred towards Flood Moderation component of Dibang Multi Purpose Project (2880 MW).

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2705
ANSWERED ON 24.03.2025

PERFORMANCE OF POWER DISTRIBUTION UTILITIES

2705 DR. SYED NASEER HUSSAIN:

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

(a) the key findings of the 13th Annual Integrated Rating and Ranking Report on India's Power Distribution Utilities, including the number of utilities that have shown improvement in ranking, and the number that have deteriorated, especially in terms of collection efficiency and AT&C losses;

(b) the primary challenges faced by underperforming DISCOMs as identified in the report, particularly in terms of financial losses and operational inefficiencies; and

(c) the steps being taken to address these challenges and to ensure the long-term financial viability and efficiency of the power distribution sector?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The 13th Annual Integrated Rating and Ranking of Power Distribution Utilities Report was released in February, 2025. A total of 42 State DISCOMs, 10 Private DISCOMs, 11 Power Departments have been rated in this report. The key findings of the report are:

i. A total of 11 DISCOMs have scored A+ ratings.

ii. Grades of 15 DISCOMs and 6 Power Departments have improved, while that of 13 DISCOMs have declined from the previous year.

iii. 25 DISCOMs and 9 Power Departments saw an 'Improving' trend i.e., more than 5% increase in scores from the previous year.

iv. Number of utilities awarded C or lower grade have reduced from 21 in FY23 (12th Rating Report) to 18 in FY24 (13th Rating Report).

v. Billing Efficiency has marginally improved to 86.9% in FY24.

vi. Collection Efficiency for FY24 is 96.4%. 15 utilities have recorded a collection efficiency of 100% in FY24. Collection efficiency has improved for 26 utilities and deteriorated for 30 utilities. 7 utilities maintained 100% collection efficiency.

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vii. Aggregate Technical and Commercial (AT&C) Losses at national level stood at 16.3% in FY24.AT&C losses improved for 40 utilities and deteriorated for 23 utilities.

(b) : The challenges faced by the underperforming DISCOMs are primarily because of:

- Gap between Average Cost of Supply and Average Revenue Realised (ACS-ARR gap) indicating non-cost reflective tariff.
- Sub-optimal Collection efficiency indicating under-recovery from consumers including state government departments and gap in receipt of subsidy dues from state government.
- Regulatory issues such as disallowance of expenses, delay in issue of tariff order etc.

(c) : Government of India has been supporting the States/ distribution utilities to improve financial viability and efficiency of the power distribution sector through various initiatives. Some of the key initiatives taken are as under:

i. Revamped Distribution Sector Scheme (RDSS) launched with the objective of improving the quality and reliability of power through a financially sustainable and operationally efficient Distribution Sector. The release of funds under the scheme is linked to States/ Distribution Utilities taking necessary measures to improve their performance.

ii. Rules and Standard Operating Procedure have been framed for timely payment of the subsidies declared by the State Governments.

iii. Rules have been framed for implementation of Fuel and Power Purchase Cost Adjustment (FPPCA) and cost reflective tariff so as to ensure that all prudent cost for supply of electricity are passed through and are timely recovered.

iv. Timely issuance of tariff and true up orders.

v. Payment of GENCO dues on time through promulgation of Late Payment Surcharge (LPS) Rules.

vi. Issuing Additional Prudential Norms for providing loans to State Power utilities, and

vii. Allowing Additional borrowing space of 0.5% of Gross State Domestic Product (GSDP) to State based on performance of Distribution Utilities

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2706
ANSWERED ON 24.03.2025

STABILITY OF POWER GRIDS

2706 SHRI ASHOKRAO SHANKARRAO CHAVAN:

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

(a) whether clouds over vast swathes of North India has resulted in sudden dip in solar power production capacity in the country during the last few months, if so, the details thereof;

(b) whether sudden dip due to low production and surge in power due to overproduction can damage the power grid;

(c) if so, preventive measures taken in this regard;

(d) whether Grid India is working with several stakeholders to improve weather forecast required for renewable power generation, if so, the details thereof; and

(e) steps taken to strike balance between renewable source of energy and other conventional source of energy?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): There have been few instances of sudden dip in solar power generation in Northern Region in recent months. The details of dip in Solar Power generation during past three months (December, 2024 to February, 2025) are given at **Annexure.**

(b) & (c): Sudden dip in solar generation leads to demand-supply gap resulting in low frequency & localised high voltages in grid. Similarly, sudden ramp up in solar generation after clearance of cloud cover may lead to high frequency & localised low voltages in grid. The demand supply gap due to change in renewable generation have to be compensated by other generating resources for frequency control and reactive power support. In this regard, following preventive measures have been taken :

(i) Automatic Generation Control (AGC) maintains frequency stability by sending Secondary Reserve Ancillary Services (SRAS) Up or Down signals every 4 seconds to AGC-enabled thermal and hydro power plants.

(ii) During dip in RE generation, additional generation from thermal based power plants under Tertiary Reserve Ancillary Services (TRAS) is provided to maintain frequency in the band as defined in the Indian Electricity Grid Code (IEGC).

(iii) Mode of Pump Storage plants are also changed to support active power.

(iv) The generators with high ramp rate viz hydro/ gas are also brought on bar to maintain load generation balance.

(v) Renewable Energy (RE) Plants are also instructed to revise schedule promptly.

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(vi) Reactor switching is done so as to keep Voltages in RE plants within desired range for secure & reliable grid operation.

(vii) Mode of operation of RE Plants/Reactive Power compensation devices are also changed as per Reactive Power requirement of the grid.

(viii) Reactive Power support is also taken from on bar thermal, hydro and nuclear generators.

(d): Ministry of Power (MoP) and Ministry of Earth Sciences (MoES) have been interacting very closely and regularly to ensure sharing of accurate weather data with stakeholders for RE generation forecasting. As a result of close coordination between the two Ministries, India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF) and Indian Space Research Organisation (ISRO) are sharing weather forecast data with various stakeholders which is being utilised for Renewable Energy (RE) and demand forecasting. Further, Weather data of all Inter State Transmission System (ISTS) connected RE Plants is being shared by Grid-India with NCMRWF four times a day through secure API (Application Programming Interface) for improving weather forecast.

Ministry of Power has modified bidding guidelines to include the installation of Automatic Weather System (AWS) at all RE plants. Sharing of AWS data will further enhance the quality of weather forecasting for all stake holders.

In addition, IIT Bombay has been engaged for development of indigenous RE Forecasting Tool.

(e): The Government of India has recognised the need for striking a balance between Renewable Source of Energy and Conventional source of energy. To achieve this objective, following measures have been taken to ensure reliability and stability of the National Grid: -

(i) Development of intra-state transmission network is being planned to keep pace with RE capacity addition. Strong inter connection of ISTS RE schemes with the intra-state network to ensure better reliability in terms of anchoring voltage stability, angular stability, losses reduction etc. is being done.

(ii) Central Financial Assistance (CFA) is being provided to the States for setting up Transmission infrastructure for RE integration within their State under the Green Energy Corridor Scheme.

(iii) Encouraging setting up of RE projects with storage facilities for optimal utilisation of transmission facilities.

(iv) Flexibilization of thermal generation is mandated to address the variability of RE generation.

(v) CEA (Technical Standards for Connectivity to the Grid) Regulations lay down the minimum technical requirements for the RE generating plants to ensure the safe, secure and reliable operation of the grid. The compliances to the said regulations by RE plants are verified jointly by Central Transmission Utility (CTUIL) and Grid-India/RLDCs before granting connectivity/interconnection to the national grid. Robust compliances verification is done before interconnection of any new plant to the grid.

(vi) Indian Electricity Grid Code mandates that RE plants participate in the primary and secondary frequency control in case of contingencies. Hybrid RE power plants, Energy Storage Systems such as BESS (Battery Energy Storage System) and PSP (Pump Storage Project) are being promoted for mitigating variability in RE generation and provide adequate frequency support to the grid.

(vii) Establishment of 13 No. of Renewable Energy Management Centres (REMC) in RE rich States and Regions for dedicated monitoring, forecasting and scheduling of Solar and Wind plants.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 2706 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The details of dip in Solar Power generation during past three months (December, 2024 to February, 2025)

Date	**Northern region Solar generation (MU)**	**% Dip from previous day**
26-Dec-2024	95	-21.49
27-Dec-2024	79	-16.84
11-Jan-2025	126	-17.11
12-Jan-2025	103	-18.25
18-Feb-2025	173	-5.98
19-Feb-2025	137	-20.81
25-Feb-225	126	-33.33

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2707
ANSWERED ON 24.03.2025

4TH INDIA-UK DIALOGUE

2707 SHRI KESRIDEVSINH JHALA:

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

(a) the manner in which the dialogue contribute to India's goal of achieving net-zero emissions by 2070;

(b) the manner in which UK will support India in enhancing grid resilience and energy storage solutions;

(c) the role will green hydrogen and offshore wind energy will play in India's transition, as discussed in the dialogue; and

(d) whether the technological innovations or knowledge-sharing initiatives were proposed for improving energy efficiency?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): The Fourth India-UK Ministerial Energy Dialogue, co-chaired by Minister of Power and Secretary of State (SOS) for Department of Energy Security and Net Zero (DESNZ) for United Kingdom, was held in February 2025 in New Delhi.

Under India-UK bilateral cooperation several programmes have been initiated which include capacity building and knowledge exchange programmes. The programmes also provided inputs for energy efficiency and decarbonisation roadmap for the Aluminum sector. Further, the Accelerating Smart Power & Renewable Energy in India (ASPIRE) programme under the joint UK-India corporation, the UK side shared knowledge for the development of Offshore wind tenders for Tamil Nadu and Gujarat, green hydrogen policies for certain States, development of 1 GWh tenders for Energy storage and provided inputs for increasing solar manufacturing in India.

(b) to (d) : During the dialogue the next phase of India –UK bilateral ASPIRE programme was announced to deliver technical inputs for roll out of renewables, and accelerate industrial energy efficiency, decarbonisation in collaboration with Ministry of Power (MoP) and Ministry of New and Renewable Energy (MNRE).

It was also agreed to continue the Power Sector Reforms (PSR) programme to provide technical inputs for grid transformation to ensure seamless renewable energy integration.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2708
ANSWERED ON 24.03.2025

STATUS OF ELECTRIFICATION OF VILLAGES

2708 MS. SWATI MALIWAL:

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

(a) the State-wise number of villages that are yet to be electrified as per the latest data;

(b) the targets and timeline set for achieving 100 per cent village electrification; and

(c) the funds allocated and utilized for rural electrification during the last five years, State-wise?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : Government of India has been supplementing the efforts of the States through schemes like Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) and Revamped Distribution Sector Scheme (RDSS), to help them achieve the objective of providing quality and reliable supply of power to all households.

As reported by the States/UTs, all the inhabited un-electrified census villages in the country were electrified by 28thApril, 2018. A total of 18,374 villages were electrified during DDUGJY (State/UT-wise details enclosed as **Annexure-I**). Under DDUGJY and thereafter under SAUBHAGYA, as reported by all States/UTs, electrification of all willing households was completed by 31st March, 2019. A total of 2.86 crore households were electrified during SAUBHAGYA period (State/UT-wise details enclosed as **Annexure- II**). Both the schemes stand closed as on 31.03.2022.

Government of India is further supporting the States for grid electrification of households left-out during SAUBHAGYA, under the ongoing scheme of Revamped Distribution Sector Scheme (RDSS), launched in July,2021. In addition, all households belonging to Particularly Vulnerable Tribal Group (PVTG) identified under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and households belonging to Scheduled Tribes identified under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan) are being sanctioned for on-grid electricity connection under RDSS as per the scheme guidelines. So far, works for electrification of 10.19 lakh households have been sanctioned amounting to Rs. 4,643 Cr. under RDSS. The State-wise details of Household Electrification Works sanctioned under RDSS are enclosed as **Annexure-III.** Further, works amounting to Rs. 1,067 Cr. have been sanctioned under RDSS for extension/ strengthening of electricity infrastructure in Northern Border areas in five States/ UTs of Himachal Pradesh, Ladakh, Uttarakhand, Sikkim and Arunachal Pradesh.

(c): State/UT-wise details of funds allocated/ utilized for rural electrification works under DDUGJY, Prime Minister's Development Package (PMDP) and household electrification works under SAUBHAGYA and RDSS, during FY 21 to FY 25 is enclosed as **Annexure-IV**.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2708 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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State-wise electrification of inhabited census villages under DDUGJY

Sl. No.	States/UTs	Number of villages electrified
1	Arunachal Pradesh	1,483
2	Assam	2,732
3	Bihar	2,906
4	Chhattisgarh	1,078
5	Himachal Pradesh	28
6	J & K	129
7	Jharkhand	2,583
8	Karnataka	39
9	Madhya Pradesh	422
10	Maharashtra	80
11	Manipur	366
12	Meghalaya	1,051
13	Mizoram	54
14	Nagaland	78
15	Odisha	3,281
16	Rajasthan	427
17	Tripura	26
18	Uttar Pradesh	1,498
19	Uttarakhand	91
20	West Bengal	22
	Total	**18,374**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2708 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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Households electrified since the launch of SAUBHAGYA scheme including additional households under DDUGJY

Sl. No.	States/UTs	Number of Households electrified
1	Andhra Pradesh*	1,81,930
2	Arunachal Pradesh	47,089
3	Assam	23,26,656
4	Bihar	32,59,041
5	Chhattisgarh	7,92,368
6	Gujarat*	41,317
7	Haryana	54,681
8	Himachal Pradesh	12,891
9	Jammu & Kashmir	3,77,045
10	Jharkhand	17,30,708
11	Karnataka	3,83,798
12	Ladakh	10,456
13	Madhya Pradesh	19,84,264
14	Maharashtra	15,17,922
15	Manipur	1,08,115
16	Meghalaya	2,00,240
17	Mizoram	27,970
18	Nagaland	1,39,516
19	Odisha	24,52,444
20	Puducherry*	912
21	Punjab	3,477
22	Rajasthan	21,27,728
23	Sikkim	14,900
24	Tamil Nadu*	2,170
25	Telangana	5,15,084
26	Tripura	1,39,090
27	Uttar Pradesh	91,80,571
28	Uttarakhand	2,48,751
29	West Bengal	7,32,290
Total		**2,86,13,424**

**Not funded under SAUBHAGYA Scheme*

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2708 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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State-wise details of Household Electrification Works sanctioned under RDSS

States/ UTs	Sanction Details		
	Outlay (Rs. Cr.)	GBS (Rs. Cr.)	Households (Nos.)
Andaman & Nicobar	-	-	-
Andhra Pradesh	161	97	46,443
Arunachal Pradesh	76	68	10,136
Assam	786	707	1,27,111
Bihar	301	180	42,635
Chhattisgarh	367	220	72,788
Delhi	-	-	-
Goa	-	-	-
Gujarat	-	-	-
Haryana	-	-	-
Himachal Pradesh	7	6	100
Jammu & Kashmir	77	69	10,730
Jharkhand	82	49	13,314
Karnataka	36	22	5,844
Kerala	7	4	1,482
Ladakh	-	-	-
Madhya Pradesh	185	111	36,045
Maharashtra	29	17	9,036
Manipur	214	193	36,972
Meghalaya	436	392	50,501
Mizoram	80	72	15,167
Nagaland	70	63	10,004
Puducherry	-	-	-
Punjab	-	-	-
Rajasthan	500	300	2,08,592
Sikkim	-	-	-
Tamil Nadu	30	18	10,673
Telangana	120	72	31,081
Tripura	105	94	19,853
Uttar Pradesh	964	579	2,58,700
Uttarakhand	14	12	1,823
West Bengal	-	-	-
Grand Total	**4,643**	**3,345**	**10,19,030**

Note: *Sanctioned Households include 1,661 Public places sanctioned under DA-JGUA*

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ANNEXURE-IV

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 2708 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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State/UT-wise details of funds allocated/ utilised during the last five years

(Amount in Rs. Crores)

States/ UTs	Fund Allocated/Utilised during FY 21 to FY 25
Andaman & Nicobar	5.30
Andhra Pradesh	126.06
Arunachal Pradesh	191.01
Assam	1,874.96
Bihar	2,171.65
Chhattisgarh	303.64
D&N Haveli	1.59
Delhi	0.00
Goa	2.16
Gujarat	63.10
Haryana	64.14
Himachal Pradesh	58.17
J&K and Ladakh	465.07
Jharkhand	955.10
Karnataka	135.85
Kerala	78.70
Madhya Pradesh	1,201.59
Maharashtra	347.45
Manipur	192.54
Meghalaya	195.39
Mizoram	35.89
Nagaland	76.57
Orissa	517.44
Puducherry	4.81
Punjab	29.74
Rajasthan	806.60
Sikkim	45.22
Tamil Nadu	108.93
Telangana	67.65
Tripura	215.86
Uttar Pradesh	3,261.89
Uttarakhand	9.01
West Bengal	766.76
Grand Total	**14,380**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2709
ANSWERED ON 24.03.2025

POWER SUPPLY IN RURAL AREAS

2709 SMT. SULATA DEO:
SHRI NIRANJAN BISHI:

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

(a) whether Government has made any efforts to improve availability of power across the country, particularly in rural areas;

(b) if so, the details of steps taken by Government to improve electricity supply in rural areas;

(c) the number of villages connected with electricity in the country under various schemes to improve power supply in rural areas;

(d) whether power supply has improved in the State of Odisha, if so, the details thereof; and

(e) number of hours of daily electricity supply in villages of the State of Odisha and other States, along with measures being implemented to improve supply?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : There is adequate availability of power in the country. Present installed generation capacity of the country is 470 GW. Government of India has addressed the critical issue of power deficiency by adding 238 GW of generation capacity since April, 2014 transforming the country from power deficit to power sufficient. Further, addition of 2,01,088 circuit kilometer (ckm) of Transmission lines, 7,78,017 MVA of Transformation capacity and 82,790 MW of Inter-Regional capacity has been done since 2014 with capability of transferring 1,18,740 MW from one corner of the country to another.

The details of All India Power Supply Position of the country during the last three years and current year 2024-25(upto February 2025) are given at **Annexure-I.** This indicates that the gap between Energy Requirement and Energy Supplied has declined to marginal level of 0.1% only during current year 2024-25 (upto February, 2025). Even this marginal gap between Energy Requirement and Energy Supplied is generally on account of constraints in the State transmission/distribution network.

Electricity being a concurrent subject, supply and distribution of electricity to the consumers is within the purview of the respective State Government/Power Utility. Government of India has been supporting the States/ UTs through schemes like Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) to improve availability of power in the rural areas and to provide electricity connection to all willing households in rural areas and all willing poor households in urban areas.

…….2.

Under DDUGJY, electrification of all census villages was taken up and a total of 18, 374 villages were electrified by 28th April 2018 including 3,281 villages of Odisha. Under SAUBHAGYA, as reported by States, electrification of all willing households was completed by 31st March, 2019. A total of 2.86 crore households were electrified during SAUBHAGYA period including 24,52,444 households of Odisha. These schemes stand closed as on 31.03.2022.

Government of India is further supporting the States for grid electrification of households left-out during SAUBHAGYA, under the ongoing scheme of Revamped Distribution Sector Scheme (RDSS), launched in July, 2021. In addition, all households belonging to Particularly Vulnerable Tribal Group (PVTG) identified under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and households belonging to tribals under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan) are being sanctioned for on-grid electricity connection under RDSS as per the scheme guidelines. Till date, works amounting to Rs. 4,643 Cr. have been sanctioned for electrification of 10,19,030 households.

(d) & (e) : The year-wise details of power supply position, in terms of energy, during the last three years and current year (up to February 2025) in the State of Odisha are given at **Annexure-II.**

The State/UT-wise average daily hours of power supply data for FY2023-24 in Urban and Rural areas in the country is given at **Annexure-III**. The average daily hours of power supply in rural areas in the state of Odisha for FY 2023-24 was 23.4 hrs.

Government of India has taken the following steps to ensure adequate availability of power in the country:

(i) In order to augment the power generation capacity, the Government of India has initiated following capacity addition programme:

(A) Government of India has proposed in November 2023 for setting up of an additional minimum 80,000 MW coal based capacity by 2031-32. Against this target, coal based capacity of 9,350 MW has already been commissioned in 2023-24 & 2024-25. 29,900 MW Thermal Capacity is under construction and contracts for 22,640 MW thermal capacity have been awarded in FY 2024-25. Further, 33,580 MW of coal and lignite based candidate capacity has been identified which is at various stages of planning in the country.

(B) 13,997.5 MW of Hydro Electric Projects are under construction. Further, 24,225.5 MW of Hydro Electric Projects are under various stage of planning and targeted to be completed by 2031-32.

(C) 7,300 MW of Nuclear Capacity is under construction and targeted to be completed by 2029-30. 7,000 MW of Nuclear Capacity is under various stages of planning and approval.

(D) 1,53,920 MW Renewable Capacity including 84,310 MW of Solar, 28,280 MW of Wind and 40,890 MW Hybrid power is under construction while 70,210 MW of Renewable Capacity including 46,670 MW of Solar, 600 MW of Wind and 22,940 MW Hybrid Power is at various stages of planning and targeted to be completed by 2029-30.

(E) In energy storage systems, 13,050 MW/78,300 MWh Pumped Storage Projects (PSPs) are under construction/concurred and 14,970 MW/54,803 MWh Battery Energy Storage System (BESS) are currently under various stages of construction/bidding.

……3.

(ii) A robust national grid has been established to facilitate the transfer of power from power surplus regions to power deficit regions. Addition of 2,01,088 circuit kilometer (ckm) of Transmission lines, 7,78,017 MVA of Transformation capacity and 82,790 MW of Inter-Regional capacity has been done since 2014 with capability of transferring 1,18,740 MW from one corner of the country to another. The capacity of National Grid is being expanded on a continuous basis commensurate with the growth in electricity generation and electricity demand.

(iii) Directions under Section 11 of Electricity Act have been issued to imported coal based plants to operate and generate power to their full capacity.

(iv) Steady supply of coal to all the thermal power plants is being ensured to prevent fuel shortages.

(v) Gas-based power plants of NTPC as well as other generators are being scheduled during high power demand period.

(vi) All the GENCOs including IPPs and Central generating stations have been advised to generate and maintain full availability on daily basis excluding the period of planned maintenance or forced outage.

(vii) Hydro based generation is being scheduled in a manner so as to conserve water for meeting demand during peak period.

(viii) Planned maintenance of generating units is being minimized during period of high demand.

(ix) New power generation capacity is being monitored closely for timely addition.

(x) Government has facilitated power trading through regulatory framework whereby states with surplus generation can sell power to states which are in deficit through three (3) power exchanges viz. Indian Energy Exchange (IEX), Power Exchange India Ltd (PXIL) and Hindustan Power Exchange Ltd.

(xi) Electricity market has been reformed by adding the Real Time Market (RTM), Green Day Ahead Market (GDAM), Green Term Ahead Market (GTAM), High Price Day Ahead Market (HPDAM) in Power exchange. Also, there is DEEP portal for e-bidding and e-Reverse for procurement of short-Term power by DISCOMs.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 2709 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The details of All India power supply position during the last three years and current year (upto February 2025):

Year	ENERGY			
	Energy Requirement	Energy Supplied	Energy Not Supplied	
	(MU)	(MU)	(MU)	%
2021-22	13,79,812	13,74,024	5,787	0.4
2022-23	15,13,497	15,05,914	7,583	0.5
2023-24	16,26,132	16,22,020	4,112	0.3
2024-25* (upto February, 2025)	15,47,785	15,46,229	1,555	0.1

***Data for February, 2025, is Provisional.**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (d) & (e) OF UNSTARRED QUESTION NO. 2709 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The details of power supply position, in terms of Energy and Peak, during the last three years and current year (up to February 2025) in the State of Odisha:

Power Supply Position for the State of Odisha				
FY	**Energy**			
	Energy Requirement	**Energy Supplied**	**Energy not Supplied**	
	(MU)	**(MU)**	**(MU)**	**(%)**
2021 - 22	38,339	38,332	7	0.0
2022 - 23	42,631	42,584	47	0.1
2023 - 24	41,358	41,333	25	0.1
2024 – 25 (upto February, 2025*)	39,132	39,108	24	0.1

* Data for the month of February is provisional

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (d) & (e) OF UNSTARRED QUESTION NO. 2709 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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The details of State/UT-wise average daily hours of power supply in rural areas in FY 2023-24:

State/UT Name	2023-24 (Rural)
A&N Island	22.2
Andhra Pradesh	23.6
Arunachal Pradesh	20.1
Assam	22.5
Bihar	22.2
Chhattisgarh	21.6
Goa	23.8
Gujarat	23.7
Haryana	19.4
Himachal Pradesh	23.0
Jammu and Kashmir	19.0
Jharkhand	22.1
Karnataka	21.4
Kerala	22.4
Ladakh	22.2
Madhya Pradesh	22.6
Maharashtra	23.8
Manipur	22.0
Meghalaya	21.8
Mizoram	22.3
Nagaland	18.0
Odisha	**23.4**
Puducherry	22.7
Punjab	22.8
Rajasthan	21.7
Sikkim	21.5
Tamil Nadu	23.5
Telangana	21.9
Tripura	22.3
Uttar Pradesh	18.1
Uttarakhand	21.4
West Bengal	23.4
National Average:	**21.9**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2710
ANSWERED ON 24.03.2025

POWER GENERATION

2710 #SHRI SANDEEP KUMAR PATHAK:

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

(a) the total number of power plants in the country, through which the electricity generated, is sold to foreign countries, the details thereof, plant-wise;

(b) the details of the percentage of electricity from these plants sold to each foreign country and the percentage that is sold within India, the details thereof, plant-wise;

(c) the tariff at which electricity generated from these plants is being sold abroad and the tariff at which it is being sold within India; and

(d) the percentage of power plants in the country facing shortage of coal?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b): 15 Nos. of power plants in India are supplying Electricity to foreign countries. The plant-wise and country-wise details are given at **Annexure**. In addition to this, 70 million units of free electricity is being supplied to Nepal from Tanakpur HEP under Mahakali Treaty. Further, Godda (1600 MW) Thermal power station of Adani Power Jharkhand Limited (APJL) is selling power exclusively to Bangladesh. This plant is directly connected to Bangladesh grid through a dedicated line and has PPA for 100% of power with Bangladesh. It is not connected with Indian grid.

(c): In respect of NTPC plants, tariff (fixed and variable charges) is determined by CERC (Central Electricity Regulatory Commission) for each project separately, which is same for Indian and foreign procurers. Average rate of billing from these projects to Bangladesh was Rs. 2.96/ kWh in last two years.

For private plants, transactions are done on commercial terms between buying and selling entities.

(d): There is adequate availability of coal for thermal power plants in the country. As on 16.03.2024, the coal stock available at the power plants in the country is about 56 Million Tonnes (MT), which is sufficient to run these plant for an average of 19 days (78% of the normative coal stock) at 85% Plant Load Factor (PLF).

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 2710 ANSWERED IN THE RAJYA SABHA ON 24.03.2025

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S.No.	Project with installed capacity	Company Name	Ownership	Exporting to	Quantum Allocated for Export (MW)	Percentage of electricity allocated to foreign country	Percentage of electricity allocated within India
1.	Singrauli (2000 MW)	NTPC	Public	Bangladesh	50	2.50 %	97.5 %
2.	Rihand-I (1000 MW)				25	2.50 %	97.5 %
3.	Rihand-II (1000 MW)				15	1.50 %	98.5 %
4.	National Capital Thermal Power Station Dadri-II (980 MW)				10	1.02 %	98.98 %
5.	Korba STPS-I (2100 MW)				40	1.90 %	98.10 %
6.	Vindhyachal STPS-I (1260 MW)				10	0.79 %	99.21 %
7.	Vindhyachal -II (1000 MW)				15	1.50 %	98.5 %
8.	Vindhyachal -III (1000 MW)				15	1.50 %	98.5 %
9.	SIPAT-II (1000 MW)				20	2.00 %	98 %
10.	Farakka STPS STAGE-I&II, 1600 MW (3x200+2x500)				5	0.31 %	99.69 %
11.	Kahalgaon STPS STAGE-I, 840 MW (4x210)				10	1.19 %	98.81 %
12.	Kahalgaon STPS STAGE-II, 1500 MW (3x500)				20	1.33 %	98.67 %
13.	Talchar STPS STAGE-I, 1000 MW (2x500)				15	1.50 %	98.5 %
14.	Sembcorp Energy India Limited Project2, Andhra Pradesh (1320 MW)	Sembcorp Gayatri Pvt. Ltd (SGPL)	Private		450	34.1%	65.9%
15.	Juniper Green Cosmic Pvt Limited, Solar plant (100 MW)	Juniper Green Cosmic Pvt Limited	Private	Bhutan	50	50%	50%

In addition, Power is being exported by DVC (300 MW) & Tripura State Electricity Corporation (TSECL) (160 MW) to Bangladesh. Power is also exported from Manipur State Power Distribution Company Limited (MSPDCL) (3 MW) to Myanmar. Further, Nepal and Bhutan import electricity from Indian power exchange(s).

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2711
ANSWERED ON 24.03.2025

ENERGY CONSERVATION PROGRAMMES

2711 SHRI MISSION RANJAN DAS:

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

(a) manner in which Government plans to sustain or surpass the current rate of energy efficiency improvement compared to global trends;

(b) the initiatives that are being taken to increase the adoption of the Unnat Jyoti by Affordable LEDs for All (UJALA) scheme in rural and underserved areas;

(c) steps that are being taken to increase public awareness and participation in energy;

(d) whether there are plans to introduce new technologies or programs to achieve energy savings in sectors not currently covered by existing initiatives; and

(e) if so, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The current rate of energy efficiency improvement for India has been one of the best as compared to global trends. As per the estimates of International Energy Agency, the improvement of global energy intensity during the year 2010-19 was 2% whereas the same for India was 2.5%. In 2024 itself, India's energy intensity improvement was estimated to be around 2.5%, compared global energy intensity 1%. (Energy intensity has been measured in terms of Mega Joule/USD at 2015 Purchasing Power Parity in the above estimations.) The Ministry plans to surpass the current rate of energy efficiency improvement through more stringent energy performance standards for appliances; improved emission norms for industries and transport sector; and implementing energy efficient building codes.

(b) : UJALA scheme launched in 2015, by Energy Efficiency Services Limited. The scheme aimed to provide energy-efficient LED bulbs to domestic consumers at an affordable price. UJALA has now successfully transformed the domestic bulb market in favour of LED. So far, 36.87 Crore LED bulbs have been distributed under the UJALA programme. In addition to this, more than 350 Crore LED Bulbs have been sold in the retail market as per (ELCOMA - Electric Lamp and Component Manufacturers Association of India) due to the market transformation in favour of LED Bulbs in India through the catalysing action of Ujala Scheme.

Now LED bulbs are available at very affordable prices in the range of Rs. 70 to 80 per bulb against the earlier prices of Rs. 300 to 350 per bulb in the open market across the country in both urban and rural areas thus obviating need for further large scale intervention to promote their adoption.

(c): Bureau of Energy Efficiency has been running various awareness campaigns in print and social media on energy conservation and energy efficiency to create awareness regarding energy conservation amongst the public.

(d) & (e): Ministry has not devised any such scheme.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2712
ANSWERED ON 24.03.2025

PURPOSE OF INSTALLING SMART METERS

2712 # SHRI DEEPAK PRAKASH:

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

(a) the objectives of installing smart meters; and

(b) the success achieved by Government in achieving those objectives?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : Government of India launched Revamped Distribution Sector Scheme (RDSS) with the objective of improving the quality and reliability of power supply to consumers through a financially sustainable and operationally efficient distribution Sector. Under the scheme, financial assistance is being provided to the eligible Distribution Utilities for upgradation of Distribution Infrastructure & Smart Metering works.

The implementation of Smart meters helps the Distribution Utilities in improving their billing by enabling automatic meter reading, automatic energy measurement, accounting, auditing, improving load forecasting, optimizing power purchase costs and renewable energy integration through net metering. Thus, the installation of smart meters helps the distribution utilities to reduce their losses and optimize power purchase costs reducing the cost of power. Further, the use of data analytics in smart metering enables identification of theft prone pockets and high loss areas. Prepaid Smart Metering of Consumers is also one of the major components under Scheme which would help in improving the collection efficiency of the distribution utilities.

(b) : Under this scheme, projects worth Rs 1.31 lakh crore have been sanctioned under RDSS for Smart metering works. Out of the total target of 20.33 Cr. Smart meters sanctioned under RDSS, around 1.27 Cr Smart meters have been installed in the country.

Fund release under RDSS is contingent on performance improvement on various parameters including the Aggregate Technical and Commercial (AT&C) loss and Gap between Average Cost of Supply and Average Revenue Realized (ACS-ARR Gap).As a result of collective effort of the Central and State/UT Government, the AT&C losses at the pan-India level have come down from 21.9% in FY 21 to 16.28% in FY 24 and the ACS-ARR Gap has reduced from Rs. 0.71/kWh to Rs. 0.19/kWh during the same period.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.2713
ANSWERED ON 24.03.2025

OUTCOME OF CONFERENCE ON ENERGY EFFICIENCY AND SUSTAINABLE WORKS

2713 # SHRI BABURAM NISHAD:

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

(a) the key findings and resolutions adopted at the National Conference on 'Sustainable Cooling and Doubling the Rate of Energy Efficiency Improvement';

(b) the specific policy measures taken by Government to achieve the target of doubling the rate of energy efficiency improvement by 2030;

(c) Government's plan to balance the growing cooling demand and ensure sustainable and energy-efficient cooling solutions; and

(d) the initiatives taken by the Bureau of Energy Efficiency (BEE) to promote energy efficiency in industry, transport and domestic sectors?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The National conference was organized by Bureau of Energy Efficiency (BEE) for stakeholders deliberations on "Sustainable Cooling and Doubling the Rate of Energy Efficiency Improvement" in February, 2025. The conference has suggested a roadmap to double rate of energy efficiency improvement by 2030 through key interventions across all demand sectors including transition to Sustainable Cooling.

Further, consensus emerged during the above conference that the target of doubling energy efficiency would be met through gradual improvement by the year 2030. Accordingly, India's Energy Intensity improvement rate, estimated at approximately 2.5% in 2024, will need to gradually increase to 4% in the year 2030.

(b) : To achieve the target of doubling the rate of energy efficiency improvement by the year 2030, BEE is implementing various Energy Conservation schemes/ programmes across the country. Some of the schemes are mentioned below:

a. Perform, Achieve and Trade scheme for improving energy efficiency in large industries
b. Standards & Labelling programme for promoting energy efficient appliances
c. Energy Conservation and Sustainable Building Code for energy conservation in new buildings.
d. Fuel economy norms for energy conservation in Transport Sector.

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(c): Sustainable cooling acts as a tool to address the growing cooling demand. To balance the growing cooling demand while ensuring the sustainable and energy efficient cooling solutions, two new building codes: the Energy Conservation and Sustainable Building Code (ECSBC) for commercial buildings and the Eco Niwas Samhita (ENS) for residential buildings have been notified for adoption by States. The Air-conditioners and refrigerators have been brought under mandatory compliance of standard and Labelling programme to ensure that energy efficient devices are deployed for cooling purposes.

Additionally, with overarching goal to provide sustainable cooling and thermal comfort for all while securing environmental and socio-economic benefits for the society, Ministry of Environment, Forest and Climate Change (MoEFCC) has launched India Cooling Action Plan with a 20-year perspective (2017-18 to 2037-38)which aims to:

a. Reduce cooling demand across sectors by 20% to 25 % by the year 2037-38.

b. Reduce refrigerant demand by 25% to 30% by the year 2037-38.

c. Reduce cooling energy requirements by 25% to 40% by the year 2037-38.

(d): BEE has taken several initiatives to promote the energy efficiency in industry, transport and domestic sectors which includes

(i) Perform, Achieve and Trade scheme to improve energy efficiency in energy-intensive industries. It sets sector-specific energy reduction targets, allowing industries to earn Energy Saving Certificates for exceeding targets, which can be traded on power exchanges. This incentivizes cost-effective energy savings while providing flexibility in compliance.

(ii) Under the Standards and Labelling programme, the major energy consuming appliances are given star rating from 1 to 5 with 5 star as most efficient appliance. Based on star label, the consumer is encouraged for making informed choice regarding purchase of energy efficient appliances thereby saving electricity consumption.

(iii) The Energy Conservation and Sustainable Building Code (ECSBC) for commercial buildings and the Eco Niwas Samhita (ENS) for residential buildings have been notified for energy savings in building sector. These codes are to be adopted and implemented by the States / local bodies.

(iv) Corporate Average Fuel Efficiency norms for passenger cars for energy savings in transport sector.

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