GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
STARRED QUESTION NO.55
ANSWERED ON 06.02.2025

AMENDMENT IN THE POWER EXPORT RULES

***55. SHRI MANISH TEWARI:**

Will the Minister of POWER be pleased to state:

(a) whether the Union Government has recently amended the power export rules and if so, the details thereof;

(b) the reasons and justifications with the Government for amending the rules in haste and the manner in which the urgency was assessed;

(c) the details of power plants currently operational in the country that are selling their entire power output to neighbouring countries; and

(d) the manner in which the Government justify that power plants in the country would get benefit from these amendments?

A N S W E R

THE MINISTER OF POWER

(SHRI MANOHAR LAL)

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

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STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) IN RESPECT OF LOK SABHA STARRED QUESTION NO.55 FOR REPLY ON 06.02.2025 REGARDING AMENDMENT IN THE POWER EXPORT RULES ASKED BY SHRI MANISH TEWARI.

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(a) & (b): Government of India has issued *Guidelines for Import/Export (Cross Border) of Electricity* in December 2018, *inter-*alia, to facilitate import/export of electricity with neighbouring countries, evolve robust electricity infrastructure and promote transparent, consistent, and predictable regulatory mechanism. These guidelines, *inter-alia*, allow Indian Generating Stations to build dedicated transmission lines for connecting to the transmission system of neighbouring countries.

India is strengthening cross-border electricity interconnections with its neighbouring countries under the One Sun One World One Grid (OSOWOG) initiative, aimed at reducing reserve requirements, lowering electricity costs, and supporting energy transition. Starting in July 2023, the Government noted instances of defaults, including delayed payments to Indian generating stations supplying power to neighbouring countries, which, if unresolved, could potentially impact lenders.

Consequently, after careful consideration of the matter, the Government in August 2024, made the following amendments to the aforementioned Guidelines:

(i) In case of sustained non-scheduling of full/part capacity or defaults, including delayed payments, the Government may permit such generating stations to be connected to the Indian Grid.

(ii) Electricity generated from coal, gas, hydro, or renewable energy can be exported to neighbouring countries. The source of fuel may now also be specified. Additionally, electricity from collective transactions through power exchanges can now be exported.

.....2.

(c): Power is being exported to neighbouring countries of Bangladesh, Bhutan, Myanmar and Nepal under the aforementioned Guidelines. These exports include, *inter-alia*, the following:

(i) Bangladesh is supplied entire power from Godda Ultra Super Critical Thermal Power Plant Jharkhand (1496 MW).

(ii) Sembcorp Energy India Limited Project Andhra Pradesh (450 MW), Damodar Valley Corporation (300 MW) and NTPC stations (250 MW) supply power to Bangladesh.

(iii) Power is also regularly exported to Nepal (up to 1004 MW), Bhutan (up to 1150 MW) and Myanmar (3 MW).

(d) : These amendments aim to enhance transparency, consistency, and predictability in the regulatory framework, and provide greater flexibility for generating companies seeking to trade electricity with neighbouring countries. In addition to strengthening cross-border interconnectivity, they will help meet domestic demand during periods of low demand in neighbouring countries, benefiting domestic consumers and optimising resource utilisation.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.481
ANSWERED ON 06.02.2025

POWER LINE LOSS

†481. SHRI ARUN GOVIL:

Will the Minister of POWER be pleased to state:

(a) the details of present status of power line loss in the country, State-wise; and

(b) the details of action plan likely to be formulated by the Government to identify defaulter areas of electricity theft and to make recovery?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The losses that occur in the system in the process of supplying electricity to the consumers are in the nature of technical and commercial losses. The details of present status of Aggregate Technical and Commercial (AT&C) losses in the country, state-wise is provided at Annexure.

(b) : Distribution Utilities viz. Distribution Companies (DISCOMs)/Power Departments of the State/Union Territory (UT) Government concerned, are responsible for reduction of transmission and distribution losses in its area of operation. Government of India has been supplementing the efforts of the States/UTs through various schemes from time to time.

To help States improve the quality and reliability of power supply to consumers, Government of India (GoI) launched the Revamped Distribution Sector Scheme (RDSS), in July 2021, with an outlay of Rs. 3,03,758 crore. The scheme aims to reduce the AT&C losses to pan-India levels of 12-15% and Average Cost of Supply and Average Revenue Realized (ACS-ARR) gap to zero.

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Under the Scheme, Projects worth Rs. 2.78 lakh crore. have been sanctioned. Loss reduction Infrastructure projects amounting to Rs. 1.48 lakh crore. have been sanctioned which includes works for replacement of bare conductors with covered conductors, laying Low Tension Aerial Bunched (LT AB) cables upgradation/augmentation of Distribution transformers (DT)/sub-stations, etc. Further, 19.79 crore prepaid smart consumer meters, 2.11 lakh communicable feeder meters and 52.53 lakhs Distribution Transformer communicable meters have been sanctioned.

Prepaid smart metering is one of the critical interventions envisaged under RDSS to improve the AT&C losses. It allows the Distribution Utilities to timely collect the revenues and measure energy flows at all levels, without any human interference. Proper and accurate energy accounting is the key to identification of high loss and theft prone areas, which will improve the billing and collection efficiencies of the utilities significantly.

GoI has issued various advisories and Standard operating Procedures for prepaid smart metering. As per the advisory issued, prepaid smart meters may be prioritised in the Government establishments including offices/institutions/ local bodies, etc. and Commercial, Industrial and high load consumers. Based on experience, the smart prepaid meters may be installed for other category of consumers.

As a result of measures taken by the Government, the AT&C losses have come down from 21.9% in Financial Year 2021 to 15.4% in Financial Year 2023.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 481 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Table: Aggregate Technical and Commercial (AT&C) Losses for years 2020-21, 2021-22, and 2022-23

	2020-21	2021-22	2022-23
State Sector	22.6	16.5	15.8
Andaman & Nicobar Islands	51.9	19.8	19.8
Andaman & Nicobar PD	51.9	19.8	19.8
Andhra Pradesh	20.4	10.6	8.0
Arunachal Pradesh	51.8	47.8	51.7
Assam	18.7	17.0	16.2
Bihar	34.4	31.8	25.0
Chandigarh	13.8	13.3	-
Chhattisgarh	18.1	18.1	16.1
Delhi	24.8	8.3	10.7
Goa	12.9	6.0	11.9
Gujarat	11.6	9.7	10.7
Haryana	17.5	13.9	12.0
Himachal Pradesh	14.0	12.9	10.6
Jammu & Kashmir	59.3	-	-
Jharkhand	43.1	30.8	30.3
Karnataka	16.0	11.5	13.9
Kerala	7.8	7.7	7.1
KSEBL	7.8	7.7	7.0
TCED	13.5	16.5	7.1
Ladakh	-	48.3	30.3
Lakshadweep	11.6	-	-
Madhya Pradesh	41.7	21.4	20.6
Maharashtra	27.7	16.5	18.6
Manipur	24.6	30.6	13.8
Meghalaya	23.4	25.5	24.0
Mizoram	29.0	36.2	26.3
Nagaland	47.1	43.6	45.8
Puducherry	20.1	11.1	17.5
Punjab	18.5	11.7	11.3
PSPCL	18.5	11.7	11.3

.....2.

Rajasthan	**26.2**	**17.5**	**15.9**
Sikkim	**98.4**	**30.8**	**36.7**
Tamil Nadu	**11.8**	**11.4**	**10.3**
Telangana	**13.3**	**10.6**	**18.6**
Tripura	**37.4**	**31.2**	**28.2**
Uttar Pradesh	**27.1**	**31.0**	**22.3**
Uttarakhand	**15.4**	**14.1**	**15.3**
West Bengal	**21.3**	**16.7**	**17.3**
Private Sector	**13.9**	**13.5**	**10.9**
Dadra & Nagar Haveli and Daman & Diu	**5.0**	**3.8**	**3.6**
Delhi	**8.8**	**8.0**	**7.1**
Gujarat	**6.9**	**4.5**	**3.9**
Maharashtra	**8.9**	**6.7**	**6.5**
Odisha	**27.4**	**31.4**	**21.9**
Uttar Pradesh	**9.8**	**8.5**	**8.4**
West Bengal	**13.2**	**7.7**	**8.1**
Grand Total	**21.9**	**16.2**	**15.4**

(Source: Report on performance of power utilities for the years 2020-21 to 2022-23 published by Power Finance Corporation Ltd.)

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.482
ANSWERED ON 06.02.2025

CARBON CREDIT POLICY

482. DR. GANAPATHY RAJKUMAR P:

Will the Minister of POWER be pleased to state:

(a) whether there is any Carbon Credit Policy in the country;

(b) if so, the details thereof; and

(c) the funds allocated for non-emission of Carbon scheme in the country?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : Government of India has notified the Carbon Credit Trading Scheme (CCTS) on 28th June 2023 under Energy Conservation (Amendment) Act, 2022.

CCTS has two mechanisms namely, compliance mechanism and offset mechanism. In the compliance mechanism, the obligated entities shall be required to achieve greenhouse gas emission intensity in accordance with the targets as may be notified by Government. In the offset mechanism, the non-obligated entities can register their projects for greenhouse gas emission reduction or removal or avoidance for seeking issuance of Carbon Credit Certificates.

(c) : The government does not allocate any funds for the administration of CCTS. The scheme expenses would be covered by the fee and charges collected from entities under CCTS and Bureau of Energy Efficiency's own resources.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.487
ANSWERED ON 06.02.2025

SEGREGATION OF AGRICULTURE FEEDERS FOR LOAD MANAGEMENT

487. SHRI SHASHANK MANI:
SHRI KRIPANATH MALLAH:

Will the Minister of POWER
be pleased to state:

(a) whether the Government has undertaken any efforts to segregate agriculture feeders in areas where the load demand is higher to reduce the load on domestic feeder for ensuring uninterrupted power supply and if so, the details thereof;

(b) whether the Government has identified and segregated specific feeders as part of this effort and if so, the details thereof; and

(c) whether the Government has segregated the total number of feeders so far and if so, the details thereof along with the total cost involved in this regard?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : Government of India has been laying emphasis on segregation of mixed load feeders having more than 30% agricultural load into agriculture and non-agricultural feeders with the objective of efficient load management. It is expected that separation of agriculture feeders would facilitate judicious rostering of supply for agricultural consumption and enable their solarization which would help in ensuring day time supply to farmers while reducing the cost of supply. It will also help in providing reliable and quality supply to non-agricultural consumers in the rural areas.

.....2

Under Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) Scheme launched in 2014 and Revamped Distribution Sector Scheme (RDSS) launched in 2021, works have been sanctioned for feeder segregation. Under DDUGJY, 7,833 number of feeders were segregated with a project cost of ₹ 10,394 crore and the scheme stands closed as on 31.03.2022.

Under RDSS, feeder segregation works amounting to ₹ 40,509 crore have been sanctioned and the works are to be completed within the scheme period i.e., 31.03.2026.

The status of feeder segregation works is as below:

#	Particulars	Feeders
1.	Total feeders with more than 30% agricultural load feasible for segregation	80,631
2.	Feeders already segregated under various Schemes including initiatives of State Governments	49,512
3.	Feeders sanctioned under RDSS	31,119
4.	Feeders segregated under RDSS till date	4,163

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.488
ANSWERED ON 06.02.2025

ULTRA MEGA SOLAR PLANT IN KERALA

488. SHRI M K RAGHAVAN:

Will the Minister of POWER
be pleased to state:

(a) whether the Government has any plan to establish an Ultra Mega Solar plant in Kerala, as the State is generating less electricity than its requirements and if so, the details thereof;

(b) whether the Government has any data on the usage and purchase of electricity in Kerala and if so, the details thereof; and

(c) whether the Government has any data on the charges for domestic consumption of electricity per unit and if so, the details thereof, State-wise?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : As per the information provided by Kerala State Electricity Board Limited (KSEBL), a Solar Project is planned to be established at Cheemeni, Kerala, with a capacity of 100 MW.

(a) : As per the information provided by KSEBL, 28,360 million units of electricity was supplied in the financial year 2023-24, after considering the transmission and distribution losses.

(c) : The rates of electricity for domestic category vary from state to state based on the categorization of domestic consumers and quantum and mode of subsidy provided by the State Government. As per Central Electricity Authority's report for F.Y. 2023-24, the State-wise estimated rates for domestic consumption of 200 KWh electricity per month is given at Annexure.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 488 ANSWERED IN THE LOK SABHA ON 06.02.2025

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*DOMESTIC 2 KW (200 Units/Month)

F.Y 2023-24

Sl. No	Name of Utility	Tariff effective from	Av. Rate (P/KWh)	Duty/Tax (P/KWh)	Total (P/KWh)
1	Andaman & Nicobar Island	01.04.2023	458	0	458
2	Andhra Pradesh	01.04.2023	444	6	450
3	Arunachal Pradesh	01.06.2018	400	0	400
4	Assam	01.04.2023	692	35	727
5	Bihar (Urban Areas)	01.04.2023	914	55	968
	(Rural Areas)		838	50	888
6	Chandigarh	01.04.2023	328	9	337
7	Chhattisgarh	01.04.2023	400	42	452
8	Dadra & Nagar Haveli and Daman & Diu	01.08.2023	205	0	205
9	Delhi-(BYPL/BRPL/TPDDL)	01.10.2021	320	15	335
10	Delhi-(NDMC)	01.10.2021	320	15	335
11	Goa	01.04.2023	238	20	258
12	Gujarat (Urban Areas)	01.04.2023	379	57	436
	(Rural Areas)		339	25	364
13	Gujarat-(Torrent Power Ltd., Ahmadabad)	01.04.2023	389	58	447
14	Gujarat-(Torrent Power Ltd., Surat)	01.04.2023	396	59	456
15	Haryana	01.04.2023	338	10	348
16	Himachal Pradesh	01.04.2023	513	14	527
17	Jammu & Kashmir	01.12.2023	238	0	238
18	Jharkhand (Urban Areas)	01.03.2024	715	40	755
	(Rural Areas)		668	38	705

19	Karnataka	01.04.2023	810	63	873
20	Kerala	01.11.2023	544	48	592
21	Ladakh	01.11.2023	219	32	251
22	Lakshadweep	01.04.2023	295	0	295
23	Madhya Pradesh (Urban Areas)	04.04.2023	804	84	888
	(Rural Areas)		774	81	855
24	Maharashtra	01.04.2023	878	140	1018
25	Maharashtra–Mumbai- (B.E.S.T)	01.04.2023	599	122	721
26	Maharashtra - Mumbai- (Adani Electricity)	01.04.2023	734	143	877
27	Maharashtra-Mumbai- (TATA's)	01.04.2023	666	133	798
28	Manipur	01.04.2023	618	0	618
29	Mizoram	01.04.2023	650	0	650
30	Meghalaya	01.04.2023	555	5	560
31	Nagaland	01.04.2023	608	0	608
32	Odisha	01.04.2023	455	17	472
33	Puducherry	01.04.2023	305	0	305
34	Punjab	16.05.2023	592	77	668
35	Rajasthan	01.04.2023	765	55	820
36	Sikkim	01.04.2023	235	0	235
37	Tamil Nadu	01.07.2023	281	0	281
38	Telangana	01.04.2023	465	6	471
39	Tripura	01.10.2023	597	30	626
40	Uttarakhand	01.04.2023	458	15	473
41	Uttar Pradesh(Urban)	01.06.2023	673	34	706
	(Rural)		479	24	503
42	West Bengal (Urban)	01.04.2023	720	0	720
	(Rural)		709	0	709
43	D.V.C. (Jharkhand Area)	01.02.2024	463	26	488

(*Source: CEA Report on Tariff &Duty of electricity supply in India - March 2024)

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.504
ANSWERED ON 06.02.2025

ADDITIONAL ALLOCATION OF POWER TO KERALA

504. SHRI V K SREEKANDAN:

Will the Minister of POWER be pleased to state:

(a) whether the Government of Kerala has demanded additional allocation of power from Central power generating stations at affordable rates and if so, the details thereof along with the steps taken/being taken by the Union Government in this regard;

(b) whether it is a fact that the electricity demand had surpassed the projections in the past and the State Government expects the demand to rise by 4% to 5% this year and if so, the details thereof; and

(c) whether the State Government has submitted any proposals for the allocation of additional power from Central power generating stations and if so, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c): The details of anticipated/projected Energy Requirement vis-à-vis the Actual Energy Requirement of Kerala and Energy Supplied during the last three years and current year (upto December, 2024) are given at Annexure-I.

Accordingly, Kerala has been able to meet its Energy Requirement adequately with only a marginal gap between Energy Requirement and Energy Supplied.

The State of Kerala has made the following requests for additional allocation of power:

(i) Increase in the allocation to Kerala from 180 MW to 400 MW from Talcher II station of NTPC Ltd.

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(ii) Increase in the allocation from NTPC Barh thermal power station to Kerala to 400 MW and extend it up to June 2025, from current 177 MW till March 2025

(iii) Allocation of 350 MW from the Rajasthan Atomic Power Station of the Nuclear Power Corporation of India Ltd. (NPCIL) to Kerala.

As per the Government of India Guidelines for allocation of power from Central Sector Generating Stations, for thermal power plants, 10% of the power is allocated to the Home State, 15 % of the power is unallocated and placed at the disposal of the Central Government. The remaining 75 % of power is distributed among the States in the region in certain proportion as a firm share. In case of any constituent State/UT of the Region denies to avail its entitled share or part thereof in firm share, then same is offered to the States/UTs outside the Region.

Power of Talcher-II station (2000 MW capacity) of NTPC Ltd., has been allocated to States/ UT as per Power allocation guidelines. Kerala has been allocated 247 MW from Talcher-II Thermal Power Station (TPS), as its firm share, in addition 181.74 MW is also allocated out of unallocated share of Government of India.

Barh-II (1320 MW capacity) TPS is located in Bihar State and its entire power is allocated to the States/ UTs of Eastern Region. To ease the Power Supply situation, Government of India allocated 177 MW out of the surrendered firm share of Jharkhand & Sikkim, from this Thermal Power Station, to Kerala for the period 01.10.2024 to 31.03.2025. Further, considering the anticipated in power demand in summer months, Government of India has extended this allocation till 30.06.2025.

As per the Government of India Guidelines for allocation of power from Central Sector Generating Stations, for Nuclear power plants, 50% of the power is allocated to the Home State, 15 % of the power is unallocated and placed at the disposal of the Central Government. Remaining 35 % of power is distributed among the states in the region in certain proportion as a firm share. In case of any constituent State/UT of the Region denies to avail its entitled share or part thereof in firm share, then same will be offered to the States/UTs outside the Region.

The States/UTs of Northern Region have already been allocated the entire 1400 MW of power from Unit-7&8 of Rajasthan Atomic Power Station of the Nuclear Power Corporation of India Ltd. (NPCIL) as per Power allocation guidelines.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 504 ANSWERED IN THE LOK SABHA ON 06.02.2025

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The details of anticipated/projected Energy Requirement vis-à-vis the Actual Energy Requirement of Kerala during the last three years and current year (upto December 2024):

Year	Anticipated / Projected Energy Requirement	Actual Energy Requirement	Energy Supplied
	(MU)	(MU)	(MU)
2021-22	28,085	26,579	26,570
2022-23	28,204	27,747	27,726
2023-24	29,496	30,943	30,938
2024-25 (upto December 2024)	23,901	23,478	23,470

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.531
ANSWERED ON 06.02.2025

ADOPTION OF BATTERY SWAPPING TECHNOLOGY

531. SHRI ANURAG SINGH THAKUR:

Will the Minister of POWER
be pleased to state:

(a) the details of the measures taken/being taken by the Government to ensure uniform implementation of the 2024 Battery Swapping Guidelines across the country including collaboration with State Governments;

(b) the strategy framed by the Government to ensure equitable distribution of battery swapping stations in both urban and rural areas;

(c) the manner in which the public-private partnerships being leveraged to establish and expand battery-swapping infrastructure across the country;

(d) the details of the specific incentives or subsidies being planned to encourage the adoption of battery-swapping technology by small businesses and logistic operators;

(e) the manner in which the Government plan to address challenges related to interoperability of battery-swapping systems and standardization of technology; and

(f) whether there are any mechanisms for periodic review and monitoring of the environmental impact of battery-swapping infrastructure deployment and 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 Ministry of Power has issued "Guidelines for Installation and Operation of Battery Swapping and Charging Stations", vide OM dated 10th January 2025. These guidelines outline the standards and protocols to facilitate development of a nationwide network of Battery Swapping Stations (BSS). Key features involving State Governments in implementing these guidelines are:-

(i) A State level Steering Committee chaired by Secretary in-charge of Energy, comprising Secretaries of Transport, Municipal Administration and Urban Development, and other relevant officials, will plan and monitor the implementation of BSS Infrastructure at the State level.

(ii) Each state will designate a State Nodal Agency (SNA) responsible for coordinating with DISCOMs and the State Electricity Regulatory Commission (SERC) to facilitate electricity connections for BSS.

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(iii) A Central Steering Committee chaired by the Additional Secretary, Ministry of Power including Members from relevant Ministries, State representative, Bureau of Energy Efficiency (BEE), and the Central Electricity Authority (CEA) will periodically review the implementation of the guidelines.

(iv) BEE will work collaboratively with DISCOMs and State Government entities for implementation of the guidelines.

(c) & (d) : The guidelines emphasize the role of public-private partnerships (PPPs) in expanding the battery swapping infrastructure. Setting up BSS has been designated as a de-licensed activity, simplifying the process for businesses.

To make the land available at affordable rates, it has been suggested that public land be made available to Government or Public entities on a revenue-sharing model at ₹ 1 per kWh. For private entities, the land may be made available through a competitive bidding process at a floor price of ₹ 1 per kWh. Additionally, public tenders involving Government land for the establishment of BSS have been suggested to be kept technology agnostic. State Governments have been advised to permit round-the-clock operations for BSS.

Further, tariff for supply of electricity to BSS has been simplified. It has been advised to make tariff single part and limited to "Average Cost of Supply" till 31st March, 2028.

(e): At present the battery swapping is evolving and full interoperability among all Electric Vehicle (EV) users is not envisaged.

(f): To address and mitigate the environmental impacts caused by disposal of waste batteries generated by producers of batteries, Ministry of Environment Forest and Climate Change (MoEFCC) vide notification dated 22.08.2022 notified the Battery Waste Management Rules, 2022 for environmentally sound management of waste batteries.

Under the Rules, producers have been given the obligations of Extended Producer Responsibility for the batteries that they introduce in the market to ensure effective collection and recycling/ refurbishment of waste batteries. Further, the entities involved in collection, segregation and treatment have been obligated to hand over the waste batteries to the registered recycler or refurbisher.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.535
ANSWERED ON 06.02.2025

EXPANSION OF THERMAL POWER CAPACITY

535. SHRI Y S AVINASH REDDY:

Will the Minister of POWER be pleased to state:

(a) whether the Government proposes the expansion of thermal power capacity in the country and if so, the details thereof along with the estimated total cost for expansion of thermal power capacity;

(b) the steps taken/being taken to reduce dependency on coal-based power plants for decreasing emission levels in such thermal power plants; and

(c) the details of the percentage of electricity generated from various sources such as coal, gas, hydel and renewable energy during the last five years, State-wise along with the action planfor the expansion of thermal power capacity in the State of Andhra Pradesh in the coming years?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : In order to meet the estimated electricity demand by the year 2031-32, generation planning studies has been carried out by Central Electricity Authority (CEA). As per the study results, it is envisaged that to meet the base load requirement of the country in 2032, the required coal & lignite based installed capacity is 283 GW against the present installed capacity of 220.4 GW. Considering this, Government of India has proposed in November, 2023 for setting up of an additional minimum 80 GW coal based capacity by 2031-32.

The estimated capital cost for setting up of new coal based thermal capacity as considered in National Electricity Plan is Rs 8.34 Cr/ MW (at 2021-22 price level). Hence, the thermal capacity addition is expected to entail an expenditure of minimum Rs 6,67,200 Crs by 2031-32.

(b): Government has taken following steps to promote renewable energy and thereby, reducing dependency on coal based capacity and to decrease emission levels in Thermal Power Plants in the country:

.....2.

i. **Ministry of New & Renewable Energy (MNRE) has issued Bidding Trajectory for issuance of RE power procurement bids of 50 GW/annum by Renewable Energy Implementing Agencies from FY 2023-24 to FY 2027-28.**

ii. **Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.**

iii. **Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025, for Green Hydrogen Projects till December 2030 and for offshore wind projects till December 2032.**

iv. **To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act 2001 will attract penalties for non-compliance.**

v. **Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable RE (FDRE) projects have been issued.**

vi. **Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.**

vii. **Scheme for setting up of Ultra Mega Renewable Energy Parks is being implemented to provide land and transmission to RE developers for installation of RE projects at large scale.**

viii. **Laying of new transmission lines and creating new sub-station capacity has been funded under the Green Energy Corridor Scheme for evacuation of renewable power.**

ix. **"Strategy for Establishment of Offshore Wind Energy Projects" has been issued indicating a bidding trajectory of 37 GW by 2030 and various business models for project development.**

x. **The Offshore Wind Energy Lease Rules, 2023 have been notified vide Ministry of External Affairs notification dated 19th December 2023, to regulate the grant of lease of offshore areas for development of offshore wind energy projects.**

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xi. To augment transmission infrastructure needed for steep RE trajectory, transmission plan has been prepared till 2030.

xii. Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022, has been notified on 06th June 2022 with objective of ensuring access to affordable, reliable, and sustainable green energy for all. Green Energy Open Access is allowed to any consumer with contract demand of 100 kW or above through single or multiple single connection aggregating One Hundred kW or more located in same electricity division of a distribution licensee.

xiii. Green Term Ahead Market (GTAM) has been launched to facilitate sale of Renewable Energy Power through exchanges.

xiv. To achieve the objective of increased domestic production of Solar PV Modules, the Govt. of India is implementing the Production Linked Incentive (PLI) scheme for High Efficiency Solar PV Modules with an outlay of Rs. 24,000 crore. This will enable manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV Module.

xv. Promotion of installation of efficient Ultra Supercritical/Supercritical units over Subcritical Thermal Units.

xvi. Biomass co-firing- Ministry of Power has issued policy on Bio-mass Utilization for Power Generation through Co-firing in Coal based Power Plants to use 5-10% blend of biomass pellets made, primarily of agro-residue along with coal after assessing the technical feasibility.

xvii. MoEF&CC vide its notification dated 07.12.2015 and its subsequent amendments has notified norms in respect of reducing stack emissions from coal based Thermal Power Plants.

(c) : The details of percentage of electricity generated from various sources such, as coal, gas, hydel, and renewable energy in the Country from the year 2019-20 to the current year 2024-25 (up to December, 2024), are enclosed at Annexure - I.

The details of State-wise and Source-wise Generation from Conventional Sources and Renewable Energy Sources (RES) from the year 2019-21 to 2024-25 (up to December, 2024), are enclosed at Annexure - II.

At present, there is no thermal capacity under construction or under planning in the State of Andhra Pradesh

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 535 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Percentage of Electricity Generated from Various Sources

Year-Wise Generation from 2019-2020 to 2024-25 (Up to Dec)								
Source Name			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25 (upto Dec' 2024)
			% of Total Gen	% of Total Gen	% of Total Gen	% of Total Gen	% of Total Gen	% of Total Gen
Conventional	Thermal	Coal	69.2	68.82	69.81	70.54	72.50	69.94
		Lignite	2.37	2.21	2.49	2.23	1.95	1.79
		Diesel	0.01	0.01	0.01	0.01	0.02	0.02
		Naptha	0	0.01	0	0	0	0
		Natural gas	3.49	3.68	2.41	1.47	1.8	1.92
	Sub Total		75.07	74.72	74.72	74.25	76.28	73.67
	Nuclear		3.35	3.11	3.16	2.82	2.76	3.12
	Hydro		11.21	10.88	10.16	9.98	7.71	9.09
	Bhutan Import		0.42	0.63	0.5	0.42	0.27	0.38
Conventional Total			90.04	89.34	88.54	87.47	87.01	86.27
Renewable Energy Total			9.96	10.66	11.46	12.53	12.99	13.73
Grand Total			100	100	100	100	100	100

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 535 ANSWERED IN THE LOK SABHA ON 06.02.2025

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State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2019-20

(All Generation Figures are in Million Units)

Sl. No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0.00	96.19	0.00	0.00	0.00	0.00	0.00	0.00	96.19	0.00	11.60	0.00	0.00	5.70	0.00	17.30	113.49
2	Andhra Pradesh	56916.07	0.00	0.00	0.00	3013.62	3013.43	0.00	0.00	62943.12	7626.63	5855.11	147.47	58.49	298.19	7.31	13993.20	76936.32
3	Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	1786.46	0.00	0.00	1786.46	0.00	1.60	0.00	0.00	0.64	0.00	2.24	1788.70
4	Assam	3929.96	0.00	0.00	0.00	2808.73	1291.68	0.00	0.00	8030.37	0.00	6.14	0.00	0.00	52.63	0.00	58.77	8089.14
5	Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	5794.48	0.00	5794.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5794.48
6	Bihar	35360.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35360.76	0.00	160.16	19.19	160.35	18.98	0.00	358.68	35719.44
7	Chhattisgarh	117992.27	0.00	0.00	0.00	0.00	236.79	0.00	0.00	118229.06	0.00	326.42	679.70	0.00	101.75	0.00	1107.87	119336.93
8	Delhi	0.00	0.00	0.00	0.00	6015.11	0.00	0.00	0.00	6015.11	0.00	136.30	0.00	0.00	0.00	287.37	423.67	6438.78
9	Goa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.82	0.82
10	Gujarat	79011.04	0.00	5579.58	0.00	13515.42	5414.68	0.00	3428.60	106949.32	13748.53	3631.86	107.03	15.95	194.80	18.77	17716.93	124666.25
11	Haryana	16761.85	0.00	0.00	0.00	555.16	0.00	0.00	0.00	17317.01	0.00	125.14	186.90	94.57	326.89	0.00	733.50	18050.51
12	Himachal Pradesh	0.00	0.00	0.00	0.00	0.00	40834.88	0.00	0.00	40834.88	0.00	11.66	0.00	0.00	2155.58	0.00	2167.24	43002.12
13	Jammu and Kashmir	0.00	0.00	0.00	0.00	0.00	18094.12	0.00	0.00	18094.12	0.00	0.00	0.00	0.00	443.13	0.00	443.13	18537.25
14	Jharkhand	26072.08	0.00	0.00	0.00	0.00	150.96	0.00	0.00	26223.04	0.00	17.47	0.00	1.28	5.43	0.00	24.17	26247.21
15	Karnataka	23836.42	0.00	0.00	0.00	0.00	14014.27	0.00	7278.22	45128.91	10148.66	11221.20	171.27	2205.38	1901.91	0.00	25648.42	70777.33
16	Kerala	0.00	12.04	0.00	0.00	0.00	5454.04	0.00	0.00	5466.08	119.76	143.59	0.00	11.03	530.36	0.00	804.74	6270.82
17	Ladakh	0.00	0.00	0.00	0.00	0.00	270.28	0.00	0.00	270.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	270.28
18	Madhya Pradesh	114818.28	0.00	0.00	0.00	0.00	6281.74	0.00	0.00	121100.02	4425.99	3496.23	1.81	95.66	246.16	32.02	8297.88	129397.90
19	Maharashtra	107002.16	0.00	0.00	0.00	7999.04	5880.58	0.00	10536.43	131418.21	7984.27	2372.68	411.99	2520.45	695.56	0.84	13985.79	145404.00
20	Manipur	0.00	0.00	0.00	0.00	0.00	366.59	0.00	0.00	366.59	0.00	2.63	0.00	0.00	1.57	0.00	4.20	370.79
21	Meghalaya	0.00	0.00	0.00	0.00	0.00	1018.29	0.00	0.00	1018.29	0.00	0.00	0.00	0.00	62.73	0.00	62.73	1081.02
22	Mizoram	0.00	0.00	0.00	0.00	0.00	177.02	0.00	0.00	177.02	0.00	0.44	0.00	0.00	49.56	0.00	50.00	227.02
23	Nagaland	0.00	0.00	0.00	0.00	0.00	180.85	0.00	0.00	180.85	0.00	0.00	0.00	0.00	75.87	0.00	75.87	256.72
24	Odisha	41525.20	0.00	0.00	0.00	0.00	6728.77	0.00	0.00	48253.97	54.66	362.29	66.59	0.00	299.65	0.00	783.20	49037.17
25	Puducherry	0.00	0.00	0.00	0.00	255.79	0.00	0.00	0.00	255.79	0.00	4.14	0.00	0.00	0.00	0.00	4.14	259.93
26	Punjab	20901.67	0.00	0.00	0.00	0.00	5123.48	0.00	0.00	26025.15	0.00	1358.22	398.37	252.85	712.77	0.32	2722.53	28747.68
27	Rajasthan	38447.56	0.00	7403.55	0.00	1033.51	606.18	0.00	8451.58	55942.38	6172.70	7776.56	389.94	0.00	9.75	0.00	14348.96	70291.34
28	Sikkim	0.00	0.00	0.00	0.00	0.00	11027.36	0.00	0.00	11027.36	0.00	0.00	0.00	0.00	60.62	0.00	60.62	11087.98
29	Tamil Nadu	42880.83	0.00	19995.63	0.00	2869.99	4765.24	0.00	12986.33	83498.02	14126.93	4946.63	103.78	350.79	235.76	0.00	19763.89	103261.91
30	Telangana	47347.78	0.00	0.00	0.00	0.00	4507.04	0.00	0.00	51854.82	238.25	6263.92	124.30	102.23	46.29	19.25	6794.23	58649.05
31	Tripura	0.00	0.00	0.00	0.00	6092.94	0.00	0.00	0.00	6092.94	0.00	3.43	0.00	0.00	24.67	0.00	28.10	6121.04
32	Uttar Pradesh	117018.91	0.00	0.00	0.00	2296.54	1073.48	0.00	3791.29	124180.22	0.00	1447.05	129.63	3530.10	36.43	0.00	5143.20	129323.42
33	Uttarakhand	0.00	0.00	0.00	0.00	1986.79	14554.53	0.00	0.00	16541.32	0.00	341.51	0.00	110.26	742.19	0.00	1193.95	17735.27
34	West Bengal	71395.39	0.00	0.00	0.00	0.00	2916.38	0.00	0.00	74311.77	0.00	64.29	0.00	1295.07	115.68	0.00	1475.04	75786.81
35	Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.33	0.00	0.00	0.00	0.00	13.33	13.33
36	Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.02	0.00	0.00	0.00	0.00	28.02	28.02
	Grand Total	961218.23	108.23	32978.76	0.00	48442.64	155769.12	5794.48	46472.45	1250783.91	64646.38	50130.44	2937.97	10804.46	9451.24	365.88	138336.36	1389120.27

Note: Others includes Waste to Energy, etc.

State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2020-21

(All Generation Figures are in Million Units)

S.No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0	118.48	0	0	0	0	0	0	118.48	0.00	24.82	0.00	0.00	14.69	0.00	39.51	157.99
2	Andhra Pradesh	46145.71	0	0	0	3323.24	3280.12	0	0	52749.07	6557.75	6956.10	135.21	67.66	351.23	65.88	14133.83	66882.90
3	Arunachal Pradesh	0	0	0	0	0	3451.34	0	0	3451.34	0.00	1.54	0.00	0.00	0.55	0.00	2.10	3453.44
4	Assam	2976.74	0	0	0	2721.4	270.87	0	0	5969.01	0.00	13.37	0.00	0.00	38.15	0.00	51.51	6020.52
5	Bhutan	0	0	0	0	0	0	8765.5	0	8765.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8765.50
6	Bihar	33866.14	0	0	0	0	0	0	0	33866.14	0.00	160.63	21.30	1.48	43.20	0.00	226.61	34092.75
7	Chhattisgarh	134614.5	0	0	0	0	419.19	0	0	135033.69	0.00	370.80	1089.32	28.25	145.52	0.00	1633.89	136667.58
8	Delhi	0	0	0	0	5304.01	0	0	0	5304.01	0.00	189.99	0.00	0.00	0.00	236.71	426.70	5730.71
9	Goa	0	0	0	0	0	0	0	0	0	0.00	1.46	0.00	0.00	0.00	0.00	1.46	1.46
10	Gujarat	71637.55	0	5421.24	0	18877.2	4233.36	0	3712.96	103882.32	13058.52	4633.81	43.15	19.37	211.94	10.61	17977.39	121859.71
11	Haryana	13994.58	0	0	0	901.8	0	0	0	14896.38	0.00	162.95	178.88	142.34	276.58	0.00	760.75	15657.13
12	Himachal Pradesh	0	0	0	0	0	37473.47	0	0	37473.47	0.00	36.52	0.00	0.00	2123.78	0.00	2160.30	39633.77
13	Jammu and Kashmir	0	0	0	0	0	17002.68	0	0	17002.68	0.00	9.42	0.00	0.00	429.88	0.00	439.29	17441.97
14	Jharkhand	27219.97	0	0	0	0	223.09	0	0	27443.06	0.00	17.16	0.00	0.00	9.31	0.00	26.47	27469.53
15	Karnataka	19861.24	0	0	0	0	12587.35	0	7093.92	39542.51	9610.91	13238.86	211.79	2589.09	2199.68	0.00	27850.33	67392.84
16	Kerala	0	7.83	0	101.41	0	6628.39	0	0	6737.63	130.42	275.44	0.00	45.68	640.58	0.01	1092.12	7829.75
17	Ladakh	0	0	0	0	0	376.21	0	0	376.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	376.21
18	Madhya Pradesh	123089.78	0	0	0	0	6477.33	0	0	129567.11	3913.45	4202.03	0.48	82.57	281.76	37.57	8517.86	138084.97
19	Maharashtra	98173.83	0	0	0	5963.43	5548.46	0	7886.62	117572.34	6384.74	3089.46	328.23	3627.43	802.71	0.10	14232.67	131805.01
20	Manipur	0	0	0	0	0	621.62	0	0	621.62	0.00	7.71	0.00	0.00	0.00	0.00	7.71	629.33
21	Meghalaya	0	0	0	0	0	1151.99	0	0	1151.99	0.00	0.00	0.00	0.00	56.79	0.00	56.79	1208.78
22	Mizoram	0	0	0	0	0	158.85	0	0	158.85	0.00	2.45	0.00	0.00	31.07	0.00	33.52	192.37
23	Nagaland	0	0	0	0	0	203.86	0	0	203.86	0.00	0.00	0.00	0.00	69.77	0.00	69.77	273.63
24	Odisha	55206.47	0	0	0	0	6859.97	0	0	62066.44	0.00	476.26	42.71	0.00	358.80	0.00	877.77	62944.21
25	Puducherry	0	0	0	0	232.15	0	0	0	232.15	0.00	6.39	0.00	0.00	0.00	0.00	6.39	238.54
26	Punjab	17994.79	0	0	0	0	4747.03	0	0	22741.82	0.00	1356.48	585.99	231.50	690.33	0.17	2864.47	25606.29
27	Rajasthan	36738.05	0	8478.53	0	1018.69	469.63	0	7386.05	54090.95	5708.27	10384.24	413.24	0.00	10.64	0.00	16516.38	70607.33
28	Sikkim	0	0	0	0	0	10879.5	0	0	10879.5	0.00	0.00	0.00	0.00	55.96	0.00	55.96	10935.46
29	Tamil Nadu	32329.41	0	16605.9	0	2264.73	5212.71	0	13664.7	70077.48	14564.99	6115.48	152.23	581.57	244.77	0.00	21659.05	91736.53
30	Telangana	44760.76	0	0	0	0	3645.38	0	0	48406.14	220.91	6351.04	164.11	61.00	67.27	69.05	6933.37	55339.51
31	Tripura	0	0	0	0	7043.21	0	0	0	7043.21	0.00	6.04	0.00	0.00	9.58	0.00	15.62	7058.83
32	Uttar Pradesh	119592.96	0	0	0	2470.75	1572.35	0	3284.81	126920.87	0.00	1856.19	135.82	3590.87	164.91	0.00	5747.78	132668.65
33	Uttarakhand	0	0	0	0	721.97	13592.49	0	0	14314.46	0.00	329.64	0.00	85.33	821.88	0.00	1236.85	15551.31
34	West Bengal	72735.07	0	0	0	0	3212.28	0	0	75947.35	0.00	73.92	0.00	148.73	107.06	1200.99	1530.70	77478.05
35	Chandigarh	0	0	0	0	0	0	0	0	0	0.00	10.16	0.00	0.00	0.00	0.00	10.16	10.16
36	Dadra and Nagar Haveli and Daman and Diu	0	0	0	0	0	0	0	0	0	0.00	41.47	10.53	0.00	0.00	0.00	52.00	52.00
Grand Total		950937.55	126.31	30505.7	101.41	50842.59	150299.52	8765.5	43029.1	1234607.64	60149.952	60401.8062	3512.9779	11302.85	10258.4	1621.06	147247.06	1381854.698

Note: Others includes Waste to Energy, etc.

State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2021-22

(All Generation Figures are in Million Units)

S.No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0	117.24	0	0	0	0	0	0	117.24	0.00	21.51	0.00	0.00	13.26	0.00	34.77	152.01
2	Andhra Pradesh	53326.74	0	0	0	2094.34	3113.83	0	0	58534.91	7134.58	7832.51	104.85	72.70	384.08	133.88	15662.61	74197.52
3	Arunachal Pradesh	0	0	0	0	0	4161.28	0	0	4161.28	0.00	1.72	0.00	0.00	0.41	0.00	2.13	4163.41
4	Assam	4201.45	0	0	0	3399.1	676.24	0	0	8276.79	0.00	81.64	0.00	0.00	40.46	0.00	122.10	8398.89
5	Bhutan	0	0	0	0	0	0	7493.2	0	7493.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7493.20
6	Bihar	43940.4	0	0	0	0	0	0	0	43940.4	0.00	163.08	2.14	65.84	8.77	0.00	239.83	44180.23
7	Chhatisgarh	140870.87	0	0	0	0	404.13	0	0	141275	0.00	436.56	1307.27	8.70	185.67	0.00	1938.21	143213.21
8	Delhi	0	0	0	0	4948.57	0	0	0	4948.57	0.00	225.84	0.00	0.00	0.00	232.89	458.73	5407.30
9	Goa	0	0	0	0	0	0	0	0	0	0.00	15.93	0.00	0.00	0.00	0.89	16.82	16.82
10	Gujarat	43884.4	0	5684.02	0	7353.85	2621.51	0	3503.47	63047.25	17854.77	6774.50	0.00	18.16	192.10	0.00	24839.53	87886.78
11	Haryana	22847.43	0	0	0	120.3	0	0	0	22967.73	0.00	572.85	171.60	96.75	270.13	24.09	1135.42	24103.15
12	Himachal Pradesh	0	0	0	0	0	36459.64	0	0	36459.64	0.00	44.29	0.00	0.00	1999.47	0.00	2043.76	38503.40
13	Jammu and Kashmir	0	0	0	0	0	17074.02	0	0	17074.02	0.00	1.71	0.00	0.00	414.10	0.00	415.81	17489.83
14	Jharkhand	28338.72	0	0	0	0	547.96	0	0	28886.68	0.00	18.21	0.00	0.00	10.49	0.00	28.71	28915.39
15	Karnataka	30505.26	0	0	0	0	13936.46	0	7492.05	51933.77	9491.62	13169.43	174.08	3338.24	2460.91	0.00	28634.28	80568.05
16	Kerala	0	0	0	0	0	9317.44	0	0	9317.44	136.41	496.93	0.00	48.92	932.37	0.00	1614.62	10932.06
17	Ladakh	0	0	0	0	0	405.98	0	0	405.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	405.98
18	Madhya Pradesh	129634.45	0	0	0	0	4686.72	0	0	134321.17	4346.66	4006.70	25.35	82.20	221.43	34.40	8716.73	143037.90
19	Maharashtra	116485.92	0	0	0	6124.19	6007.38	0	8602.18	137219.67	7085.98	3187.18	316.79	4468.31	787.16	0.22	15845.64	153065.31
20	Manipur	0	0	0	0	0	455.48	0	0	455.48	0.00	6.72	0.00	0.00	0.00	0.00	6.72	462.20
21	Meghalaya	0	0	0	0	0	841.82	0	0	841.82	0.00	0.47	0.00	0.00	44.21	0.00	44.68	886.50
22	Mizoram	0	0	0	0	0	137.44	0	0	137.44	0.00	1.68	0.00	0.00	26.41	0.00	28.09	165.53
23	Nagaland	0	0	0	0	0	100.55	0	0	100.55	0.00	0.00	0.00	0.00	63.47	0.00	63.47	164.02
24	Odisha	60161.29	0	0	0	0	5230.63	0	0	65391.92	0.00	603.71	100.08	0.00	377.32	0.00	1081.10	66473.02
25	Puducherry	0	0	0	0	251.13	0	0	0	251.13	0.00	12.24	0.00	0.00	0.00	0.00	12.24	263.37
26	Punjab	24175.82	0	0	0	0	3709.73	0	0	27885.55	0.00	1473.41	576.83	208.30	983.37	0.24	3242.15	31127.70
27	Rajasthan	40846.37	0	8762.03	0	1499.01	481.84	0	8308.85	59898.1	6493.19	17219.88	378.40	0.00	7.85	0.00	24099.31	83997.41
28	Sikkim	0	0	0	0	0	11493.9	0	0	11493.9	0.00	0.00	0.00	0.00	12.35	0.00	12.35	11506.25
29	Tamil Nadu	36802.55	0	22648	0	1732.22	5212.07	0	15625.3	82020.09	15821.18	7172.88	116.66	657.40	293.17	0.00	24061.28	106081.37
30	Telangana	51550.06	0	0	0	0	5626.63	0	0	57176.69	275.69	6536.94	111.13	103.95	91.00	227.20	7345.89	64522.58
31	Tripura	0	0	0	0	6332.25	0	0	0	6332.25	0.00	6.18	0.00	0.00	1.44	0.00	7.62	6339.87
32	Uttar Pradesh	130698.93	0	0	0	1148.49	1402.68	0	3580.25	136830.35	0.00	2900.41	85.20	3160.39	162.54	20.40	6328.94	143159.29
33	Uttarakhand	0	0	0	0	1012.32	14332.13	0	0	15344.45	0.00	301.60	0.00	244.02	326.70	0.00	872.32	16216.77
34	West Bengal	83216.77	0	0	0	0	3189.84	0	0	86406.61	0.00	98.24	0.00	0.00	152.90	1593.96	1845.09	88251.70
35	Chandigarh	0	0	0	0	0	0	0	0	0	0.00	14.19	0.00	0.00	0.00	0.00	14.19	14.19
36	Dadra and Nagar Haveli and Daman and Diu	0	0	0	0	0	0	0	0	0	0.00	84.51	12.32	0.00	0.00	0.00	96.83	96.83
Grand Total		1041487.4	117.24	37094.04	0	36015.77	151627.33	7493.2	47112.1	1320947.07	68640.07	73483.64	3482.7	12573.9	10463.55	2268.17	170911.9934	1491859.1

Note: Others includes Waste to Energy, etc.

State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2022-23

(All Generation Figures are in Million Units)

S.No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0.00	214.57	0.00	0.00	0.00	0.00	0.00	0.00	214.57	0.00	23.94	0.00	0.00	13.94	0.00	37.88	252.45
2	Andhra Pradesh	60931.93	0.00	0.00	0.00	610.00	3747.58	0.00	0.00	65289.51	7426.46	8140.72	54.86	99.93	410.90	279.04	16411.91	81701.42
3	Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	4820.94	0.00	0.00	4820.94	0.00	22.27	0.00	0.00	2.55	0.03	24.85	4845.79
4	Assam	5026.24	0.00	0.00	0.00	3366.84	481.60	0.00	0.00	8874.68	0.00	216.35	0.00	0.00	62.66	0.00	279.01	9153.69
5	Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	6742.40	0.00	6742.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6742.40
6	Bihar	55200.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55200.21	0.00	169.53	0.00	106.68	12.63	0.00	288.85	55489.06
7	Chhatisgarh	142599.20	0.00	0.00	0.00	0.00	237.37	0.00	0.00	142836.57	0.00	635.42	1194.60	17.10	155.92	0.00	2003.05	144839.62
8	Delhi	0.00	0.00	0.00	0.00	3784.30	0.00	0.00	0.00	3784.30	0.00	236.11	0.00	0.00	0.00	294.09	530.20	4314.50
9	Goa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.87	0.00	0.00	0.00	5.09	19.96	19.96
10	Gujarat	47596.58	0.00	5726.35	0.00	2158.69	6133.14	0.00	3639.91	65254.67	19206.22	10335.32	0.00	5.76	213.10	2.24	29762.63	95017.30
11	Haryana	32136.68	0.00	0.00	0.00	2.59	0.00	0.00	0.00	32139.27	0.00	555.20	356.07	203.01	241.90	63.55	1419.73	33559.00
12	Himachal Pradesh	0.00	0.00	0.00	0.00	0.00	38666.98	0.00	0.00	38666.98	0.00	58.76	0.00	0.00	2854.07	0.00	2912.83	41579.81
13	Jammu and Kashmir	0.00	0.00	0.00	0.00	0.00	16777.42	0.00	0.00	16777.42	0.00	0.00	0.00	0.00	393.20	0.00	393.20	17170.62
14	Jharkhand	30472.78	0.00	0.00	0.00	0.00	305.47	0.00	0.00	30778.25	0.00	19.70	0.00	0.00	2.40	0.00	22.10	30800.35
15	Karnataka	35014.30	0.00	0.00	0.00	0.00	13157.34	0.00	7443.24	55614.88	9967.89	14153.79	106.90	3037.31	2308.59	0.00	29574.48	85189.36
16	Kerala	0.00	0.12	0.00	0.00	0.00	7989.00	0.00	0.00	7989.12	179.32	879.75	0.00	62.85	824.34	0.00	1946.26	9935.38
17	Ladakh	0.00	0.00	0.00	0.00	0.00	402.78	0.00	0.00	402.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	402.78
18	Lakshadweep	0.00	15.02	0.00	0.00	0.00	0.00	0.00	0.00	15.02	0.00	0.10	0.00	0.00	0.00	0.00	0.10	15.12
19	Madhya Pradesh	135838.47	0.00	0.00	0.00	0.00	7309.07	0.00	0.00	143147.54	4486.72	3839.30	38.76	113.05	357.97	36.93	8872.72	152020.26
20	Maharashtra	124477.47	0.00	0.00	0.00	2429.56	5894.29	0.00	8985.48	141786.80	7243.06	4387.85	236.48	4572.03	766.73	0.44	17206.59	158993.39
21	Manipur	0.00	0.00	0.00	0.00	0.00	477.98	0.00	0.00	477.98	0.00	8.17	0.00	0.00	0.00	0.63	8.79	486.77
22	Meghalaya	0.00	0.00	0.00	0.00	0.00	980.25	0.00	0.00	980.25	0.00	0.00	0.00	0.00	72.16	0.00	72.16	1052.41
23	Mizoram	0.00	0.00	0.00	0.00	0.00	204.13	0.00	0.00	204.13	0.00	3.21	0.00	0.00	59.06	0.00	62.27	266.40
24	Nagaland	0.00	0.00	0.00	0.00	0.00	177.37	0.00	0.00	177.37	0.00	0.00	0.00	0.00	111.95	0.00	111.95	289.32
25	Odisha	64874.24	0.00	0.00	0.00	0.00	5462.81	0.00	0.00	70337.05	0.00	706.24	60.95	0.00	424.92	0.00	1192.10	71529.15
26	Puducherry	0.00	0.00	0.00	0.00	233.07	0.00	0.00	0.00	233.07	0.00	12.24	0.00	0.00	0.00	0.00	12.24	245.31
27	Punjab	31506.16	0.00	0.00	0.00	0.00	4399.65	0.00	0.00	35905.81	0.00	2778.66	497.68	210.76	682.48	0.00	4169.58	40075.39
28	Rajasthan	46966.68	0.00	9001.71	0.00	1450.33	967.43	0.00	6587.27	64973.42	6111.41	34474.43	397.05	0.00	7.17	0.00	40990.05	105963.47
29	Sikkim	0.00	0.00	0.00	0.00	0.00	11696.79	0.00	0.00	11696.79	0.00	0.00	0.00	0.00	12.35	0.00	12.35	11709.14
30	Tamil Nadu	43761.00	0.00	21460.28	0.83	1861.12	5965.77	0.00	16012.57	89061.57	16913.85	9419.39	126.93	869.56	296.71	0.00	27626.45	116688.02
31	Telangana	50738.20	0.00	0.00	0.00	0.00	6010.07	0.00	0.00	56748.27	279.23	6745.46	21.48	132.94	91.71	159.08	7429.89	64178.16
32	Tripura	0.00	0.00	0.00	0.00	7079.48	0.00	0.00	0.00	7079.48	0.00	6.58	0.00	0.00	0.00	0.00	6.58	7086.06
33	Uttar Pradesh	151154.99	0.00	0.00	0.00	908.23	974.04	0.00	3192.62	156229.88	0.00	3674.02	66.35	3183.67	234.69	58.45	7217.18	163447.06
34	Uttarakhand	0.00	0.00	0.00	0.00	0.00	15435.77	0.00	0.00	15435.77	0.00	331.80	0.00	248.52	352.07	0.00	932.39	16368.16
35	West Bengal	87612.45	0.00	0.00	0.00	0.00	3423.73	0.00	0.00	91036.18	0.00	125.04	0.00	0.00	204.44	1629.64	1959.12	92995.30
36	Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.61	0.00	0.00	0.00	0.00	12.61	12.61
37	Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.40	3.22	0.00	0.00	0.00	30.62	30.62
Grand Total		1145907.58	229.71	36188.34	0.83	23884.21	162098.77	6742.40	45861.09	1420912.93	71814.16	102014.24	3161.32	12863.16	11170.61	2529.18	203552.68	1624465.61

Note: Others includes Waste to Energy, etc.

State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2023-24

(All Generation Figures are in Million Units)

S.No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0.00	335.79	0.00	0.00	0.00	0.00	0.00	0.00	335.79	0.00	27.50	0.00	0.00	12.00	0.00	39.50	375.29
2	Andhra Pradesh	71241.24	0.00	0.00	0.00	2.41	1373.19	0.00	0.00	72616.84	8644.00	8300.03	18.75	66.63	127.10	307.97	17464.48	90081.32
3	Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	4278.18	0.00	0.00	4278.18	0.00	1.89	0.00	0.00	0.66	0.00	2.55	4280.73
4	Assam	5058.11	0.00	0.00	0.00	3375.27	614.70	0.00	0.00	9048.08	0.00	316.31	0.00	0.00	64.20	0.75	381.26	9429.34
5	Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	4716.10	0.00	4716.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4716.10
6	Bihar	58361.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58361.80	0.00	195.19	0.00	140.98	5.92	0.00	342.08	58703.88
7	Chhattisgarh	162388.63	0.00	0.00	0.00	0.00	321.76	0.00	0.00	162710.39	0.00	943.75	1368.61	19.54	145.54	0.00	2477.44	165187.83
8	Delhi	0.00	0.00	0.00	0.00	3755.14	0.00	0.00	0.00	3755.14	0.00	206.53	0.00	0.00	0.00	522.28	728.81	4483.95
9	Goa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.99	0.00	0.00	0.00	7.96	67.95	67.95
10	Gujarat	70781.00	0.00	5816.43	0.00	8185.06	4556.33	0.00	7576.86	96915.68	24794.50	13468.91	0.00	2.13	217.68	0.00	38483.22	135398.90
11	Haryana	28060.15	0.00	0.00	0.00	137.28	0.00	0.00	0.00	28197.43	0.00	992.91	294.12	83.60	222.05	58.82	1651.50	29848.93
12	Himachal Pradesh	0.00	0.00	0.00	0.00	0.00	36365.85	0.00	0.00	36365.85	0.00	59.54	0.00	0.00	2526.98	0.00	2586.52	38952.37
13	Jammu and Kashmir	0.00	0.00	0.00	0.00	0.00	15874.24	0.00	0.00	15874.24	0.00	0.00	0.00	0.00	408.69	0.00	408.69	16282.93
14	Jharkhand	35764.81	0.00	0.00	0.00	0.00	196.80	0.00	0.00	35961.61	0.00	17.64	0.00	0.00	5.52	0.00	23.16	35984.77
15	Karnataka	44466.58	0.00	0.00	0.00	0.00	8973.17	0.00	7502.65	60942.40	10950.20	15404.09	47.45	2754.06	1370.76	0.00	30526.55	91468.95
16	Kerala	0.00	0.00	0.00	0.00	0.00	5155.72	0.00	0.00	5155.72	214.53	1195.28	0.00	78.08	716.31	0.04	2204.24	7359.96
17	Ladakh	0.00	0.00	0.00	0.00	0.00	388.48	0.00	0.00	388.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	388.48
18	Lakshadweep	0.00	64.79	0.00	0.00	0.00	0.00	0.00	0.00	64.79	0.00	0.09	0.00	0.00	0.00	0.00	0.09	64.88
19	Madhya Pradesh	148680.03	0.00	0.00	0.00	0.00	6444.78	0.00	0.00	155124.81	4949.78	4025.19	84.62	97.01	469.60	28.83	9655.02	164779.83
20	Maharashtra	132924.80	0.00	0.00	0.00	3970.83	5264.49	0.00	8112.38	150272.50	8228.97	5814.13	304.61	3495.82	888.48	33.40	18765.41	169037.91
21	Manipur	0.00	0.00	0.00	0.00	0.00	298.18	0.00	0.00	298.18	0.00	7.73	0.00	0.00	0.00	1.23	8.96	307.14
22	Meghalaya	0.00	0.00	0.00	0.00	0.00	808.58	0.00	0.00	808.58	0.00	0.00	0.00	0.00	66.55	0.00	66.55	875.13
23	Mizoram	0.00	0.00	0.00	0.00	0.00	118.63	0.00	0.00	118.63	0.00	3.19	0.00	0.00	95.93	0.00	99.11	217.74
24	Nagaland	0.00	0.00	0.00	0.00	0.00	165.47	0.00	0.00	165.47	0.00	0.00	0.00	0.00	81.14	0.00	81.14	246.61
25	Odisha	66019.81	0.00	0.00	0.00	0.00	6162.20	0.00	0.00	72182.01	0.00	757.69	96.07	0.00	407.97	0.00	1261.72	73443.73
26	Puducherry	0.00	0.00	0.00	0.00	224.10	0.00	0.00	0.00	224.10	0.00	12.24	0.00	0.00	0.00	0.00	12.24	236.34
27	Punjab	32462.85	0.00	0.00	0.00	0.00	4676.42	0.00	0.00	37139.27	0.00	2673.99	613.44	197.99	636.97	0.00	4122.40	41261.67
28	Rajasthan	51701.62	0.00	8776.46	0.00	1144.62	1013.97	0.00	7059.67	69696.34	8390.67	38363.28	387.55	0.00	7.45	0.00	47148.96	116845.30
29	Sikkim	0.00	0.00	0.00	0.00	0.00	8609.85	0.00	0.00	8609.85	0.00	0.00	0.00	0.00	12.35	0.00	12.35	8622.20
30	Tamil Nadu	54058.30	0.00	19356.90	0.03	1918.59	3563.28	0.00	14811.22	93708.32	16908.08	11737.48	129.14	622.61	206.00	0.00	29603.31	123311.63
31	Telangana	56913.73	0.00	0.00	0.00	0.00	1243.29	0.00	0.00	58157.02	304.63	6884.68	10.57	95.08	58.87	155.29	7509.10	65666.12
32	Tripura	0.00	0.00	0.00	0.00	6353.31	0.00	0.00	0.00	6353.31	0.00	7.01	0.00	0.00	0.00	0.00	7.01	6360.32
33	Uttar Pradesh	152505.20	0.00	0.00	0.00	1619.52	850.64	0.00	2874.63	157849.99	0.00	3971.31	46.65	2923.55	175.24	84.85	7201.59	165051.58
34	Uttarakhand	0.00	0.00	0.00	0.00	609.78	13919.23	0.00	0.00	14529.01	0.00	331.80	0.00	248.52	350.62	0.00	930.94	15459.95
35	West Bengal	89513.96	0.00	0.00	0.00	0.00	2816.49	0.00	0.00	92330.45	0.00	168.32	2.49	0.00	204.46	1545.13	1920.39	94250.84
36	Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.70	0.00	0.00	0.00	0.00	11.70	11.70
37	Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.74	13.12	0.00	0.00	0.00	28.86	28.86
Grand Total		1260902.62	400.58	33949.79	0.03	31295.91	134053.92	4716.10	47937.41	1513256.36	83385.35	115975.11	3417.19	10825.59	9485.04	2746.55	225834.83	1739091.19

Note: Others includes Waste to Energy, etc.

State/UT Fuel-Wise Generation from Conventional and Renewable Sources in the Country for the year 2024-25 (upto December, 2024)

(All Generation Figures are in Million Units)

S.No	State	Conventional Sources									Renewable Source							Grand Total
		Thermal					Hydro	Bhutan Import	Nuclear	Conventional Total	Wind	Solar	Biomass	Bagasse	Small Hydro	Others	Renewable Energy Total	
		Coal	Diesel	Lignite	Naptha	Natural Gas												
1	Andaman & Nicobar Islands	0.00	278.31	0.00	0.00	0.00	0.00	0.00	0.00	278.31	0.00	18.13	0.00	0.00	12.81	0.00	30.94	309.25
2	Andhra Pradesh	52879.08	0.00	0.00	0.00	34.04	2684.39	0.00	0.00	55597.51	6028.69	5669.37	13.68	33.39	182.39	227.52	12155.04	67752.55
3	Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	3770.19	0.00	0.00	3770.19	0.00	0.89	0.00	0.00	0.44	0.00	1.32	3771.51
4	Assam	3683.97	0.00	0.00	0.00	2555.49	842.47	0.00	0.00	7081.93	0.00	229.07	0.00	0.00	186.31	0.26	415.63	7497.56
5	Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	5240.20	0.00	5240.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5240.20
6	Bihar	45481.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45481.55	0.00	238.63	0.00	33.70	11.93	0.00	284.26	45765.81
7	Chhatisgarh	122204.91	0.00	0.00	0.00	0.00	286.72	0.00	0.00	122491.63	0.00	1085.56	1135.65	6.28	125.33	0.00	2352.81	124844.44
8	Delhi	0.00	0.00	0.00	0.00	3354.59	0.00	0.00	0.00	3354.59	0.00	154.90	0.00	0.00	0.00	418.05	572.95	3927.54
9	Goa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.83	0.00	0.00	0.00	6.10	48.93	48.93
10	Gujarat	59938.24	0.00	3940.25	0.00	7849.86	5140.62	0.00	8910.06	85779.03	19654.70	13405.20	43.48	0.00	129.07	0.00	33232.45	119011.48
11	Haryana	23519.35	0.00	0.00	0.00	215.37	0.00	0.00	0.00	23734.72	0.00	1103.36	263.14	44.60	202.62	39.65	1653.37	25388.09
12	Himachal Pradesh	0.00	0.00	0.00	0.00	0.00	35641.35	0.00	0.00	35641.35	0.00	69.54	0.00	0.00	2807.17	0.00	2876.71	38518.06
13	Jammu and Kashmir	0.00	0.00	0.00	0.00	0.00	13580.17	0.00	0.00	13580.17	0.00	0.00	0.00	0.00	351.55	0.00	351.55	13931.72
14	Jharkhand	29477.22	0.00	0.00	0.00	0.00	227.73	0.00	0.00	29704.95	0.00	13.23	0.00	0.00	2.10	0.00	15.33	29720.28
15	Karnataka	31271.54	0.00	0.00	0.00	0.00	9993.66	0.00	5704.49	46969.69	11029.54	11113.02	23.36	1339.14	1993.91	0.00	25498.96	72468.65
16	Kerala	0.00	1.53	0.00	0.00	0.00	5417.55	0.00	0.00	5419.08	98.27	1206.56	0.00	20.53	711.17	43.39	2079.91	7498.99
17	Ladakh	0.00	0.00	0.00	0.00	0.00	373.52	0.00	0.00	373.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	373.52
18	Lakshadweep	0.00	49.71	0.00	0.00	0.00	0.00	0.00	0.00	49.71	0.00	0.07	0.00	0.00	0.00	0.00	0.07	49.78
19	Madhya Pradesh	107974.90	0.00	0.00	0.00	0.00	6249.91	0.00	0.00	114224.81	3700.92	4704.07	44.23	60.30	364.63	47.59	8921.74	123146.55
20	Maharashtra	96698.14	0.00	0.00	0.00	4461.65	4048.56	0.00	6950.43	112158.78	6778.69	5265.44	185.92	1427.04	624.77	65.70	14347.56	126506.34
21	Manipur	0.00	0.00	0.00	0.00	0.00	580.84	0.00	0.00	580.84	0.00	6.46	0.00	0.00	0.00	0.00	6.46	587.30
22	Meghalaya	0.00	0.00	0.00	0.00	0.00	809.90	0.00	0.00	809.90	0.00	0.00	0.00	0.00	102.96	0.00	102.96	912.86
23	Mizoram	0.00	0.00	0.00	0.00	0.00	218.69	0.00	0.00	218.69	0.00	16.73	0.00	0.00	43.83	0.00	60.56	279.25
24	Nagaland	0.00	0.00	0.00	0.00	0.00	203.12	0.00	0.00	203.12	0.00	0.00	0.00	0.00	93.01	0.00	93.01	296.13
25	Odisha	51004.53	0.00	0.00	0.00	0.00	5123.09	0.00	0.00	56127.62	0.00	570.94	49.43	0.00	392.68	0.00	1013.05	57140.67
26	Puducherry	0.00	0.00	0.00	0.00	158.00	0.00	0.00	0.00	158.00	0.00	9.18	0.00	0.00	0.00	0.00	9.18	167.18
27	Punjab	25957.84	0.00	0.00	0.00	0.00	3449.60	0.00	0.00	29407.44	0.00	1030.97	511.31	187.36	630.33	0.00	2359.97	31767.41
28	Rajasthan	41648.64	0.00	6290.10	0.00	763.05	526.04	0.00	5817.48	55045.31	5503.12	35949.22	291.23	0.00	1.61	0.00	41745.18	96790.49
29	Sikkim	0.00	0.00	0.00	0.00	0.00	1858.46	0.00	0.00	1858.46	0.00	0.00	0.00	0.00	9.27	0.00	9.27	1867.73
30	Tamil Nadu	40447.61	0.00	14533.98	0.00	1295.75	3667.34	0.00	12847.72	72792.40	14955.10	11207.25	80.02	252.84	194.21	0.00	26689.43	99481.83
31	Telangana	41308.01	0.00	0.00	0.00	0.00	4796.51	0.00	0.00	46104.52	234.36	4942.51	7.78	28.80	62.95	192.54	5468.94	51573.46
32	Tripura	0.00	0.00	0.00	0.00	3812.95	0.00	0.00	0.00	3812.95	0.00	4.39	0.00	0.00	0.00	0.00	4.39	3817.34
33	Uttar Pradesh	121857.35	0.00	0.00	0.00	1198.95	930.95	0.00	2799.83	126787.08	0.00	3600.06	38.18	1131.34	118.63	25.29	4913.49	131700.57
34	Uttarakhand	0.00	0.00	0.00	0.00	836.59	12832.82	0.00	0.00	13669.41	0.00	248.85	0.00	186.39	265.05	0.00	700.29	14369.70
35	West Bengal	69765.64	0.00	0.00	0.00	0.00	2167.30	0.00	0.00	71932.94	0.00	214.20	0.00	0.00	145.73	1085.60	1445.52	73378.46
36	Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.59	0.00	0.00	0.00	0.00	7.59	7.59
37	Dadra and Nagar Haveli and Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.34	9.37	0.00	0.00	0.00	20.71	20.71
	Grand Total	965118.52	329.55	24764.33	0.00	26536.29	125421.50	5240.20	43030.01	1190440.40	67983.39	102139.54	2696.77	4751.71	9766.44	2151.69	189489.54	1379929.94

Note: Others includes Waste to Energy, etc.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.582
ANSWERED ON 06.02.2025

POWER DEMAND OF KERALA

582. DR. SHASHI THAROOR:

Will the Minister of POWER be pleased to state:

(a) whether the Government has any plans to increase the allocation of power from National Thermal Power Corporation (NTPC) Ltd.'s Talcher II Station to Kerala, from 180 megawatts (MWs) to 400 MW considering the summer power demand of Kerala, if so, the details thereof and if not, the reasons therefor;

(b) whether the Government proposes to increase the allocation from NTPC Barh Thermal Power Station to Kerala to 400 MW by extending it upto June 2025, from the current 177 MW till March 2025, as it will help stave off power shortages in summers, if so, the details thereof and if not, the reasons therefor; and

(c) whether the Government would consider allocating 350 MW from the Rajasthan Atomic Power Station of the Nuclear Power Corporation of India Ltd. (NPCIL) to Kerala, if so, the details thereof and 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) : As per the Government of India Guidelines for allocation of power from Central Sector Generating Stations, for thermal power plants, 10% of the power is allocated to the Home State, 15% of the power is unallocated and placed at the disposal of the Central Government. The remaining 75% of power is distributed among the States in the region in certain proportion as a firm share. In case of any constituent State/UT of the Region denies to avail its entitled share or part thereof in firm share, then same is offered to the States/UTs outside the Region.

.....2.

Power of Talcher-II station (2000 MW capacity) of NTPC Ltd., has been allocated to States/ UT as per Power allocation guidelines. Kerala has been allocated 247 MW from Talcher-II Thermal Power Station (TPS), as its firm share, in addition 181.74 MW is also allocated out of unallocated share of Government of India.

Barh-II (1320 MW capacity) TPS is located in Bihar State and its entire power is allocated to the States/ UTs of Eastern Region. To ease the Power Supply situation, Government of India allocated 177 MW out of the surrendered firm share of Jharkhand & Sikkim, from this Thermal Power Station, to Kerala for the period 01.10.2024 to 31.03.2025. Further, considering the rising trend in power demand, the Government of India has extended this allocation till 30.06.2025.

(c) : As per the Government of India Guidelines for allocation of power from Central Sector Generating Stations, for Nuclear power plants, 50% of the power is allocated to the Home State, 15 % of the power is unallocated and placed at the disposal of the Central Government. Remaining 35 % of power is distributed among the states in the region in certain proportion as a firm share. In case of any constituent State/UT of the Region denies to avail its entitled share or part thereof in firm share, then same will be offered to the States/UTs outside the Region.

The States/UTs of Northern Region have already been allocated the entire1400 MW of power from Unit-7&8 of Rajasthan Atomic Power Station of the Nuclear Power Corporation of India Ltd. (NPCIL) as per Power allocation guidelines.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.583
ANSWERED ON 06.02.2025

AVAILABILITY OF POWER IN BIHAR

583. SHRI JANARDAN SINGH SIGRIWAL:

Will the Minister of POWER
be pleased to state:

(a) whether the Government has made any effort to improve the availability of power across the country;

(b) if so, the details thereof;

(c) the details of power availability in Bihar along with demand and supply ratio of electricity; and

(d) the details of the villages which have been connected with electricity for improving power supply in rural areas in Bihar during the last five years and the current year?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b): There is adequate availability of power in the country. Present installed generation capacity of the country is 462 GW. Government of India has addressed the critical issue of power deficiency by adding 230 GW of generation capacity since April, 2014 transforming the country from power deficit to power sufficient. The details of All India Actual Power Supply Position of the country during the last five years and current year (upto December 2024), are given at Annexure-I.

Energy Supplied has been by and large commensurate to the Energy Requirement. Marginal gap between Energy Requirement and Energy Supplied is generally on account of constraints in the State transmission/distribution network.

Further, the Government of India has taken following steps to improve the availability of power across the country:

1. **Generation Planning:**

(i) Installed generation capacity in 2031-32 is likely to be 874 GW. This includes capacity from conventional sources- Coal, Lignite etc., renewable sources- Solar, Wind and Hydro.

(ii) With a view to ensure generation capacity remains ahead of projected peak demand, 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.

(iii) All the States were advised to initiate process for creation of generation capacities; from all generation sources, as per their Resource Adequacy Plans.

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

(A) Ministry of Power, in consultation with States, has envisaged a plan to add thermal capacity of a minimum 80,000 MW by 2031-32. Against this target, 28,020 MW Thermal Capacity is already under construction and contracts for 19,200 MW thermal capacity have been awarded in FY 2024-25. Further, 36,320 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 8,000 MW Pumped Storage Projects (PSPs) are under construction and 24,225.5 MW of Hydro Electric Projects and 50,760 MW of PSPs 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) 147,160 MW Renewable Capacity including 84,190 MW of Solar, 26,200 MW of Wind and 36,330 MW Hybrid power is under construction while 79,270 MW of Renewable Capacity including 50,830 MW of Solar, 600 MW of Wind and 27,840 MW Hybrid Power is at various stages of planning and targeted to be completed by 2029-30.

(E) Six (06) Battery Energy Storage System (BESS) projects of 522.60 MW capacity are under construction and 45 BESS projects of 14,242.29 MW capacity are at various stages of planning.

2. Transmission Planning: Inter and Intra-State Transmission System has been planned and implementation of the same is taken up in matching time frame of generation capacity addition. As per the National Electricity Plan, about 1,91,474 ckm of transmission lines and 1274 GVA of transformation capacity is planned to be added (at 220 kV and above voltage level) during the ten year period from 2022-23 to 2031-32.

3. Distribution System Planning:

(i) Government of India has been supporting the States/ UTs through 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. Under these scheme, projects worth Rs. 1.85 lakh Cr. were executed for strengthening of power distribution infrastructure. A total of 18,374 villages were electrified under the DDUGJY and 2.86 Cr households were electrified during SAUBHAGYA.

(ii) Further, Government of India launched Revamped Distribution Sector Scheme (RDSS) in July, 2021 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, infrastructure works worth Rs. 2.78 lakh Cr. have been sanctioned for the distribution utilities.

(iii) Government of India is further supporting States for grid electrification of left-out households during SAUBHAGYA, under the ongoing scheme of RDSS. In addition, all identified households belonging to Particularly Vulnerable Tribal Group (PVTG) under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and tribal households 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. 4,535 Cr. have been sanctioned for electrification of 9,97,680 households including PVTG households identified under PM-JANMAN and tribal households identified under DA-JGUA.

(iv) With collective efforts of Centre and States/UTs, the average hours of supply in rural and urban areas have improved to 21.9 hrs and 23.4 hrs, respectively, in FY 2024.

4. Promotion of Renewable Energy Generation:

(i) Ministry of New & Renewable Energy (MNRE) has issued Bidding Trajectory for issuance of RE power procurement bids of 50 GW/annum by Renewable Energy Implementing Agencies from FY 2023-24 to FY 2027-28.

(ii) Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.

(iii) Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025, for Green Hydrogen Projects till December, 2030 and for offshore wind projects till December, 2032.

(iv) To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act, 2001 will attract penalties for non-compliance.

(v) Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar, Wind, Wind-Solar Hybrid and Firm & Dispatchable RE (FDRE) projects have been issued.

(vi) Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.

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

(viii) Laying of new transmission lines and creating new sub-station capacity has been funded under the Green Energy Corridor Scheme for evacuation of renewable power.

(ix) "Strategy for Establishment of Offshore Wind Energy Projects" has been issued indicating a bidding trajectory of 37 GW by 2030 and various business models for project development.

(x) **The Offshore Wind Energy Lease Rules, 2023 have been notified vide Ministry of External Affairs notification dated 19th December 2023, to regulate the grant of lease of offshore areas for development of offshore wind energy projects.**

(xi) **To achieve the objective of increased domestic production of Solar PV Modules, the Govt. of India is implementing the Production Linked Incentive (PLI) scheme for High Efficiency Solar PV Modules. This will enable manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV Module**

(c): The details of power supply position in Bihar for the last five years and current year (upto December 2024) along with demand and supply ratio of electricity are given at Annexure-II.

(d): Electricity being a concurrent subject, the supply and distribution of electricity to the consumers is within the purview of the respective State Government/ Power Utility. Government of India has been supplementing the efforts of the States/ UTs for improving power supply in rural areas.

In the State of Bihar, electrification of a total of 2,906 villages and 32,59,041 HHs was achieved under the scheme of DDUGJY and SAUBHAGYA respectively.

Under RDSS, 42,635 HHs have been sanctioned for grid electrification in the State of Bihar including works sanctioned for HHs belonging to PVTG, identified under PM-JANMAN.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 583 ANSWERED IN THE LOK SABHA ON 06.02.2025

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The details of All India Actual Power Supply Position of the country during the last five years and current year (upto December 2024):

Year	Energy Requirement	Energy Supplied	Energy Not Supplied	
	(MU)	(MU)	(MU)	%
2019-20	12,91,010	12,84,444	6,566	0.5
2020-21	12,75,534	12,70,663	4,871	0.4
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 December 2024)	12,80,037	12,78,565	1472	0.1

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 583 ANSWERED IN THE LOK SABHA ON 06.02.2025

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The details of power supply position in Bihar for the last five years and current year (upto December 2024) along with demand and supply ratio of electricity

Year	Energy Requirement (MU)	Energy Supplied (MU)	Demand and Supply ratio
2019-20	31,627	31,533	0.997
2020-21	34,171	34,018	0.996
2021-22	36,216	35,761	0.987
2022-23	39,545	38,762	0.980
2023-24	41,514	40,918	0.986
2024-25 (Upto December 2024)	35,400	35,246	0.996

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.594
ANSWERED ON 06.02.2025

SAUBHAGYA YOJANA

†594. SHRI BIDYUT BARAN MAHATO:

Will the Minister of POWER
be pleased to state:

(a) the current status of providing electricity connections to houses under 'Saubhagya Yojana' in the country particularly in Jharkhand; and

(b) whether the Government is running any special project to improve electricity supply across the country and if so, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : Government of India (GoI) launched the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) in October, 2017 with the objective of providing electricity connections to all willing un-electrified households in rural areas and all willing poor households in urban areas in the country. All works sanctioned under SAUBHAGYA have been successfully completed and the scheme stands closed as on 31.03.2022.

As reported by the States, around 2.86 Cr. households, including 17,30,708 nos. of households in the State of Jharkhand, have been electrified during the SAUBHAGYA period.

(b) : GoI launched the Revamped Distribution Sector Scheme (RDSS) in July 2021 to improve the operational efficiency and financial sustainability of the Distribution Sector. Under the scheme, projects worth Rs. 2.78 lakh Cr. have been sanctioned which includes loss reduction infrastructure and smart metering works. GoI is further supporting States for on-grid electrification of left-out households during SAUBHAGYA under RDSS as per the scheme guidelines. Till date, based on survey done by distribution utilities, works amounting to Rs. 4,538 Cr. have been sanctioned for grid electrification of 9,97,680 households. This includes grid electrification works for households belonging to Particularly Vulnerable Tribal Group (PVTG) identified under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and tribal households as well as public places identified under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan).

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.643
ANSWERED ON 06.02.2025

BATTERY SWAPPING STATIONS

†643. SHRI SANJAY UTTAMRAO DESHMUKH:

Will the Minister of POWER
be pleased to state:

(a) the details of the establishment of battery swapping stations both in urban and rural areas in the country, State-wise;

(b) whether the Government has any proposal to expand the same and if so, the details thereof;

(c) whether the Government has any strategy to implement these guidelines and co-operate with the State Governments so that the strategic establishment of battery swapping stations both in urban and rural areas can be ensured;

(d) if so, the details thereof;

(e) the manner in which the Government sees the role of public-private partnership in the expansion of battery swapping infrastructure;

(f) whether the Government considers electricity to be an important factor in the lives of common people; and

(g) if so, the steps taken/being taken by the Government to provide round the clock electricity to the people by 2025?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): As on 27th January, 2025, as per data available with Bureau of Energy Efficiency (BEE), 2611 battery swapping stations (BSS) have been deployed across the country. State-wise details are at Annexure.

(b) : To ensure widespread availability of BSS, the Ministry of Power in its *Guidelines for Installation and Operation of Battery Swapping and Charging Stations* issued on 10th January 2025, recommended establishing BSS on both sides of highways, expressways and major roads, and in urban areas as specified.

(c) & (d) : The Ministry of Power has issued "Guidelines for Installation and Operation of Battery Swapping and Charging Stations" on 10th January 2025. These guidelines outline the standards and protocols to facilitate development of a nationwide network of BSS. Key features involving State Governments in implementing these guidelines are:-

(i) A State level Steering Committee chaired by Secretary in-charge of Energy, comprising Secretaries of Transport, Municipal Administration and Urban Development, and other relevant officials, will plan and monitor the implementation of BSS Infrastructure at the State level.

(ii) Each state will designate a State Nodal Agency responsible for coordinating with DISCOMs and the State Electricity Regulatory Commission to facilitate electricity connections for BSS.

(iii) A Central Steering Committee chaired by the Additional Secretary, Ministry of Power including Members from relevant Ministries, State representative, BEE, and the Central Electricity Authority(CEA) will periodically review the implementation of the guidelines.

(iv) BEE will work collaboratively with DISCOMs and State Government entities for implementation of the guidelines.

(e) : The guidelines emphasize the role of public-private partnerships in expanding the battery swapping infrastructure. Setting up BSS has been designated as de-licensed activity, simplifying the process for businesses.

To make the land available at affordable rates, it has been suggested that public land be made available to Government or Public entities on a revenue-sharing model at ₹ 1 per kWh. For private entities, the land may be made available through a competitive bidding process at a floor price of ₹ 1 per kWh. Additionally, public tenders involving government land for the establishment of BSS have been suggested to be kept technology agnostic. State Governments have been advised to permit round-the-clock operations for BSS.

(f) & (g): Electricity being a concurrent subject, supply and distribution of electricity to the consumers is within the purview of the respective State Government/Power Utility. The steps taken by the Government to provide round the clock electricity to the people are as follows:

1. **There is adequate availability of power in the country. Present installed generation capacity of the country is 462 GW. Government of India has addressed the critical issue of power deficiency by adding 230 GW of generation capacity since April, 2014 transforming the country from power deficit to power sufficient.**
2. **As per the Electricity (Rights of Consumers) Rules, 2020, the distribution licensee shall supply 24x7 power to all consumers. However, the Commission may specify lower hours of supply for some categories of consumers like agriculture.**

3. **To optimize power resources and ensure adequate generation capacity, the Ministry of Power (MoP) notified rules in December 2022, followed by detailed guidelines in June 2023. These guidelines mandate preparation of a Long-term National Resource Adequacy Plan (LT-NRAP) by the Central Electricity Authority, outlining the optimal generation mix for the next decade to meet national demand at least cost. 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.**

4. **To ensure the power availability at the Discom's periphery, Inter and Intra-State Transmission System has been planned and implementation of the same is taken up in matching time frame of generation capacity addition. As per the National Electricity Plan, about 1,91,474 ckm of transmission lines and 1274 GVA of transformation capacity is planned to be added (at 220 kV and above voltage level) during the ten year period from 2022-23 to 2031-32.**

5. **Government of India has been supporting the States/ UTs through 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 these scheme, projects worth Rs. 1.85 lakh Cr. were executed for strengthening of power distribution infrastructure. A total of 18,374 villages were electrified under the DDUGJY and 2.86 Cr households were electrified during SAUBHAGYA.**

6. **Further, Government of India launched the Revamped Distribution Sector Scheme (RDSS) in July, 2021 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, infrastructure works worth Rs. 2.78 lakh Cr. have been sanctioned for the distribution utilities.**

7. **Government of India is further supporting States for grid electrification of left-out households during SAUBHAGYA, under the ongoing scheme of RDSS. In addition, all identified households belonging to Particularly Vulnerable Tribal Group (PVTG) under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and tribal households under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan) are being sanctioned for on-grid electricity connection under RDSS, as per the Scheme guidelines.**

   The works sanctioned under RDSS also include-

   a. **Works worth Rs. 4,535 Cr. have been sanctioned for electrification of 9,97,680 households including PVTG households identified under PM-JANMAN and tribal households identified under DA-JGUA.**

   b. **Works worth Rs. 1,067 Cr. for extension of electricity distribution infrastructure to far flung Border Areas in the States of Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh and UT of Ladakh.**

With collective efforts of Centre and States/UTs, the average hours of supply in rural and urban areas have improved to 21.9 hrs and 23.4 hrs, respectively, in FY 2024.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 643 ANSWERED IN THE LOK SABHA ON 06.02.2025

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State / UT wise deployed BSS

Sl. No.	State	No. of BSS
1	Andhra Pradesh	2
2	Bihar	48
3	Delhi	878
4	Haryana	171
5	Karnataka	347
6	Kerala	20
7	Madhya Pradesh	2
8	Maharashtra	24
9	Orissa	2
10	Punjab	22
11	Rajasthan	104
12	Telangana	146
13	Uttar Pradesh	839
14	Uttarakhand	5
15	West Bengal	1
Total		2,611

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.646
ANSWERED ON 06.02.2025

IMPLEMENTATION OF EV INFRASTRUCTURE

646. SMT. SAJDA AHMED:

Will the Minister of POWER be pleased to state:

(a) whether the Government has formulated robust guidelines for battery swapping and charging infrastructure and if so, the details thereof;

(b) the manner in which the Government is planning to address the challenges such as standardization of battery technologies and interoperability; and

(c) the details of the incentives or support that have been proposed for stakeholders to fast-track the implementation of Electric Vehicle (EV) infrastructure?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The Ministry of Power has issued "Guidelines for Installation and Operation of Battery Swapping and Charging Stations" on 10th January 2025. These guidelines outline the standards and protocols to facilitate development of a nationwide network of Battery Charging Station (BCS) and Battery Swapping Stations (BSS). The salient features of the guidelines are as follows:

i. **Setting up Battery Swapping Stations (BSS) and Battery Charging Stations (BCS) has been designated as a de-licensed activity, simplifying the process for businesses.**

ii. **DISCOMs have been suggested to provide electricity connections up to 150 kW with expedited timelines and clear Standard Operating Procedure (SOP) to BSS & BSS.**

.....2.

iii. To make the land available at affordable rates, it has been suggested that public land be made available to Government or Public entities on a revenue-sharing model at ₹ 1 per kWh. For private entities, the land may be made available through a competitive bidding process at a floor price of ₹ 1 per kWh.

iv. Additionally, public tenders involving government land for the establishment of BCS/BSS have been suggested to be kept technology agnostic.

v. State Governments have been advised to permit round-the-clock operations for BCS and BSS.

vi. Urban areas to have a battery charging/swapping station every 1 sq. km, and highways every 20 km and for Heavy Duty Vehicles every 100 km.

(b) : At present the battery swapping is evolving and full interoperability among all Electric Vehicle (EV) users is not envisaged.

(c) : Ministry of Power has issued "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024" on 17th September 2024 to facilitate the development of EV charging infrastructure network in the country. The salient features of the above mentioned guidelines are as follows:

i. Setting up EV Charging Stations has been designated as a de-licensed activity, simplifying the process for businesses.

ii. To facilitate electricity connection for EV charging stations, timelines have been specified. Owners of EV charging stations may opt for Low Tension (LT) connection for loads up to 150 kW.

iii. To make the land available at affordable rates for setting up of EV charging station,it has been suggested that public land be made available to Government or Public entities on a revenue-sharing model at ₹ 1 per kWh. For private entities, the land may be made available through a competitive bidding process at a floor price of ₹ 1 per kWh.

iv. Tariff for supply of electricity to EV charging stations has been simplified. It has been advised to make tariff single part and limited to "Average Cost of Supply" till 31st March 2028.

.....3.

v. **Residential owners may use existing electricity connections for EV charging or may opt for a separate metered connection from Distribution Licensee with a dedicated EV charging tariff.**

vi. **To promote charging through solar energy, charging during solar hours (9 a.m. to 4 p.m.) has been incentivized.**

vii. **Service fee charged by a public and community EV charging station from a customer has been rationalized.**

viii. **Use of open communication protocols like Open Charge Point Protocol (OCPP), Open Charge Point Interface (OCPI) and Unified Energy Interface (UEI) to create connected and interoperable EV charging infrastructure has been encouraged.**

Various other measures taken by Government to fast-track implementation of EV charging infrastructure are as follows:

i. **Under PM e-DRIVE (Electric Drive Revolution in Innovative Vehicle Enhancement) allocation of Rs. 2,000 Cr has been made to support 72,300 public charging stations (48,400 for e-2W & 3W, 22,100 for e-4W and 1800 e-buses).**

ii. **Model Building Bye-Laws has been amended mandating the inclusion of charging stations in private and commercial buildings.**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.669
ANSWERED ON 06.02.2025

BATTERY SWAPPING GUIDELINES

669. SHRI TEJASVI SURYA:
SMT. MALA RAJYA LAXMI SHAH:
SHRI SUKHJINDER SINGH RANDHAWA:
SHRI PRAVEEN PATEL:
SHRI SHANKAR LALWANI:
DR. VINOD KUMAR BIND:
SHRI PRATAP CHANDRA SARANGI:
SMT. SHOBHANABEN MAHENDRASINH BARAIYA:

Will the Minister of POWER be pleased to state:

(a) whether there are any strategies adopted by the Government to collaborate with State Governments in order to implement the 2024 Battery Swapping Guidelines and ensure that battery-swapping stations are strategically located across urban and rural areas;

(b) if so, the details thereof along with the existing number of such stations available and functioning in cities across the country; and

(c) the details of the envisions of the Government on the role of public private partnerships in expanding the battery swapping infrastructure?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : The Ministry of Power has issued "Guidelines for Installation and Operation of Battery Swapping and Charging Stations", vide OM dated 10th January 2025. These guidelines outline the standards and protocols to facilitate development of a nationwide network of Battery Swapping Stations (BSS). Key features involving State Governments in implementing these guidelines are:-

.....2.

(i) A State level Steering Committee chaired by Secretary in-charge of Energy, comprising Secretaries of Transport, Municipal Administration and Urban Development, and other relevant officials, will plan and monitor the implementation of BSS Infrastructure at the State level.

(ii) Each state will designate a State Nodal Agency (SNA) responsible for coordinating with DISCOMs and the State Electricity Regulatory Commission (SERC) to facilitate electricity connections for BSS.

(iii) A Central Steering Committee chaired by the Additional Secretary, Ministry of Power including Members from relevant Ministries, State representative, Bureau of Energy Efficiency (BEE), and the Central Electricity Authority (CEA) will periodically review the implementation of the guidelines.

(iv) BEE will work collaboratively with DISCOMs and State Government entities for implementation of the guidelines.

As on 27th January, 2025, as per data available with BEE, 2611 BSS are deployed across the country. State-wise details are at Annexure A.

(c) : The guidelines emphasize the role of public-private partnerships (PPPs) in expanding the battery swapping infrastructure. The setting up of BSS has been designated as a de-licensed activity, simplifying the process for businesses.

To make the land available at affordable rates, it has been suggested that public land be made available to Government or Public entities on a revenue-sharing model at ₹ 1 per kWh. For private entities, the land may be made available through a competitive bidding process at a floor price of ₹ 1 per kWh. Additionally, public tenders involving government land for the establishment of BSS have been suggested to be kept technology agnostic. State Governments have been advised to permit round-the-clock operations for BSS.

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ANNEXURE-A

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 669 ANSWERED IN THE LOK SABHA ON 06.02.2025

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State / UT wise deployed Battery Swapping Stations

Sl. No.	State	No. of BSS
1	Andhra Pradesh	2
2	Bihar	48
3	Delhi	878
4	Haryana	171
5	Karnataka	347
6	Kerala	20
7	Madhya Pradesh	2
8	Maharashtra	24
9	Orissa	2
10	Punjab	22
11	Rajasthan	104
12	Telangana	146
13	Uttar Pradesh	839
14	Uttarakhand	5
15	West Bengal	1
Total		2,611

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.688
ANSWERED ON 06.02.2025

TARGET OF ELECTRIFICATION IN RURAL AND URBAN AREAS

†688. DR. MANNA LAL RAWAT:
SHRI DAMODAR AGRAWAL:

Will the Minister of POWER
be pleased to state:

(a) whether the Government has achieved the target of complete electrification in all rural and urban areas of the country;

(b) if so, the details thereof, State/UT-wise and if not, the reasons therefor;

(c) the details of the ratio of electrification of rural and urban areas across the country, State-wise including Rajasthan;

(d) whether the Government is facing challenges in achieving the target of 24 hours power supply in all urban and rural areas of the country and if so, the details thereof; and

(e) the details of the efforts being made by the Government to provide 24 hours power supply in all areas of the country?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : The Government of India (GoI) implemented Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and Integrated Power Development Scheme (IPDS) to strengthen the sub-transmission and distribution networks in rural and urban areas respectively. As reported by the States, all the inhabited un-electrified census villages in the country were electrified by 28th April 2018. A total of 18,374 villages in the country were electrified under the scheme of DDUGJY. The State-wise details of the number of villages electrified, including for the State of Rajasthan, are placed at Annexure-I. These Schemes stand closed as on 31.03.2022.

.....2.

Subsequently, GoI launched the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA) in October, 2017 with the objective of providing electricity connections to all willing un-electrified households in rural areas and all willing poor households in urban areas in the country. All works sanctioned under SAUBHAGYA have been successfully completed and the scheme stands closed as on 31.03.2022. As reported by the States, around 2.86 Cr. households were electrified during the SAUBHAGYA period.

The details of infrastructure works undertaken under DDUGJY/SAUBHAGYA and IPDS are placed at Annexure-II. The State-wise details of the number of households electrified, including for the State of Rajasthan, are placed at Annexure-III.

(d) & (e) : Electricity being a concurrent subject, supply and distribution of electricity to the consumers is within the purview of the respective State Government/Power Utility. As per the Electricity (Rights of Consumers) Rules, 2020, the distribution licensee shall supply 24x7 power to all consumers. However, the Commission may specify lower hours of supply for some categories of consumers like agriculture. Government of India has taken following initiatives to help States achieve uninterrupted power supply:

Power Generation Sector

2,30,050 MW of generation capacity has been added since 2014 transforming our country from power deficit to power sufficient. At present, the Installed Generation Capacity is 4,62,065 MW.

Power Transmission Sector

2,00,168 circuit kilometer (ckm) of transmission lines, 7,66,859 MVA of Transformation capacity and 82,790 MW of Inter-Regional capacity has been added since 2014 with capability of transferring 1,18,740 MW power from one corner of the country to another.

Power Distribution Sector

Government of India launched the Revamped Distribution Sector Scheme (RDSS) in July, 2021 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, infrastructure works worth Rs. 2.78 lakh Cr. have been sanctioned for the distribution utilities.

.....3.

Government of India is further supporting States for grid electrification of left-out households during SAUBHAGYA, under the ongoing scheme of RDSS. In addition, all identified households belonging to Particularly Vulnerable Tribal Group (PVTG) under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan) and tribal households under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan) are being sanctioned for on-grid electricity connection under RDSS, as per the Scheme guidelines.

The works sanctioned under RDSS also include-

i. **Works worth Rs. 4,538 Cr. have been sanctioned for electrification of 9,97,680 households including PVTG households identified under PM-JANMAN and tribal households identified under DA-JGUA. State-wise details of works sanctioned are placed at Annexure-IV.**

ii. **Works worth Rs. 1,067 crores for extension of electricity distribution infrastructure to far flung Border Areas in the States of Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh and UT of Ladakh. State-wise details of works sanctioned are placed at Annexure-V.**

In addition, under New Solar Power Scheme, works worth Rs. 50 Cr. have been sanctioned for off-grid solar based electrification of 9,961 households (State-wise details placed at Annexure- VI).

With collective efforts of Centre and States/UTs, the average hours of supply in rural and urban areas have improved to 21.9 hrs and 23.4 hrs, respectively, in FY 2024.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

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State-wise number of villages electrified under DDUGJY

Sl. No.	State	No. of Villages Electrified under DDUGJY
1	Arunachal Pradesh	1483
2	Assam	2732
3	Bihar	2906
4	Chhattisgarh	1078
5	Himachal Pradesh	28
6	J&K	129
7	Jharkhand	2583
8	Karnataka	39
9	Madhya Pradesh	422
10	Maharashtra	80
11	Manipur	366
12	Meghalaya	1051
13	Mizoram	54
14	Nagaland	78
15	Odisha	3281
16	Rajasthan	427
17	Tripura	26
18	Uttar Pradesh	1498
19	Uttarakhand	91
20	West Bengal	22
	Total	18,374

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Details of works executed under DDUGJY and SAUBHAGYA:

Total closure project cost: Rs.1,26,233 Cr.

a) **Installation of 1933 nos. of new 33/11kV substations.**
b) **Augmentation of 2356 nos. of 33/11kV substations.**
c) **Laying of around 8 Lakh ckm of HT and LT lines.**
d) **Installation of 6,36,309 nos. of Distribution Transformers (DTRs).**
e) **Installation of 1,90,41,387 nos. of Consumer meters/DT meters/Feeder meters.**
f) **Laying of 1.139 Lakh ckm of 11kV Feeder separation lines.**

Details of works executed under IPDS:

Total closure Cost: Rs. 28,886 Cr.

a) **Installation of 994 nos. of new 33/11kV substations.**
b) **Augmentation of 1609 nos. of 33/11kV substations.**
c) **Laying of 33,884 ckm of HT and LT lines.**
d) **Installation of 59,993 nos. of Distribution Transformers (DTRs).**
e) **Installation of 89,67,566 nos. of Consumer meters/smart meters/prepaid meters/DT meters/Feeder meters/Boundary meters.**

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Number of Households electrified since the launch of SAUBHAGYA scheme including Additional Households achievement under DDUGJY

Sl. No.	State/UT	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-IV

ANNEXURE REFERRED IN REPLY TO PARTS (d) & (e) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Household Electrification sanctioned under RDSS

Sl. No.	State	Sanctioned Outlay (Rs. Crores)	Sanctioned GBS (Rs. Crores)	Total Households Sanctioned
A.	Addl. HHs Sanctioned			
1	Rajasthan	459.18	275.51	1,90,959
2	Meghalaya	435.70	392.13	50,501
3	Mizoram	79.90	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	77.10	69.39	10,730
9	Bihar	300.26	180.16	42,584
10	Assam	785.55	706.99	1,27,111
11	Arunachal Pradesh	47.11	42.40	6,506
12	Manipur	214.44	193.00	36,972
13	Chhattisgarh	316.51	189.90	63,161
	Total (A)	3,773.04	2,776.64	8,21,529
B.	Under Vibrant Villages Programme			
1	Himachal Pradesh*	6.08	5.47	-
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.	Under Pradhan Mantri Janjati Adivasi Nyayay Maha Abhiyan (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	22.90	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	24.20	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	0.60	0.54	669
14	Uttar Pradesh	1.10	0.66	316
	Sub Total (C1)	516.15	328.31	1,29,269
D.	Under Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DA-JGUA)			
D1	Sanctioned Households			
1	Chhattisgarh	11.98	7.19	2,550
2	Maharashtra	2.07	1.24	480
3	Tripura	40.69	36.62	7,677
4	Karnataka	30.53	18.32	3,682
5	Arunachal Pradesh	8.20	7.38	1,938
6	Telangana	110.73	66.44	26,525
	Sub Total (D1)	204.20	137.19	42,852
D2	Sanctioned Public Places			
1	Tripura	2.31	2.08	512
2	Arunachal Pradesh	0.04	0.03	9
3	Telangana	2.90	1.74	672
	Sub Total (D2)	5.25	3.86	1,193
	Total (D=D1+D2)	209.45	141.05	44,045
	Grand Total (A+B+C+D)	4,537.99	3,281.39	9,97,680

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ANNEXURE-V

ANNEXURE REFERRED IN REPLY TO PARTS (d) & (e) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

****

Distribution Infrastructure works sanctioned to Border areas under RDSS

Sl. No.	State/UT	Sanctioned cost (Rs. Cr.)	Sanctioned GBS (Rs. Cr.)
1	Arunachal Pradesh	157.18	141.45
2	Himachal Pradesh	362.18	325.97
3	Ladakh	178.43	160.58
4	Sikkim	134.12	120.7
5	Uttarakhand	235.56	212
	Total	1067.47	960.7

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ANNEXURE-VI

ANNEXURE REFERRED IN REPLY TO PARTS (d) & (e) OF UNSTARRED QUESTION NO. 688 ANSWERED IN THE LOK SABHA ON 06.02.2025

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Off-grid solar based household electrification sanctioned under New Solar Power Scheme

S. No.	State	Total Households Sanctioned
1.	Andhra Pradesh	1,675
2.	Chhattisgarh	1,578
3.	Jharkhand	2,342
4.	Madhya Pradesh	2,060
5.	Karnataka	179
6.	Kerala	98
7.	Telangana	326
8.	Tripura	1,703
	Total	9,961

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GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.689
ANSWERED ON 06.02.2025

FUNDS FOR HYDRO ELECTRIC PROJECTS

689. SHRI V K SREEKANDAN:

Will the Minister of POWER
be pleased to state:

(a) whether the State Government of Kerala has demanded the Union Government to announce 40% viability gap funding for hydroelectric projects and pumped storage projects and if so, the details thereof;

(b) whether it is also true that the State of Kerala has also sought financial support for establishing battery energy storage systems with capacity ranging between 3,000 MW and 5,000 MW for managing peak demand;

(c) if so, the steps taken/being taken by the Government in this regard;

(d) whether the Government has reviewed the power projects in the said State recently; 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) : Government of Kerala vide letter dated 22.12.2024 has requested the Union Government for at least 40% Viability Gap Funding for HEPs and PSPs with a capacity of 1,700 MW and 3,300 MW respectively.

If the Government of Karala comes up with a specific HEP/PSP project, the Union Government may provide grant for enabling infrastructure under the existing scheme.

.....2.

(b) & (c) : Government of Kerala vide letter dated 22.12.2024 has also requested financial support from the Union Government for establishing Battery Energy Storage Systems (BESS) with capacity ranging from 3,000 MW to 5,000 MW for managing peak demand.

Additionally, in a separate communication dated 10th October 2024, the Government of Kerala had sought financial support from the Union Government for setting up of BESS of 270 MW/540MWh capacity. In response, Ministry of Power has allocated 500 MWh BESS capacity to Kerala, with a VGF support of Rs 27 lakh/MWh or 30% of the capital cost, whichever is lower, under the VGF scheme for the development of BESS.

(d) & (e) Presently, two hydroelectric projects, Pallivasal (60 MW) and Mankulam (40 MW) are under construction in Kerala which are regularly monitored and reviewed by Central Electricity Authority (CEA). Further, one project namely Idukki Extension Scheme (800 MW) is under Survey & Investigation stage, which is also regularly reviewed by CEA.

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