

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1750
ANSWERED ON 03.08.2026

ELECTRICITY DEMAND AND SUPPLY

1750 SHRI NARAIN DASS GUPTA:

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

- (a) the details of installed power generation capacity in the country, source-wise;
- (b) whether the Central Government has assessed transmission and distribution losses across States and the corrective measures taken;
- (c) the details of villages and households electrified under the Central Government schemes; and
- (d) the steps taken to modernize the power grid and improve reliability of electricity supply?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): Source-wise details of All India Installed power generation capacity (as on 30.06.2026) is given at **Annexure-I**.

(b): Central Electricity Authority (CEA) publishes “All India Electricity Statistics- General Review” report having statistic related to generation, transmission, trading, distribution and utilization of electricity by different sectors in the country on annual basis. Accordingly, the T&D losses on all India basis from FY 2019-20 to FY 2023-24 are given below:

FY	2019-20	2020-21	2021-22	2022-23	2023-24
% T&D Losses	20.46	20.73	19.27	17.68	17.63

Further, State / UT -wise percentage of Aggregated Technical & Commercial (AT&C) losses of distribution utilities for last five years [as per the Power Finance Corporation (PFC) Report on Performance of Power Utilities], are given at **Annexure-II**.

The following corrective measures have been undertaken to address T&D losses:

I. Transmission losses:

To address the line losses in power transmission, the Central & State Transmission Utilities are taking following actions:

- (i) Network expansion and augmentation of existing system,
- (ii) Adoption of higher voltage system,
- (iii) Reactive power management and better operational practices to improve voltage profile and reduce losses,
- (iv) Modernizing transmission system.

II. Distribution losses:

Electricity being a concurrent subject, the supply and distribution of electricity is responsibility of the respective State Government / Distribution Utility. Hence, it is the responsibility of respective distribution utilities to take necessary measures to reduce the losses, modernize the power grid and to improve the reliability of electricity supply in its area of operation.

Under the Revamped Distribution Sector Scheme (RDSS), financial assistance is provided to Distribution Utilities for loss reduction infrastructure works and for smart metering works. Under RDSS, loss reduction infrastructure works amounting to Rs. 1.53 lakh crore and smart metering works amounting to Rs. 1.31 lakh crore have been sanctioned at the national level. The release of funds under the Scheme is contingent upon improvement in the operational and financial performance of the distribution utilities including the reduction in AT&C losses.

In addition to RDSS following initiatives have been taken for distribution sector:

- (i) Additional Borrowing consent of 0.5% of Gross State Domestic Product (GSDP) to State Governments, which is conditional on them undertaking specific reforms in the power sector.
- (ii) Additional Prudential Norms for sanctioning of loans to State owned power utilities contingent on the performance of power distribution utilities against prescribed conditions.
- (iii) Rules for implementation of Fuel and Power Purchase Cost Adjustment (FPPCA) and cost reflective tariff so as to ensure that all prudent cost for supply of electricity is passed through.
- (iv) Rules and Standard Operating Procedure issued for proper subsidy accounting and their timely payment.

With the concerted efforts of the Central Government and the State Governments/UTs, and as a result of the various reform measures undertaken, the AT&C losses of the distribution utilities at the national level have reduced from 21.91% in FY 2021 to 15.04% in FY 2025.

(c) : Government of India has launched several schemes for villages and households electrified:

- (i) Government of India (GoI) had launched Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) in year 2014 for rural electrification and to strengthen the sub-transmission and distribution networks in rural areas in the country. As reported by the States, all the inhabited unelectrified census villages in the country were electrified by 28th April, 2018. A total of 18,374 villages were electrified under DDUGJY.
- (ii) 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. As reported by the States, around 2.86 Cr. households have been electrified during the SAUBHAGYA period.

Both the schemes (DDUGJY and SAUBHAGYA) stand closed as on 31.03.2022.

(iii) Government of India is further supporting States for grid electrification of left-out households, including households belonging to Particularly Vulnerable Tribal Group (PVTG) under PM-JANMAN (Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan), tribal households under DA-JGUA (Dharti Aaba Janjatiya Gram Utkarsh Abhiyan), Scheduled Caste households under Pradhan Mantri Anusuchit Jaati Abhyuday Yojna (PM-AJAY) and remote & border households under Vibrant Villages Program (VVP), under RDSS. Till date, under RDSS, works have been sanctioned for electrification of 13.65 lakh households.

(d): Government of India has taken following steps to modernize the power grid and improve reliability of electricity supply:

I. Grid Modernization:

Advanced grid support technologies such as Static Synchronous Compensators (STATCOMs), Synchronous Condensers (SynCONs), and other Flexible AC Transmission System (FACTS) devices are being deployed to enhance voltage stability, improve system strength, and support reliable integration of renewable energy. Further, several measures have been taken to facilitate renewable energy integration, including establishment of Regional Energy Management Centres (REMCs) for renewable forecasting and real-time grid management, implementation of Automatic Generation Control (AGC) and Ancillary Services (SRAS/TRAS) for frequency regulation and balancing etc.

II. Reliable electricity supply:

1. Generation and Storage Planning:

- (i) As per National Electricity Plan (Generation), installed generation capacity in 2031-32 is likely to be 874 GW. With a view to ensure generation capacity remains ahead of projected 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.
- (ii) All the States were advised to initiate process for creating/ contracting generation capacities; from all generation sources, as per their Resource Adequacy Plans.
- (iii) In order to augment the power generation capacity, the Government of India has initiated following capacity addition programme:
 - a. Thermal Capacity Addition: The projected thermal (coal and lignite) capacity requirement by the year 2035–36 is estimated at approximately 3,15,000 MW as against the 2,11,855 MW installed capacity as on 31.03.2023. To meet this requirement, Ministry of Power has envisaged to set up an additional minimum 1,05,000 MW coal and lignite based thermal capacity.

Accordingly, Thermal capacities of around 21,080 MW have been commissioned since April 2023 till 30.06.2026. In addition, 47,545 MW of thermal capacity (including 4,845 MW of stressed thermal power projects) is currently under construction. The contracts of 16,000 MW have been awarded and are due for construction.

b. Central Electricity Authority (CEA) has projected hydro power capacity addition of about 16,448 MW during the period 2026–27 to 2031–32. Of this, 400 MW has been commissioned as on 30.06.2026 and 12,973 MW are presently under construction.

c. Nuclear Capacity Addition: 8,000 MW of Nuclear Capacity is under construction and targeted to be completed by 2031-32. 5,600 MW of Nuclear Capacity is under various stages of planning and approval.

d. Renewables Capacity Addition: 1,47,720 MW Renewable Capacity including 119,580 MW of Solar (including Hybrid-Solar) and 27,720 MW of Wind (including Hybrid-wind) is under construction while 47,830 MW of Renewable Capacity including 44,440 MW of Solar is at various stages of planning and targeted to be completed by 2029-30.

e. Addition of Energy Storage Systems: As on 30.06.2026, 15,870 MW/95,220 MWh Pumped Storage Projects (PSPs) are under construction. Further, a total of 6,580 MW/39,480 MWh capacity of Pumped Storage Projects (PSPs) are concurred and yet to be taken up for construction. As on 30.06.2026, 15,754 MW / 42,530 MWh Battery Energy Storage System (BESS) capacity are under construction, 11,747 MW / 38,425 MWh has been awarded and 19,192 MW / 67,574 MWh BESS capacity are under tendering stage.

2. Promotion of Renewable Energy(RE) Generation:

- (i) 100% 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 (with waiver tapering off 25% annually till June 2028), for co-located BESS projects commissioned by June 2028, for Hydro PSP projects where construction work awarded by June 2028, for Green Hydrogen Projects commissioned till December 2030 and for offshore wind projects commissioned till December 2032.
- (ii) 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.
- (iii) Renewable Energy Implementing Agencies (REIAs) are regularly inviting bids for procurement of RE power.
- (iv) Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.
- (v) To augment transmission infrastructure needed for steep RE trajectory, transmission plan has been prepared till 2032.
- (vi) Laying of new intrastate transmission lines and creating new sub-station capacity has been supported under the Green Energy Corridor Scheme for evacuation of renewable power.
- (vii) Scheme for setting up of Solar Parks and Ultra Mega Solar Power projects is being implemented to provide land and transmission to RE developers for installation of RE projects at large scale.
- (viii) 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, New Solar Power Scheme (for Tribal and PVTG Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and Dharti Aabha Janjatiya Gram Utkarsh Abhiyan (DA JGUA), National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.

- (ix) To encourage 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 on non-compliance.
- (x) “Strategy for Establishment of Offshore Wind Energy Projects” has been issued.
- (xi) Green Term Ahead Market (GTAM) has been launched to facilitate sale of Renewable Energy Power through exchanges.
- (xii) Production Linked Incentive (PLI) scheme has been launched to achieve the objective of localization of supply chain for solar PV Modules.

3. Transmission:

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 1,274 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.

In addition to the above, the Ministry of Power has issued guidelines dated 14.06.2024, 21.03.2025 and 15.12.2025 regarding the payment of compensation for Right of Way (RoW) for transmission lines, wherein the land rate has been linked to the prevailing market rate. These guidelines address the key challenges of RoW arising from landowners demanding higher compensation than the rates determined by the State Government.

4. Distribution:

Government of India launched the 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. The scheme aims to reduce the Aggregate Technical & Commercial (AT&C) losses to pan-India levels of 12-15% and the ACS-ARR gap to zero. The scheme has an outlay of Rs. 3,03,758 crore with estimated Gross Budgetary Support (GBS) from the Central Government of Rs. 97,631 crore.

With the concerted effort of Central and State Government, the average hours of supply in rural areas have increased from 12.5 hours in FY 14 to 22.6 hours in FY26 and in urban areas the same has been increased from 22.1 hours in FY 14 to 23.4 hours in FY 26.

ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) OF UNSTARRED QUESTION NO. 1750
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Source-wise details of All India Installed power generation capacity as on 30.06.2026:

Installed Capacity (in MW) of the country as on 30.06.2026			
Category		Installed Capacity (MW)	% Share in Total
Fossil Fuel	Coal	2,24,158	40.84%
	Lignite	6,620	1.21%
	Gas	20,122	3.67%
	Diesel	589	0.11%
	Total Fossil Fuel	2,51,489	45.82%
Non-Fossil Fuel	RES (including Hydro)	2,88,589	52.58%
	Hydro (including PSPs)	52,065	9.49%
	Wind, Solar & Other RE	2,36,525	43.09%
	Wind	57,443	10.47%
	Solar	1,62,152	29.54%
	Bio Mass Power	10,869	1.98%
	Waste to Energy	878	0.16%
	Small Hydro	5,182	0.94%
	Nuclear	8,780	1.60%
	Total Non-Fossil Fuel	2,97,369	54.18%
Total Installed Capacity		5,48,858	100.0%

**ANNEXURE REFERRED IN REPLY TO PARTS (b) OF UNSTARRED QUESTION NO. 1750
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State / UT wise AT&C loss%

State / UTs	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
State Sector					
Andaman & Nicobar Islands	51.94	19.8	19.77	20.76	24.14
Andhra Pradesh	20.42	10.56	7.74	12.05	7.87
Arunachal Pradesh	51.82	47.83	51.70	42.86	46.20
Assam	18.73	16.95	16.22	14.03	15.44
Bihar	34.4	33.94	23.45	20.32	15.51
Chandigarh	13.81	-	-	-	-
Chhattisgarh	18.05	18.13	16.14	15.88	14.25
Delhi	24.83	8.33	10.67	12.82	8.36
Goa	12.89	12.79	17.09	9.09	10.39
Gujarat	11.56	9.7	10.72	8.97	8.25
Haryana	17.46	14.06	12.01	11.30	11.76
Himachal Pradesh	14.02	12.9	10.57	10.88	19.44
Jammu & Kashmir	59.28	-	-	-	-
Jharkhand	43.09	30.85	27.46	30.51	28.19
Karnataka	15.97	11.51	14.19	11.89	11.92
Kerala	7.83	8.08	5.65	7.44	6.61
Ladakh	-	48.29	38.61	42.46	26.82
Lakshadweep	11.63	-	-	-	-
Madhya Pradesh	41.72	21.36	20.45	22.89	22.76
Maharashtra	27.68	15.21	16.96	23.86	17.69
Manipur	24.56	24.28	13.82	13.41	12.90
Meghalaya	23.37	29.75	17.75	17.51	17.52
Mizoram	29.05	36.45	26.53	28.01	32.31
Nagaland	47.08	43.26	47.28	47.11	48.86
Puducherry	20.12	14.2	21.83	17.75	14.72
Punjab	18.54	11.67	11.23	10.96	19.21
Rajasthan	26.18	17.49	15.44	22.13	15.18
Sikkim	98.35	30.77	26.41	27.84	21.84
Tamil Nadu	11.78	10.53	10.92	11.39	10.96
Telangana	13.33	10.65	18.65	19.01	19.84
Tripura	37.36	24.97	24.91	69.01	29.61
Uttar Pradesh	27.11	31.1	22.18	16.39	19.54
Uttarakhand	15.39	14.15	14.41	14.69	15.08
West Bengal	21.34	16.67	17.43	17.13	17.17
Private Sector					
Dadra Nagar Haveli and Damn Diu	4.97	3.77	-	-	-
Delhi	8.81	7.86	6.86	6.74	6.48
Gujarat	6.91	4.47	3.93	3.92	3.63
Maharashtra	8.88	6.73	6.48	5.39	4.99
Odisha	27.41	31.45	21.67	19.59	17.81
Uttar Pradesh	9.77	8.5	8.02	7.75	8.48
West Bengal	13.17	7.75	6.47	4.64	4.77
Grand Total:	21.91	16.12	15.22	15.97	15.04
