

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.147
ANSWERED ON 20.07.2026

SUSTAIN POWER SUPPLY

147. SHRI S. KALYANASUNDARAM:

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

- (a) whether Government has reviewed the current status of power generation, transmission and grid stability in States facing peak demand, including Tamil Nadu;
- (b) the details of funds sanctioned, released and utilised under schemes such as Revamped Reforms-Based & Results-Linked Distribution Sector Scheme (RDSS) for strengthening State power distribution infrastructure;
- (c) the steps being taken to address power outages, renewable integration challenges and tariff sustainability while ensuring reliable supply; and
- (d) the measures proposed to accelerate renewable energy generation, storage solutions and grid modernization to meet future demand and climate goals, particularly in energy intensive southern States?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (c): Ministry of Power regularly reviews the status of power supply across the country including Tamil Nadu. There is adequate availability of power in the country. Present installed generation capacity of the country is 548.86 GW (as on June, 2026). The country has addressed the critical issue of power deficiency by adding 324.7 GW of generation capacity since April, 2014 transforming the country from power deficit to power sufficient. Further, as on 30.05.2026, addition of 2,17,199 circuit kilometre (ckm) of Transmission lines, 9,38,495 MVA of Transformation capacity and 84,390 MW of Inter-Regional capacity has been done since 2014. Thus, total inter-regional transmission capacity has become 1,20,340 MW, enabling reliable transfer of power across regions.

The state- wise & month wise 'Power Supply Position' including the State of Tamil Nadu in terms of energy and peak for FY 2026-27 (up to June, 2026) is given at **Annexure-I**.

The various steps taken to address power outage, renewable energy integration challenges, grid stability and tariff sustainability are as follows:

- (i) Transmission system has been planned for integration of over 500 GW RE capacity by the year 2030. The transmission schemes associated with RE generation projects are being taken up for implementation in a phased manner commensurate with the RE Capacity addition.
- (ii) Development of intra-state transmission network is being planned to keep pace with RE capacity addition. Strong inter connection of Inter-State Transmission System (ISTS) RE schemes with the intra-state network to ensure better reliability in terms of anchoring voltage stability, angular stability, losses reduction etc. is being done.

- (iii) Central Financial Assistance (CFA) is being provided to the States for setting up Transmission infrastructure for RE integration within their State under the Green Energy Corridor Scheme.
- (iv) Setting up of Regional Energy Management Centers (REMCs) for better forecasting of renewable power and to assist grid operators to manage variability and intermittency of renewable power.
- (v) Innovative products like Solar-Wind Hybrid Projects, RE projects with energy storage systems launched to reduce intermittency.
- (vi) Implementation of Green Term Ahead Market (GTAM) and Green Day Ahead Market (GDAM) for sale of renewable energy.
- (vii) Flexibilization of thermal generation is mandated to address the variability of RE generation.
- (viii) CEA (Technical Standards for Connectivity to the Grid) Regulations lay down the minimum technical requirements for the RE generating plants to ensure the safe, secure and reliable operation of the grid. The compliances to the said regulations by RE plants are verified jointly by Central Transmission Utility (CTUIL) and Grid-India / Regional Load Despatch Centres (RLDCs) before granting connectivity/interconnection to the national grid. Robust compliances verification is done before interconnection of any new plant to the grid.
- (ix) Indian Electricity Grid Code mandates that RE plants participate in the primary and secondary frequency control in case of contingencies. Hybrid RE power plants, Energy Storage Systems such as BESS (Battery Energy Storage System) and PSP (Pump Storage Project) are being promoted for mitigating variability in RE generation and provide adequate frequency support to the grid.
- (x) A number of state-of-the-art Static Synchronous Compensators (STATCOM) and Static VAR Compensator (SVC) are being deployed to dynamically adjust the reactive power flow in the grid for maintaining stable voltage levels.
- (xi) Automatic Generation Control (AGC) is being utilized to maintain frequency stability by sending Secondary Reserve Ancillary Services (SRAS) Up or Down signals every four (04) seconds to AGC-enabled power plants.
- (xii) Market-based Tertiary Reserve Ancillary Services (TRAS) for addressing real-time demand-supply imbalances.
- (xiii) The generators with high ramp rate (e.g. hydro or gas) are also scheduled optimally to maintain load generation balance.
- (xiv) CEA has issued an advisory for implementation of 100% Grid Forming Invertors (GFMs) in all upcoming BESS projects, which helps in improving the stability in RE complexes and also provide black start support.
- (xv) Budgetary Support is being provided for Flood Moderation/Storage Hydro Electric Projects (HEPs).
- (xvi) Budgetary Support for cost of enabling infrastructure, i.e. roads, bridges, railway siding, transmission system etc. is being provided to Hydro Electric/ PSP projects.
- (xvii) Procurement through tariff-based bidding has led to competitive discovery of prices for renewable based generation.

(b): Government of India launched 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 has an outlay of Rs. 3,03,758 Cr. and estimated Gross Budgetary Support (GBS) from Central Government of Rs. 97,631 Cr. Under the scheme, financial assistance is being provided to the Distribution Utilities (excluding Private Sector Utilities) for loss reduction infrastructure works and smart metering works. Projects worth Rs. 1.53 lakh crore for loss reduction infrastructure and Rs. 1.31 lakh crore for smart metering works have been sanctioned under the scheme which would help improve the reliability and quality of power supply in the country.

State-wise details of funds sanctioned, released and utilized under RDSS are given at **Annexure-II**.

(d): Government of India has taken various steps and initiatives to promote and accelerate renewable energy generation in the country and grid modernization, including for southern States. These include, inter-alia, the following:

- (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) Foreign Direct Investment (FDI) has been permitted up to 100 percent under the automatic route.
- (iv) Laying of new transmission lines and creating new sub-station capacity has been supported under the Green Energy Corridor Scheme for evacuation of renewable power
- (v) To augment transmission infrastructure needed for steep RE trajectory, transmission plan has been prepared till 2032 and is updated on regular basis.
- (vi) Government of India, in September 2023, approved a Viability Gap Funding (VGF) scheme for development of Battery Energy Storage Systems (BESS). BESS capacity of 13.22 GWh is under implementation with a budgetary allocation of Rs 3,760 Cr. under this scheme. Considering the increasing demand of BESS, Ministry of Power, in June 2025, has approved another VGF scheme for development of 30 GWh BESS capacity with a financial support of Rs 5,400 Cr from Power System Development Fund (PSDF).
- (vii) 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 on non-compliance. RCO also includes specified quantum of consumption from Decentralized Renewable Energy sources.
- (viii) “Strategy for Establishments of Offshore Wind Energy Projects” has been issued.

Also, Government of India has taken number of measures to promote storage solutions in the country including southern States, details of these measures are given below:

- (i) Ministry of Power (MoP) has notified Electricity (Amendment) Rules 2022, ESS for enabling Energy Storage System (ESS).
- (ii) MoP in March, 2022 notified the Guidelines for Procurement and Utilization of Battery Energy Storage Systems as part of Generation, Transmission and Distribution assets, along with Ancillary Services.
- (iii) MoP has notified Guidelines to promote development of Pumped Storage Projects in the country on 10th April, 2023.
- (iv) MoP, vide order dated 01.08.2025, has increased the limit for concurrence of hydro generating stations, off- stream open loop and on-stream PSP by Central Electricity Authority from ₹1,000 crore to ₹3,000 crore. Further, off-stream closed loop PSPs has been exempted from the requirement of concurrence from the Authority.
- (v) Tariff Based Competitive Bidding (TBCB) guidelines have been issued for procurement of power from Pumped Storage Projects.
- (vi) Central Electricity Authority (CEA) issued an advisory on 18.02.2025 recommending the co-location of Energy Storage Systems (ESS) with solar power projects to enhance grid stability and cost efficiency.
- (vii) CEA (Measures Relating to Safety and Electric Supply) (First Amendment) Regulations, 2025 has been notified on 30.03.2026, which includes the safety requirements for BESS.
- (viii) CEA's (Technical Standards for Construction of Electrical Plants and Electric Lines) Amendment Regulations, 2026 has been notified to specify the construction standards for BESS.
- (ix) Details of BESS capacity allocated to Southern States under the above said VGF Schemes for implementation is given at **Annexure-III**.

ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (c) OF UNSTARRED QUESTION NO. 147 ANSWERED IN THE RAJYA SABHA ON 20.07.2026

The state- wise & month wise 'Power Supply Position' including the State of Tamil Nadu in terms of energy and peak for FY 2026-27 (upto June, 2026):

State/ System / Region	April, 2026							
	Energy Requirement	Energy Supplied	Energy not Supplied		Peak Demand	Peak Met	Demand not Met	
	(MU)	(MU)	(MU)	(%)	(MW)	(MW)	(MW)	(%)
Chandigarh	138	138	0	0.0	340	340	0	0.0
Delhi	3,188	3,187	1	0.0	7,091	7,091	0	0.0
Haryana	5,314	5,292	22	0.4	11,018	11,018	0	0.0
Himachal Pradesh	924	921	3	0.3	1,839	1,839	0	0.0
Jammu & Kashmir	1,548	1,544	4	0.3	2,715	2,715	0	0.0
Punjab	5,249	5,140	109	2.1	11,863	11,863	0	0.0
Rajasthan	7,862	7,862	0	0.0	14,825	14,825	0	0.0
Uttar Pradesh	13,779	13,776	3	0.0	29,932	29,475	457	1.5
Uttarakhand	1,337	1,310	27	2.0	2,691	2,536	155	5.8
Northern Region	39,473	39,306	167	0.4	76,862	76,611	251	0.3
Chhattisgarh	4,653	4,642	11	0.2	7,080	7,078	2	0.0
Gujarat	14,049	14,049	0	0.0	25,795	25,786	9	0.0
Madhya Pradesh	8,841	8,841	0	0.0	14,375	14,375	0	0.0
Maharashtra	18,933	18,923	10	0.1	32,161	32,161	0	0.0
Dadra & Nagar Haveli and Daman & Diu	843	843	0	0.0	1,284	1,284	0	0.0
Goa	525	525	0	0.0	891	891	0	0.0
Western Region	49,140	49,119	21	0.0	81,355	81,355	0	0.0
Andhra Pradesh	8,126	8,126	0	0.0	14,145	14,145	0	0.0
Telangana	8,714	8,713	1	0.0	17,005	17,002	3	0.0
Karnataka	10,441	10,427	14	0.1	18,488	18,478	10	0.1
Kerala	3,256	3,250	6	0.2	6,488	6,178	310	4.8
Tamil Nadu	12,849	12,849	0	0.0	21,000	21,000	0	0.0
Puducherry	326	326	0	0.0	568	568	0	0.0
Lakshadweep	7	7	0	0.0	14	14	0	0.0
Southern Region	43,717	43,696	21	0.0	74,473	74,469	4	0.0
Bihar	4,289	4,288	1	0.0	8,172	8,158	14	0.2
DVC	2,114	2,114	0	0.0	3,676	3,676	0	0.0
Jharkhand	1,388	1,387	1	0.1	2,409	2,409	0	0.0
Odisha	4,231	4,231	0	0.0	7,598	7,594	4	0.1
West Bengal	6,954	6,953	1	0.0	13,023	12,946	77	0.6
Sikkim	49	49	0	0.0	118	118	0	0.0
Andaman- Nicobar	40	39	1	2.5	73	67	6	8.2
Eastern Region	19,029	19,028	1	0.0	32,832	32,758	74	0.2
Arunachal Pradesh	88	88	0	0.0	195	195	0	0.0
Assam	955	952	3	0.3	2,315	2,287	28	1.2
Manipur	94	94	0	0.0	252	252	0	0.0
Meghalaya	167	167	0	0.0	364	363	1	0.3
Mizoram	60	60	0	0.0	151	151	0	0.0
Nagaland	77	77	0	0.0	174	174	0	0.0
Tripura	156	156	0	0.0	366	366	0	0.0
North-Eastern Region	1,597	1,594	3	0.2	3,752	3,743	9	0.2
All India	1,52,956	1,52,743	213	0.1	2,56,117	2,56,117	0	0.0

The state- wise & month wise ‘Power Supply Position’ including the State of Tamil Nadu in terms of energy and peak for FY 2026-27 (upto June, 2026):

State/ System / Region	May,2026							
	Energy Requirement	Energy Supplied	Energy not Supplied		Peak Demand	Peak Met	Demand not Met	
	(MU)	(MU)	(MU)	(%)	(MW)	(MW)	(MW)	(%)
Chandigarh	194	194	0	0.0	411	411	0	0.0
Delhi	4,215	4,214	1	0.0	8,439	8,439	0	0.0
Haryana	6,964	6,924	40	0.6	13,507	13,507	0	0.0
Himachal Pradesh	1,070	1,068	2	0.2	1,836	1,836	0	0.0
Jammu & Kashmir	1,637	1,626	11	0.7	3,063	3,063	0	0.0
Punjab	7,134	7,106	28	0.4	14,268	14,268	0	0.0
Rajasthan	9,930	9,930	0	0.0	17,333	17,333	0	0.0
Uttar Pradesh	16,815	16,808	7	0.0	31,824	31,824	0	0.0
Uttarakhand	1,545	1,544	1	0.1	2,982	2,982	0	0.0
Northern Region	49,649	49,557	92	0.2	87,675	87,675	0	0.0
Chhattisgarh	4,045	4,044	1	0.0	6,471	6,471	0	0.0
Gujarat	15,519	15,482	37	0.2	26,455	26,418	37	0.1
Madhya Pradesh	9,670	9,643	27	0.3	15,519	15,492	27	0.2
Maharashtra	20,235	20,102	133	0.7	32,430	32,317	113	0.3
Dadra & Nagar Haveli and Daman & Diu	892	892	0	0.0	1,358	1,358	0	0.0
Goa	535	535	0	0.0	875	875	0	0.0
Western Region	52,228	52,029	199	0.4	82,114	82,000	114	0.1
Andhra Pradesh	8,142	8,142	0	0.0	15,019	15,014	5	0.0
Telangana	7,320	7,319	1	0.0	12,717	12,706	11	0.1
Karnataka	9,198	9,198	0	0.0	17,695	17,682	13	0.1
Kerala	3,023	3,021	2	0.1	5,742	5,742	0	0.0
Tamil Nadu	12,411	12,410	1	0.0	19,425	19,425	0	0.0
Puducherry	335	335	0	0.0	577	577	0	0.0
Lakshadweep	7	7	0	0.0	14	14	0	0.0
Southern Region	40,434	40,430	4	0.0	68,234	68,234	0	0.0
Bihar	4,523	4,523	0	0.0	8,646	8,628	18	0.2
DVC	2,098	2,098	0	0.0	3,431	3,427	4	0.1
Jharkhand	1,494	1,494	0	0.0	2,589	2,589	0	0.0
Odisha	4,390	4,389	1	0.0	8,829	8,823	6	0.1
West Bengal	7,131	7,129	2	0.0	13,340	13,340	0	0.0
Sikkim	43	43	0	0.0	100	100	0	0.0
Andaman- Nicobar	40	39	1	2.5	70	65	5	7.1
Eastern Region	19,686	19,683	3	0.0	34,908	34,875	33	0.1
Arunachal Pradesh	94	94	0	0.0	184	184	0	0.0
Assam	1,173	1,170	3	0.3	2,495	2,495	0	0.0
Manipur	105	105	0	0.0	261	261	0	0.0
Meghalaya	181	181	0	0.0	368	368	0	0.0
Mizoram	62	62	0	0.0	153	153	0	0.0
Nagaland	90	90	0	0.0	191	191	0	0.0
Tripura	158	158	0	0.0	355	355	0	0.0
North-Eastern Region	1,864	1,862	2	0.1	3,952	3,952	0	0.0
All India	1,63,861	1,63,561	300	0.2	2,70,832	2,70,820	12	0.0

The state- wise & month wise ‘Power Supply Position’ including the State of Tamil Nadu in terms of energy and peak for FY 2026-27 (upto June, 2026):

State/ System / Region	June, 2026 (Provisional)							
	Energy Requirement	Energy Supplied	Energy not Supplied		Peak Demand	Peak Met	Demand not Met	
	(MU)	(MU)	(MU)	(%)	(MW)	(MW)	(MW)	(%)
Chandigarh	214	214	0	0.0	456	456	0	0.0
Delhi	4,340	4,339	1	0.0	8,748	8,748	0	0.0
Haryana	7,697	7,665	32	0.4	15,558	15,558	0	0.0
Himachal Pradesh	1,138	1,136	2	0.2	1,913	1,913	0	0.0
Jammu & Kashmir	1,584	1,569	15	0.9	2,653	2,653	0	0.0
Punjab	9,123	9,082	41	0.4	17,004	17,004	0	0.0
Rajasthan	9,764	9,764	0	0.0	17,672	17,672	0	0.0
Uttar Pradesh	18,816	18,816	0	0.0	33,197	32,673	524	1.6
Uttarakhand	1,689	1,685	4	0.2	3,078	3,063	15	0.5
Northern Region	54,562	54,466	96	0.2	94,416	93,981	435	0.5
Chhattisgarh	3,792	3,788	4	0.1	5,990	5,990	0	0.0
Gujarat	16,543	16,543	0	0.0	28,833	28,833	0	0.0
Madhya Pradesh	8,400	8,400	0	0.0	13,439	13,439	0	0.0
Maharashtra	19,371	19,349	22	0.1	31,273	31,273	0	0.0
Dadra & Nagar Haveli and Daman & Diu	948	948	0	0.0	1,427	1,427	0	0.0
Goa	473	473	0	0.0	835	835	0	0.0
Western Region	50,630	50,604	26	0.1	80,330	80,330	0	0.0
Andhra Pradesh	7,540	7,537	3	0.0	13,935	13,935	0	0.0
Telangana	7,098	7,095	3	0.0	12,685	12,685	0	0.0
Karnataka	8,363	8,360	3	0.0	16,367	16,357	10	0.1
Kerala	2,618	2,610	8	0.3	5,481	5,472	9	0.2
Tamil Nadu	12,213	12,209	4	0.0	20,945	20,945	0	0.0
Puducherry	341	341	0	0.0	572	571	1	0.2
Lakshadweep	6	6	0	0.0	13	13	0	0.0
Southern Region	38,176	38,156	20	0.1	64,266	64,266	0	0.0
Bihar	5,324	5,307	17	0.3	9,068	9,068	0	0.0
DVC	2,122	2,122	0	0.0	3,335	3,335	0	0.0
Jharkhand	1,549	1,548	1	0.1	2,583	2,583	0	0.0
Odisha	4,249	4,248	1	0.0	7,854	7,854	0	0.0
West Bengal	7,513	7,511	2	0.0	13,570	13,570	0	0.0
Sikkim	41	41	0	0.0	121	121	0	0.0
Andaman-Nicobar	40	39	1	2.5	70	65	5	7.1
Eastern Region	20,805	20,783	22	0.1	34,324	34,324	0	0.0
Arunachal Pradesh	102	102	0	0.0	202	202	0	0.0
Assam	1,403	1,399	4	0.3	2,683	2,658	25	0.9
Manipur	103	103	0	0.0	264	264	0	0.0
Meghalaya	183	183	0	0.0	366	366	0	0.0
Mizoram	61	61	0	0.0	155	155	0	0.0
Nagaland	97	97	0	0.0	204	204	0	0.0
Tripura	177	177	0	0.0	366	366	0	0.0
North-Eastern Region	2,127	2,123	4	0.2	4,018	4,018	0	0.0
All India	1,66,300	1,66,131	169	0.1	2,65,184	2,64,768	416	0.2

**ANNEXURE REFERRED IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 147
ANSWERED IN THE RAJYA SABHA ON 20.07.2026**

State/UT-wise Loss Reduction and Smart Metering works sanction details under RDSS (in Rs. Cr.)

State/UTs	Sanctioned Cost of Smart Metering	Sanctioned Cost of Infrastructure Works	Total Sanctioned Outlay	Total Sanctioned GBS	GBS released	GBS Utilized
Andaman & Nicobar Islands	54	462	516	428	41	41
Andhra Pradesh	4,128	10,708	14,836	7,240	2,980	2,956
Arunachal Pradesh	184	1,042	1,226	992	301	249
Assam	4,050	3,395	7,444	4,107	2,473	2,471
Bihar	2,021	10,559	12,581	6,748	3,536	3,533
Chhattisgarh	4,105	4,021	8,126	3,217	1,231	1,231
Delhi	13	324	337	196	0	0
Goa	469	247	716	243	41	41
Gujarat	10,642	6,089	16,731	5,538	1,936	1,917
Haryana	0	6,794	6,794	4,076	854	702
Himachal Pradesh	1,788	2,327	4,116	2,561	495	495
Jammu & Kashmir	1,064	5,034	6,098	4,803	2,260	2,156
Jharkhand	858	3,468	4,326	2,272	599	570
Karnataka	0	45	45	27	10	5
Kerala	8,231	3,108	11,339	3,278	517	509
Ladakh	0	876	876	788	219	82
Madhya Pradesh	8,911	9,738	18,649	7,347	3,469	3,429
Maharashtra	15,215	17,238	32,453	13,182	4,562	4,561
Manipur	121	627	748	602	152	152
Meghalaya	310	1,232	1,542	1,195	404	349
Mizoram	182	322	503	351	101	101
Nagaland	208	466	674	479	116	116
Puducherry	251	84	335	107	14	14
Punjab	5,769	3,873	9,642	3,284	629	629
Rajasthan	9,715	18,693	28,408	12,902	3,679	3,327
Sikkim	97	420	518	409	108	108
Tamil Nadu	19,235	9,568	28,803	9,139	1,498	1,256
Telangana	0	120	120	72	36	36
Tripura	319	598	917	619	314	307
Uttar Pradesh	18,956	21,782	40,739	16,570	7,028	6,989
Uttarakhand	1,106	2,371	3,477	2,444	6,86	636
West Bengal	12,670	7,223	19,893	6,423	1,268	1,267
Total	1,30,671	1,52,854	2,83,525	1,21,637	41,555	40,233

ANNEXURE-III

**ANNEXURE REFERRED IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 147
ANSWERED IN THE RAJYA SABHA ON 20.07.2026**

Details of BESS capacity allocated to Southern States under the above said VGF Schemes for implementation:

Sl. No.	State/ UTs	Total Capacity Allocation (in MWh)
1	Tamil Nadu	2,500
2	Karnataka	3,000
3	Andra Pradesh	3,000
5	Telangana	1,500
