GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
STARRED QUESTION NO.5
ANSWERED ON 03.02.2025

STATE-WISE POWER GENERATION CAPACITY

5. SHRI MANAS RANJAN MANGARAJ:

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

(a) the details of the total power generation capacity, specifying sources such as coal, gas, hydro, solar and wind, State-wise;

(b) the progress made under various initiatives to increase renewable energy adoption across States;

(c) the measures being taken to ensure the integration of renewable energy with the existing power grid; and

(d) the challenges being faced in reducing transmission and distribution losses and the steps taken to address them?

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 RAJYA SABHA STARRED QUESTION NO.5 FOR REPLY ON 03.02.2025 REGARDING STATE-WISE POWER GENERATION CAPACITY ASKED BY SHRI MANAS RANJAN MANGARAJ

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(a) : The details of State/ UT-wise and source-wise power generation capacity as on 31.12.2024 are given at **Annexure-I**.

(b) : The Government of India has committed to augment non-fossil based installed electricity generation capacity to 500 GW by the year 2030. As on 31.12.2024, a total of 209.44 GW renewable energy capacity has been installed in the country. The details of State/UT-wise installed Renewable capacity (as on 31.12.2024) are given at **Annexure-II**.

The Government of India has taken several steps and initiatives to promote and accelerate renewable energy capacity in the country. These, inter-alia, include the following:

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 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 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.

(c): A robust national grid has been established to facilitate the transfer of power from power surplus regions to power deficit regions. The inter-regional transmission capacity has been increased from 75,050 MW during 2016-17 to 1,18,740 MW as on 31.12.2024. The capacity of National Grid is being expanded on a continuous basis commensurate with the growth in electricity generation and electricity demand. The Government has taken various measures for integration of RE sources into the National Grid to ensure reliability and stability: -

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

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

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

iv. Flexibilisation of thermal generation is mandated to address the variability of RE generation.

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

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

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

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

The challenges faced in reducing the distribution losses relate to infrastructure constraints and technology upgradation, sub-optimal billing and collection efficiencies including delays in payment of Government department dues and subsidies by the State Governments which is critical for improving the financial viability and operational performance of the Utilities.

To help States address the above challenges and improve the quality and reliability of power supply to consumers, Government of India launched the Revamped Distribution Sector Scheme (RDSS), in July 2021, with an outlay of Rs.3,03,758 Cr. The scheme aims to reduce the Aggregate Technical and Commercial (AT&C) losses to pan-India levels of 12-15% and ACS-ARR gap to zero.

Under the Scheme, Projects worth Rs. 2.78 lakh Cr. have been sanctioned. Loss reduction Infrastructure projects amounting to Rs. 1.48 lakh Cr. have been sanctioned which includes works for replacement of bare conductors with covered conductors, laying Low Tension Aerial Bunched (LT AB) cables, and upgradation/augmentation of Distribution transformers (DT)/sub-stations, etc.

Further, 19.79 Cr prepaid smart consumer meters, 2.11 lakh communicable feeder meters and 52.53 lakhs Distribution Transformer (DT) communicable meters have been sanctioned.

The sanctioned works are under various stages of implementation. Further, the fund disbursement under the scheme has been linked to performance of the State against different financial parameters.

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 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 21.91% in FY2021 to 15.37% in FY2023.

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ANNEXURE-I

ANNEXURE REFERRED TO IN PART (a) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 05 ANSWERED IN THE RAJYA SABHA ON 03.02.2025 REGARDING STATE-WISE POWER GENERATION CAPACITY

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The details of State/ UT-wise and source-wise power generation capacity as on 31.12.2024:

(All figures in MW)

State/UT	Modewise breakup							Total
	Coal	Lignite	Gas	Diesel	Hydro	RES (other than Large Hydro)	Nuclear	
Andhra Pradesh	13,190	0	4,678.54	36.8	1610	9,564.62	0	29,079.96
Arunachal Pradesh	0	0	0	0	1115	155.46	0	1,270.46
Assam	750	0	597.36	0	350	221.55	0	1918.9
Bihar	9,060	0	0	0	0	527.96	0	9,587.96
Chhattisgarh	23,688	0	0	0	120	1,687.34	0	25,495.34
Goa	0	0	48	0	0	54.55	0	102.55
Gujarat	14,692	1,400	7,551.41	0	1990	29,492.79	1,840	56,966.2
Haryana	5,330	0	431.59	0	0	2,353.08	0	8,114.67
Himachal Pradesh	0	0	0	0	10,281.02	1,173.42	0	11,454.44
Jammu and Kashmir	0	0	175	0	3360	264.29	0	3,799.29
Jharkhand	5,570	0	0	0	210	224.06	0	6,004.06
Karnataka	9,480	0	0	25.2	3,689.2	18,912.92	880	32,987.32
Kerala	0	0	533.58	159.96	1,904.15	1,656.18	0	4,253.87
Ladakh	0	0	0	0	89	53.59	0	142.59
Madhya Pradesh	22,000	0	0	0	2,235	8,076.94	0	32,311.94
Maharashtra	24,006.01	0	3,207.08	0	3,047	17,574.07	1,400	49,234.16
Manipur	0	0	0	36	105	19.24	0	160.24
Meghalaya	0	0	0	0	322	73.11	0	395.11
Mizoram	0	0	0	0	60	75.86	0	135.86
Nagaland	0	0	0	0	75	35.84	0	110.84
Odisha	9,600	0	0	0	2,154.55	790.77	0	12,545.32
Punjab	5,680	0	0	0	1,096.3	2130.4	0	8,906.7
Rajasthan	9,200	1,580	1,022.83	0	411	31,835.38	1,180	45,229.21
Sikkim	0	0	0	0	2,282	62.67	0	2,344.67
Tamil Nadu	10,522.5	3,640	1,027.18	211.7	2,178.2	22,145.22	2,440	42,164.8
Telangana	9,442.5	0	0	0	2,405.6	5,282.74	0	17,130.84
Tripura	0	0	1,067.6	0	0	37.24	0	1,104.84
Uttar Pradesh	26,715	0	1,493.14	0	501.6	5,667.47	440	34,817.21
Uttarakhand	0	0	664	0	4,035.35	969.13	0	5668.48
West Bengal	13,487	0	80	0	1,341.2	757.48	0	15,665.68
Andaman & Nicobar Islands	0	0	0	92.71	0	35.16	0	127.87
Chandigarh	0	0	0	0	0	77.05	0	77.05
DNH&DD	0	0	0	0	0	51.87	0	51.87
Delhi	0	0	2,208.4	0	0	378.9	0	2,587.3
Lakshadweep	0	0	0	26.83	0	4.97	0	31.8
Puducherry	0	0	32.5	0	0	53.26	0	85.76
Total	**2,12,413.01**	**6,620**	**24,818.21**	**589.2**	**46,968.17**	**1,62,476.58**	**8,180**	**4,62,065.16**

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ANNEXURE-II

ANNEXURE REFERRED TO IN PART (a) OF THE STATEMENT LAID IN REPLY TO STARRED QUESTION NO. 05 ANSWERED IN THE RAJYA SABHA ON 03.02.2025 REGARDING STATE-WISE POWER GENERATION CAPACITY

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Details of State/UT-wise installed Renewable capacity as on 31.12.2024:

(All figures in MW)

S. No.	STATES / UTs	Small Hydro Power	Wind Power	Bio Power Total	Solar Power Total	Large Hydro	Total Capacity
		(MW)	(MW)	(MW)	(MW)	(MW)	(MW)
1	Andhra Pradesh	163.31	4,096.65	574.39	4,730.27	1,610	11,174.62
2	Arunachal Pradesh	140.61	0	0	14.85	1,115	1,270.46
3	Assam	34.11	0	2	185.44	350	571.55
4	Bihar	70.7	0	140.22	317.04	0	527.96
5	Chhattisgarh	76	0	275	1,336.34	120	1,807.34
6	Goa	0.05	0	1.94	52.56	0	54.55
7	Gujarat	106.64	12,473.78	116.6	16,795.77	1,990	31,482.79
8	Haryana	73.5	0	292.62	1,986.96	0	2,353.08
9	Himachal Pradesh	1,000.71	0	10.2	162.51	10,281.02	11,454.44
10	Jammu & Kashmir	189.93	0	0	74.36	3,360	3,624.29
11	Jharkhand	4.05	0	20.14	199.87	210	434.06
12	Karnataka	1,284.73	6,731.3	1,909.95	8,986.94	3,689.2	22,602.12
13	Kerala	276.52	63.5	2.5	1,313.66	1,904.15	3,560.33
14	Ladakh	45.79	0	0	7.8	89	142.59
15	Madhya Pradesh	123.71	2,844.29	135.36	4,973.58	2235	10,311.94
16	Maharashtra	384.28	5,216.38	2,984.05	8,989.36	3,047	20,621.07
17	Manipur	5.45	0	0	13.79	105	124.24
18	Meghalaya	55.03	0	13.8	4.28	322	395.11
19	Mizoram	45.47	0	0	30.39	60	135.86
20	Nagaland	32.67	0	0	3.17	75	110.84
21	Odisha	115.63	0	59.22	615.92	2,154.55	2,945.32
22	Punjab	176.1	0	567.25	1,387.05	1,096.3	3,226.7
23	Rajasthan	23.85	5,195.82	126.06	26,489.65	411	32,246.38
24	Sikkim	55.11	0	0	7.56	2,282	2,344.67
25	Tamil Nadu	123.05	11,413.34	1,045.45	9,563.38	2,178.2	24,323.42
26	Telangana	90.87	128.1	221.67	4842.1	2,405.6	7,688.34
27	Tripura	16.01	0	0	21.23	0	37.24
28	Uttar Pradesh	49.1	0	2,271.38	3,346.99	501.6	6,169.07
29	Uttarakhand	233.82	0	142.24	593.07	4,035.35	5,004.48
30	West Bengal	98.5	0	348.36	310.62	1,341.2	2,098.68
31	Andaman & Nicobar Islands	5.25	0	0	29.91	0	35.16
32	Chandigarh	0	0	0	77.05	0	77.05
33	Dadra & Nagar Haveli and Daman & Diu	0	0	3.75	48.12	0	51.87
34	Delhi	0	0	84	294.9	0	378.9
35	Lakshadweep	0	0	0	4.97	0	4.97
36	Puducherry	0	0	0	53.26	0	53.26
	Total (MW)	**5,100.55**	**48,163.16**	**11,348.15**	**97,864.72**	**46,968.17**	**2,09,444.75**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.105
ANSWERED ON 03.02.2025

INCREASING CAPACITY OF POWER GENERATION IN TAMIL NADU

105 SHRI R. GIRIRAJAN:

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

(a) whether Government has taken steps to increase the capacity of power generation in Tamil Nadu to match the increasing demand in the next two years;

(b) if so, the present capacity of power generation in Tamil Nadu and the expected increase of power generation in the next two years in Tamil Nadu; and

(c) whether Government has taken adequate steps to encourage and accommodate new private players in power generation especially in Tamil Nadu, 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 present installed generation capacity in Tamil Nadu is 41,741 MW. The following measures have been taken to increase the power generation capacity in the State:

(i) 3,440 MW of thermal capacity and 500 MW of pumped storage plants in the state sector are anticipated to be commissioned in the next two years.

(ii) 2,500 MW nuclear power capacity is also expected to be commissioned in the Central Sector, out of which 1,251.8 MW has been allocated to Tamil Nadu.

(iii) About 6,900 MW of renewable capacity is anticipated to be added in the state over the next two years.

(iv) Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.

(c): As per the Electricity Act 2003, the generation of electricity is a delicensed activity. However, the Government of India has taken several steps to encourage investment by the private players in the power generation including in Tamil Nadu particularly in renewable sector**.** These, inter-alia, include the following:

(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 (REIAs) from FY 2023-24 to FY 2027-28.

…….2.

(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) In order to facilitate the integration of large scale renewable generation capacity addition in the country, the Transmission plan i.e "Transmission System for Integration of over 500 GW RE Capacity by 2030" has been prepared by CEA. This includes the transmission system for evacuation of 8 GW of RE (including 5 GW of off shore wind) in Tamil Nadu, out of which, for 1.5 GW RE capacity, transmission system (ISTS) is already commissioned; for 1 GW (including 0.5 GW offshore wind) RE capacity, transmission system (ISTS) is under implementation and transmission system (ISTS) for evacuation of 5.5 GW RE capacity has been planned and would be taken up for implementation in a phased manner commensurate with the RE capacity addition.

(v) Project Development Cell for attracting and facilitating investments has been set up.

(vi) 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.

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

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

(ix) The government has approved the viability gap funding (VGF) scheme at a total outlay of Rs 7453 Cr for the implementation of Offshore Wind Energy Projects , for the installation of 1 GW of offshore wind energy projects, out of which 500 MW is to be installed off the coast of Tamil Nadu.

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.148
ANSWERED ON 03.02.2025

CSR FUNDING AND PROJECTS IN HIMACHAL PRADESH

148 SHRI HARSH MAHAJAN:

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

(a) the number of power projects that have been sanctioned in Himachal Pradesh;

(b) the current status of these projects, the details thereof, district-wise;

(c) the amount of CSR funding generated and released through these projects during the last three years and the manner in which and where these funds are being utilized, the details thereof, project-wise; and

(d) according to the relief and rehabilitation package whether all jobs been allocated to entitled people, the details thereof?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b): 41 Hydroelectric projects (above 25 MW), with aggregate installed capacity of 13,488 MW are under operation or under various stages of development in the state of Himachal Pradesh. District-wise details along-with status of these projects is given at **Annexure-I.**

03 Solar Power projects (SPP) with installed capacity of 34.3 MW are under operation or under development by SJVN/BBMB in Himachal Pradesh. District-wise details along-with status of these projects is given at **Annexure-II.**

(c) & (d): The details of CSR expenditure and jobs allocated by CPSUs, operating in the state are at **Annexure-III.**

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 148 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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List of Hydro Electric Projects (above 25 MW) sanctioned in Himachal Pradesh

SL No.	Name of Scheme	District	Sector	Installed Capacity	Present Status
1	Chamera St-II	Chamba	Central	300	Under Operation
2	Kol Dam	Mandi	Central	800	Under Operation
3	Chamera St-III	Chamba	Central	231	Under Operation
4	Parbati St-III	Kullu	Central	520	Under Operation
5	Rampur	Shimla	Central	412	Under Operation
6	Parbati St-II	Kullu	Central	800	Under Construction
7	Luhri Stage-I	Kullu/Shimla	Central	210	Under Construction
8	Sunni Dam	Shimla / Mandi	Central	382	Under Construction
9	Dugar	Chamba	Central	500	Under development.
10	Bhakra Left	Bilaspur	Central	630	Under Operation
11	Bhakra Right	Bilaspur	Central	785	Under Operation
12	Dehar	Mandi	Central	990	Under Operation
13	Pong	Kangra	Central	396	Under Operation
14	Baira Siul	Chamba	Central	180	Under Operation
15	Chamera-I	Dalhousie	Central	540	Under Operation
16	NathpaJhakri	Kinnaur	Central	1500	Under Operation
17	Dhaulasidh (SJVN)	Hamirpur/ Kangra	Central	66	Under Construction
18	Larji	Mandi	State	126	Under Operation
19	Sainj	Kullu	State	100	Under Operation
20	Uhl St-III	Mandi	State	100	Under Construction
21	ShongtongKarcham	Kinnaur	State	450	Under Construction
22	Thana plaun	Mandi	State	191	Under development
23	Integrated Kashang	Kinnaur	State	195	Under Operation
24	SawraKuddu	Shimla	State	111	Under Operation
25	Bassi	Mandi	State	66	Under Operation
26	Giri Bata	Sirmaur	State	60	Under Operation
27	Sanjay	Kinnaur	State	120	Under Operation
28	Shanan	Mandi	State	110	Under Operation
29	Sorang	Kinnaur	State	100	Under Operation
30	Chanju-III	Chamba	State	48	Under Construction
31	Baspa St-II	Kinnaur	Private	300	Under Operation
32	Malana	Kullu	Private	86	Under Operation
33	Allain Duhangan	Kullu	Private	192	Under Operation
34	KarchamWangtoo	Kinnaur	Private	1045	Under Operation
35	Bajoli Holi	Chamba	Private	180	Under Operation
36	Kutehr	Chamba	Private	240	Under Construction
37	DhamwariSunda	Shimla	Private	70	Under development
38	Malana-II	Malana	Private	100	Under Operation
39	Budhil	Chamba	Private	70	Under Operation
40	Chanju-I	Chamba	Private	36	Under Operation
41	Tidong-I	Kinnaur	Private	150	Under Construction

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 148 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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List of Solar Power projects (SPP) in Himachal Pradesh:

S. No.	Name of Solar Project	District	Capacity (MW)	Status
1	Solar PV PP at NJHPS	Shimla	1.3	Under Operation
2	Floating SPP at Nangal Dam (BBMB)	Bilaspur	15	Under Construction
3	BBMB Ground Mounted SPP	Bilaspur, Kangra	18	Under Construction

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ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (c) & (d) OF UNSTARRED QUESTION NO. 148 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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Sl. No	Name of Project	Districts	CSR (In Rs. Crore)				Jobs allocated*	CSR Verticals
SJVN			**2021-22**	**2022-23**	**2023-24**	**Total**		
1	Nathpa Jhakri Hydro Power Station (NJHPS)	Shimla and Kinnaur	8.62	5.67	3.91	**18.20**	61	(i) Healthcare & sanitation (including national theme based CSR activities in Aspirational district, Chamba) (ii) Education and skill Development (iii) Empowerment of vulnerable section of society, women empowerment, measure for the benefits of armed forces etc. (iv) Infrastructural development & community development (v) Preservation and promotion of culture, sports etc. (vi) Sustainable Development (vii) Assistance to the victims of natural disaster /calamities (viii) Contribution to incubators (ix) Miscellaneous & admn. expenses
2	Rampur Hydro Power Station (RHPS)	Shimla and Kullu	3.32	2.82	1.39	**7.52**	6	
3	Luhri Hydro Electric Project (LHEP-1)	Shimla and Kullu	1.49	9.22	10.03	**20.74**	57	
4	Dhaulasidh Hydro Electric Project (DSHEP)	Hamirpur, Kangra and Chamba	4.23	3.96	4.06	**12.26**		
5	Sunni Dam Hydro Electric Project (SDHEP)	Shimla and Mandi	2.46	1.99	1.79	**6.24**	10	
6	Corporate Office, Shimla	Shimla, Chamba, Mandi, Kinnaur, Kullu, Hamirpur, Kangra, Lahaul & Spiti, Sirmour, Una, Solan and Mandi	16.17	18.29	9.39	**43.85**		

NHPC								
1	Regional Office- Banikhet	Chamba	0.20	0.31	0.40	**0.90**		(i) Education & Skill Development (ii) Health & Nutrition (iii) SBA+SVA (iv) Women Empowerment/Senior Citizen (v) Environment (vi) Art & Culture (vii)Sports (viii)Rural Development (ix) Disaster Mgmt. (x) Capacity Building & others
2	Baira Siul Power Station	Chamba	0.59	0.55	3.65	**4.79**	994	
3	Chamera-I Power Station	Chamba	1.89	2.35	2.54	**6.78**	1144	
4	Chamera-II Power Station	Chamba	8.34	3.59	5.67	**17.60**	292	
5	Chamera-III Power Station	Chamba	0.20	0.28	0.23	**0.71**		
6	Parbati-III Power Station	Kullu	0.21	0.37	0.07	**0.65**	233	
7	PARBATI-II HE Project	Kullu	3.96	4.13	4.72	**12.82**	448	
8	CSR Works carried out by Corporate Office Faridabad	Chamba, Kullu, Mandi, Bilaspur, Shimla, Kangra, Sirmaur, Solan, Una, Hamirpur	4.90	11.82	0.17	**16.88**		
NTPC								
1	Koldam Hydroelectric Power Project	Bilaspur	2.11	1.56	0.17	**3.83**	546	(i) Education (ii) Health (iii) Drinking Water (iv) Sanitation (v) Swachh Vidyalaya Abhiyan (vi) Support for Divyangjans (Appliances) (v) Environment (vi) Rural development Projects (vii) Women Empowerment (viii) Vocational (ix) Art & Culture (x) Sports (xi) Animal Health

* : Including contractual employment

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.149
ANSWERED ON 03.02.2025

IMPLEMENTATION OF A NEW ELECTRICITY POLICY

149 DR. AJEET MADHAVRAO GOPCHADE:

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

(a) whether Government is intending to develop and implement a New Electricity Policy, if so, the summary of its main features, including the policy's goals and objectives;

(b) whether major stakeholders and State Governments will be included in the policy formulation process, details thereof, if not, the reasons therefor, the feedback State Governments have provided regarding this issue; and

(c) the measures the Central Government has undertaken in collaboration with State Governments to combat electricity theft, the specific details for each State?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : The Central Government intends to formulate a new Electricity Policy to align with the vision of Viksit Bharat by 2047. As per Section 3 of the Electricity Act, 2003, the National Electricity Policy is prepared in consultation with State Governments and Central Electricity Authority.

(c) : The Electricity Act, 2003 includes various provisions to combat electricity theft. Additionally, Central Government has launched the Revamped Distribution Sector Scheme (RDSS) in July, 2021 with the objective of improving the operational efficiency and financial sustainability of the electricity distribution utilities in the country. The scheme aims to reduce pan-India Aggregate Technical and Commercial (AT&C) losses to 12-15% and the difference between Average Cost of Supply (ACS) – Average Revenue Realized (ARR) to zero. Under RDSS, smart metering works covering 19.79 crore consumers, 52.53 lakh distribution transformers and 2.11 lakh feeders have been sanctioned to 45 DISCOMs/ Power Departments i.e., distribution utilities in 28 States/ UTs.

Smart metering which facilitates energy accounting and energy auditing without any human intervention, has been identified as a key initiative under the scheme to identify theft-prone pockets and high loss areas. Prepaid smart metering of consumers is also one of the major components under the scheme which would help in improving the collection efficiency of distribution utilities. The state-wise details of sanctioned Smart Metering works are provided at **Annexure–I**.

Further, the scheme also provides financial assistance to distribution utilities for carrying out infrastructure works. These include replacement of bare conductors with covered conductors, using Low Tension Aerial Bundled (LT AB) cables and High Voltage Distribution System (HVDS) etc. which would help to combat theft. The state-wise sanctioned cost of Distribution Infrastructure and Smart Metering works under RDSS is provided at **Annexure–II.**

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 149 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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State wise Smart Metering Works sanctioned under RDSS

Sl. No.	States/ UTs	Consumer Meters	DT Meters	Feeder Meters
1	A & N Islands	83,573	1,148	114
2	Andhra Pradesh	56,08,846	2,93,140	17,358
3	Arunachal Pradesh	2,87,446	10,116	688
4	Assam	63,64,798	77,547	2,782
5	Bihar	23,50,000	2,50,726	6,427
6	Chhattisgarh	59,62,115	2,10,644	6,720
7	Delhi	-	766	2,755
8	Goa	7,41,160	8,369	827
9	Gujarat	1,64,81,871	3,00,487	5,229
10	Himachal Pradesh	28,00,945	39,012	1,951
11	Jammu and Kashmir	14,07,045	88,037	2,608
12	Jharkhand	13,41,306	19,512	1,226
13	Kerala	1,32,89,361	87,615	6,025
14	Madhya Pradesh	1,29,80,102	4,19,396	29,708
15	Maharashtra	2,35,64,747	4,10,905	29,214
16	Manipur	1,54,400	11,451	357
17	Meghalaya	4,60,000	11,419	1,324
18	Mizoram	2,89,383	2,300	398
19	Nagaland	3,17,210	6,276	392
20	Puducherry	4,03,767	3,105	180
21	Punjab	87,84,807	1,84,044	12,563
22	Rajasthan	1,42,74,956	4,34,608	27,128
23	Sikkim	1,44,680	3,229	633
24	Tamil Nadu	3,00,00,000	4,72,500	18,274
25	Tripura	5,47,489	14,908	473
26	Uttar Pradesh	2,69,79,056	15,26,801	20,874
27	Uttarakhand	15,87,870	59,212	2,602
28	West Bengal	2,07,17,969	3,05,419	11,874
	Grand Total	**19,79,24,902**	**52,52,692**	**2,10,704**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO. 149 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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State wise Distribution Infrastructure and Smart Metering Works sanctioned under RDSS

(Amount in Rs. Crores)

Sl. No.	States/ UTs	Sanctioned cost of Smart metering works	Sanctioned Cost of Distribution Infrastructure works	Total Sanctioned Cost
	1	2	3	4=2+3
1	Andaman & Nicobar Islands	54	462	516
2	Andhra Pradesh	4,128	10,687	14,814
3	Arunachal Pradesh	184	1,042	1,226
4	Assam	4,050	3,395	7,444
5	Bihar	2,021	8,406	10,427
6	Chhattisgarh	4,105	3,964	8,070
7	Delhi	13	324	337
8	Goa	469	247	716
9	Gujarat	10,642	6,089	16,731
10	Haryana	-	6,797	6,797
11	Himachal Pradesh	1,788	2,327	4,115
12	Jammu & Kashmir	1,064	4,771	5,835
13	Jharkhand	858	3,344	4,202
14	Karnataka	-	34	34
15	Kerala	8,231	3,011	11,243
16	Ladakh	-	876	876
17	Madhya Pradesh	8,911	9,384	18,295
18	Maharashtra	15,215	17,209	32,424
19	Manipur	121	615	737
20	Meghalaya	310	1,232	1,542
21	Mizoram	182	319	500
22	Nagaland	208	461	668
23	Puducherry	251	84	335
24	Punjab	5,769	3,873	9,642
25	Rajasthan	9,715	17,427	27,142
26	Sikkim	97	416	514
27	Tamil Nadu	19,235	9,568	28,803
28	Telangana	-	120	120
29	Tripura	319	598	917
30	Uttar Pradesh	18,956	21,612	40,568
31	Uttarakhand	1,106	1,717	2,823
32	West Bengal	12,670	7,223	19,893
	Grand Total	**1,30,671**	**1,47,635**	**2,78,306**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.150
ANSWERED ON 03.02.2025

POWER DEFICIT SITUATION IN THE COUNTRY

150 SHRI PARIMAL NATHWANI:

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

(a) the details of power deficit situation in the country during the last five years, State-wise;

(b) the details of the key issues leading to power deficit situation in the country; and

(c) the details of steps taken or to be taken by Government to reduce/remove power deficit in the country?

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 4,62,065 MW. Government of India has addressed the critical issue of power deficiency by adding 2,30,050 MW of generation capacity since April, 2014 transforming the country from power deficit to power sufficient. The details of power supply position in the country during the last five years and current year (upto December, 2024) in terms of Energy are given at **Annexure-I**. The State/ UT-wise details of power supply position during the last five years and current year (upto December, 2024) are given at **Annexure-II**.

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.

(c): Following steps have been taken by the Government to reduce the power deficit and to meet the increasing power demand in the country:

1. **Generation Planning:**

(i) Installed generation capacity in 2031-32 is likely to be 900 GW. This includes capacity from conventional sources- Coal, Lignite etc., renewable sources- Solar, Wind, Hydro, Pump Storage project (PSP) and Battery Energy Storage System (BESS).

(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 include power generation as well as power procurement planning.

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(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 and 8,000 MW Pumped Storage Projects (PSP) are under construction. 24,225.5 MW of hydro electric projects and 50,760 MW of PSP 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 is under various stages of planning and approval.

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) An expenditure of approx Rs. 1.85 lakh crore was incurred for strengthening the distribution system of the country through the schemes of Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS) and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA). The Government of India has now launched "Revamped Distribution Sector Scheme (RDSS) on 20th 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 crore and a Gross Budgetary Support of Rs. 97,631 crore from Government of India over a period of five years from 2021-22 to FY 2025-26. Under RDSS, projects worth Rs. 2.78 lakh crore for distribution infrastructure works and smart metering works have been sanctioned at National level.

(ii) Realizing the importance of the requirement of Distribution infrastructure for meeting the projected demand up to 2030, Distribution Perspective Plan upto 2029-30 has been prepared by CEA and has been shared with the States/ UTs.

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.

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(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 Establishments 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 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 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. This will enable manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV Module

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 150 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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Details of power supply position in the country during the last five years and current year (upto December, 2024) in terms of Energy:

Year	Energy			
	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	1,472	0.1

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 150 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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The State/ UT-wise details of power supply position during the last five years and current year (upto December, 2024)

	April, 2019 -March, 2020				**April, 2020 - March, 2021**			
State/UT	**Energy Requirement**	**Energy Supplied**	**Energy not Supplied**		**Energy Requirement**	**Energy Supplied**	**Energy not Supplied**	
	(MU)	**(MU)**	**(MU)**	**(%)**	**(MU)**	**(MU)**	**(MU)**	**(%)**
Chandigarh	1,732	1,732	0	0	1,523	1,523	0	0
Delhi	33,086	33,077	9	0	29,560	29,555	4	0
Haryana	54,505	54,492	13	0	53,161	53,108	53	0.1
Himachal Pradesh	10,424	10,353	71	0.7	10,186	10,130	56	0.5
Jammu & Kashmir	20,025	16,259	3,767	18.8	19,773	17,222	2,551	12.9
Punjab	56,776	56,770	6	0	58,445	58,377	67	0.1
Rajasthan	81,281	81,222	58	0.1	85,311	85,205	106	0.1
Uttar Pradesh	1,22,549	1,21,004	1,545	1.3	1,24,367	1,23,383	984	0.8
Uttarakhand	14,472	14,376	96	0.7	13,827	13,818	8	0.1
Chhattisgarh	30,111	30,107	4	0	30,472	30,449	22	0.1
Gujarat	1,13,940	1,13,939	1	0	1,11,622	1,11,622	0	0
Madhya Pradesh	76,172	76,172	0	0	83,437	83,437	0	0
Maharashtra	1,55,167	1,55,166	0	0	1,50,679	1,50,663	16	0
Daman & Diu	2,574	2,574	0	0	2,223	2,223	0	0
Dadra & Nagar Haveli	6,528	6,528	0	0	5,497	5,497	0	0
Goa	4,350	4,350	0	0	4,083	4,083	0	0
Andhra Pradesh	65,452	65,414	38	0.1	62,080	62,076	4	0
Telangana	68,306	68,303	3	0	66,998	66,994	4	0
Karnataka	72,799	72,796	3	0	68,851	68,831	19	0
Kerala	26,315	26,265	50	0.2	25,118	25,102	16	0.1
Tamil Nadu	1,08,816	1,08,812	4	0	1,01,194	1,01,189	5	0
Puducherry	2,847	2,846	1	0	2,644	2,644	0	0
Lakshadweep	46	46	0	0	56	56	0	0
Bihar	31,627	31,533	94	0.3	34,171	34,018	153	0.4
DVC	22,429	22,427	2	0	21,368	21,368	0	0
Jharkhand	8,941	8,872	69	0.8	9,953	9,675	278	2.8
Odisha	29,692	29,692	0	0	29,848	29,848	0	0
West Bengal	52,948	52,824	124	0.2	51,644	51,543	100	0.2
Sikkim	554	554	0	0	546	546	0	0
Andaman-Nicobar	346	323	23	6.7	346	323	23	6.7
Arunachal Pradesh	753	749	4	0.5	719	714	5	0.7
Assam	9,804	9,288	516	5.3	10,192	9,815	377	3.7
Manipur	924	917	6	0.7	974	969	5	0.5
Meghalaya	2,112	2,064	48	2.3	2,031	2,005	26	1.3
Mizoram	647	643	4	0.7	728	723	4	0.6
Nagaland	814	809	5	0.7	826	822	4	0.5
Tripura	1,538	1,515	23	1.5	1,484	1,481	3	0.2
All India	12,91,010	12,84,444	6,566	0.5	12,75,534	12,70,663	4,871	0.4

The details of State / UT wise Energy Requirement and Energy Supplied in the country from FY 2021-22 and FY 2022-23:

	April, 2021 - March, 2022				April, 2022 - March, 2023			
	Energy Requirement	Energy Supplied	Energy not Supplied		Energy Requirement	Energy Supplied	Energy not Supplied	
State/UT	(MU)	(MU)	(MU)	(%)	(MU)	(MU)	(MU)	(%)
Chandigarh	1,606	1,606	0	0	1,788	1,788	0	0
Delhi	31,128	31,122	6	0	35,143	35,133	10	0
Haryana	55,499	55,209	290	0.5	61,451	60,945	506	0.8
Himachal Pradesh	12,115	12,088	27	0.2	12,649	12,542	107	0.8
Jammu & Kashmir	19,957	18,434	1,524	7.6	19,639	19,322	317	1.6
Punjab	62,846	62,411	436	0.7	69,522	69,220	302	0.4
Rajasthan	89,814	89,310	504	0.6	1,01,801	1,00,057	1,745	1.7
Uttar Pradesh	1,29,448	1,28,310	1,138	0.9	1,44,251	1,43,050	1,201	0.8
Uttarakhand	15,521	15,426	94	0.6	15,647	15,386	261	1.7
Chhattisgarh	31,908	31,872	35	0.1	37,446	37,374	72	0.2
Gujarat	1,23,953	1,23,666	287	0.2	1,39,043	1,38,999	44	0
Madhya Pradesh	86,501	86,455	46	0.1	92,683	92,325	358	0.4
Maharashtra	1,72,823	1,72,809	14	0	1,87,309	1,87,197	111	0.1
Dadra & Nagar Haveli and Daman & Diu	9,433	9,433	0	0	10,018	10,018	0	0
Goa	4,448	4,448	0	0	4,669	4,669	0	0
Andhra Pradesh	68,413	68,219	194	0.3	72,302	71,893	410	0.6
Telangana	70,539	70,523	16	0	77,832	77,799	34	0
Karnataka	72,437	72,417	20	0	75,688	75,663	26	0
Kerala	26,579	26,570	9	0	27,747	27,726	21	0.1
Tamil Nadu	1,09,816	1,09,798	18	0	1,14,798	1,14,722	77	0.1
Puducherry	2,894	2,893	1	0	3,051	3,050	1	0
Lakshadweep	56	56	0	0	64	64	0	0
Bihar	36,216	35,761	455	1.3	39,545	38,762	783	2
DVC	23,741	23,736	4	0	26,339	26,330	9	0
Jharkhand	11,148	10,590	558	5	13,278	12,288	990	7.5
Odisha	38,339	38,332	7	0	42,631	42,584	47	0.1
West Bengal	54,001	53,945	57	0.1	60,348	60,274	74	0.1
Sikkim	610	609	0	0	587	587	0	0
Andaman-Nicobar	335	327	8	2.29199	348	348	0	0.1
Arunachal Pradesh	875	874	1	0.1	915	892	24	2.6
Assam	10,844	10,825	19	0.2	11,465	11,465	0	0
Manipur	1,019	1,018	1	0.1	1,014	1,014	0	0
Meghalaya	2,256	2,243	13	0.6	2,237	2,237	0	0
Mizoram	656	644	12	1.8	645	645	0	0
Nagaland	852	851	1	0.1	926	873	54	5.8
Tripura	1,578	1,578	0	0	1,547	1,547	0	0
All India	13,79,812	13,74,024	5,787	0.4	15,13,497	15,05,914	7,583	0.5

The details of State / UT wise Energy Requirement and Energy Supplied in the country from FY 2023-24 and current year (upto December, 2024)

State / UT	April, 2023 - March, 2024				April, 2024 - December, 2024			
	Energy Requirement	Energy Supplied	Energy not Supplied		Energy Requirement	Energy Supplied	Energy not Supplied	
	(MU)	(MU)	(MU)	(%)	(MU)	(MU)	(MU)	(%)
Chandigarh	1,789	1,789	0	0	1,597	1,597	0	0.0
Delhi	35,501	35,496	5	0	31,308	31,297	11	0.0
Haryana	63,983	63,636	348	0.5	56,486	56,457	29	0.1
Himachal Pradesh	12,805	12,767	38	0.3	10,254	10,219	34	0.3
UT of J&K and Ladakh	20,040	19,763	277	1.4	14,717	14,636	81	0.6
Punjab	69,533	69,528	5	0	63,536	63,536	0	0.0
Rajasthan	1,07,422	1,06,806	616	0.6	84,779	84,476	304	0.4
Uttar Pradesh	1,48,791	1,48,287	504	0.3	1,32,357	1,32,058	299	0.2
Uttarakhand	15,644	15,532	112	0.7	13,016	12,974	42	0.3
Chhattisgarh	39,930	39,872	58	0.1	31,494	31,478	17	0.1
Gujarat	1,45,768	1,45,740	28	0	1,13,697	1,13,697	0	0.0
Madhya Pradesh	99,301	99,150	151	0.2	75,449	75,354	95	0.1
Maharashtra	2,07,108	2,06,931	176	0.1	1,47,892	1,47,834	58	0.0
Dadra & Nagar Haveli and Daman & Diu	10,164	10,164	0	0	8,153	8,153	0	0.0
Goa	5,111	5,111	0	0	4,035	4,035	0	0.0
Andhra Pradesh	80,209	80,151	57	0.1	58,558	58,555	3	0.0
Telangana	84,623	84,613	9	0	61,859	61,855	3	0.0
Karnataka	94,088	93,934	154	0.2	64,447	64,443	4	0.0
Kerala	30,943	30,938	5	0	23,478	23,470	8	0.0
Tamil Nadu	1,26,163	1,26,151	12	0	98,577	98,572	5	0.0
Puducherry	3,456	3,455	1	0	2,735	2,735	0	0.0
Lakshadweep	64	64	0	0	50	50	0	0.0
Bihar	41,514	40,918	596	1.4	35,400	35,246	154	0.4
DVC	26,560	26,552	8	0	19,606	19,603	3	0.0
Jharkhand	14,408	13,858	550	3.8	11,647	11,573	74	0.6
Odisha	41,358	41,333	25	0.1	33,046	33,023	24	0.1
West Bengal	67,576	67,490	86	0.1	55,769	55,681	88	0.2
Sikkim	544	543	0	0	401	401	0	0.0
Andaman-Nicobar	386	374	12	3.2	316	307	9	3.0
Arunachal Pradesh	1,014	1,014	0	0	767	767	0	0.0
Assam	12,445	12,341	104	0.8	10,250	10,244	6	0.1
Manipur	1,023	1,008	15	1.5	771	770	0	0.0
Meghalaya	2,236	2,066	170	7.6	1,514	1,514	0	0.0
Mizoram	684	684	0	0	516	516	0	0.0
Nagaland	921	921	0	0	721	721	0	0.0
Tripura	1,691	1,691	0	0	1,527	1,527	0	0.0
All India	16,26,132	16,22,020	4,112	0.3	12,80,037	12,78,565	1,472	0.1

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.151
ANSWERED ON 03.02.2025

INSTALLATION OF FGDs SYSTEMS IN TPPs

151 SHRI RANDEEP SINGH SURJEWALA:

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

(a) whether it is a fact that NITI Aayog has recommended against the necessity of Flue Gas Desulphurization (FGD) systems in thermal power plants (TPPs), if so, Government's stand on the installation of FGDs;

(b) whether the installation of FGDs in thermal power plants has posed a potential additional cost burden on consumers of 55 paisa to one rupee per unit, given its high installation cost, if so, the details thereof; and

(c) the total pass of burden to consumers through additional cost per annum for installation of FGDs in all Government owned thermal power plants?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : All Thermal Power Plants (TPPs) are required to comply with the emission norms as notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC) and directions given by Central Pollution Control Board (CPCB) from time to time. MoEF&CC notification dated 07.12.2015, 31.03.2021, 05.09.2022 and 30.12.2024 have stipulated stack emission norms [including for Sulfur Di-oxide (SO2)] and timelines for compliance in respect of coal based TPPs, categorized as Category-A, B and C.

In order to meet the SO_2 emission norms and timelines notified by MoEF&CC, Flue Gas Desulphurization (FGD) systems are being installed in coal based TPPs. Total 537 Units [2,04,160 Mega Watt (MW)] have been identified for installation of FGDs in TPPs. Out of these, FGD installation has been completed in 49 Units (25,590 MW), contracts awarded / under implementation in 211 Units (91,880 MW), 180 Units (58,997 MW) are under various stages of tendering process and 97 Units (27,693 MW) are under pre-tendering process.

…….2

NITI Aayog, through CSIR-NEERI, Nagpur, has conducted a study titled as "Analysis of historical ambient air quality data across India for developing a decision support system". The aim of the study is to analyze the SO2 emission from coal-based Thermal Power Plants (TPPs) using continuous 'Ambient Air Quality Monitoring System (CAAQMS) data, Online Continuous Emission Monitoring System (OCEMS) data through the air pollutant emission dispersion modelling study using prognostic model to drive a decision support system. The recommendation of the study report is under the consideration of MoEF&CC.

The capital and operating costs of FGD systems vary from plant to plant, depending upon availability of space and size of Units. Standardization cannot be done as different sites have different requirements in terms of layout and orientation. Therefore, the cost of installation of FGD systems vary in the range of approximately Rs 0.85 Crore to Rs 1.2 Crore per MW.

Further, the impact on tariff varies from Unit to Unit based on technology implied in FGD System, Unit size, Unit availability, energy scheduled from Unit, cost of reagents used in FGD Systems such as limestone etc. Taking into account all of above and considering FGD capital cost as Rs 1.2 Cr / MW, the effective increase in tariff has been estimated as 55.72 Paise/kWh (first year) and 48.67 Paise/kWh (levelized).

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.152
ANSWERED ON 03.02.2025

'POWER FOR ALL' BY 2025

152 SHRI NARHARI AMIN:
SHRI MADAN RATHORE:
SHRI MAYANKBHAI JAYDEVBHAI NAYAK:
MS. KAVITA PATIDAR:
SHRI NARAYANA KORAGAPPA:
SHRI LAHAR SINGH SIROYA:

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

(a) the components of the ambitious target of Government in achieving round-the-clock "Power for All" by 2025;

(b) details of the breakdown of the planned power generation capacity addition, including the proportion of coal, hydro, and renewable energy; and

(c) in the effort to achieve 24x7 power, details of manner in which Government plans to ensure that power reaches remote and rural areas, including tribal and far-flung regions,where transmission infrastructure may be less developed?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (c) : There is adequate availability of power in the country. Present installed generation capacity of the country is 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.

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 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.

……2.

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.

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.

The works sanctioned under RDSS also include, projects amounting to 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.

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.

Further, the Government of India has taken following steps to ensure round the clock 24x7 power for all:

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 and 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.

……3.

(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. 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.

…….4.

(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

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.153
ANSWERED ON 03.02.2025

ELECTRICITY SUPPLY IN RURAL AREAS OF THE COUNTRY

153 # SHRI NARHARI AMIN:

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

(a) whether it is a fact that there is a provision of 24-hour electricity supply in rural and urban areas under the Electricity (Rights of Consumer) Rules, 2020;

(b) if so, the States in the country where 24-hour electricity supply is being provided in rural areas;

(c) the States where least electricity is getting supplied in its rural areas;

(d) the details thereof; and

(e) the details of electricity supply in urban and rural areas in the State of Gujarat?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) & (b) : As per Sub-Rule (1) of Rule (10) of the Electricity (Rights of Consumers) Rules, 2020, the distribution licensee shall supply 24x7 power to all consumers. However, the State Electricity Regulatory Commission may specify lower hours of supply for some categories of consumers like agriculture. The Rules are applicable across all states and for all areas including urban and rural areas. The state-wise average daily hours of power supply data for FY2023-24 in Urban and Rural areas is at **Annexure.**

The national average for rural supply was around 22 hrs in 2023-24 and in many states like Andhra Pradesh, Goa, Gujarat, Maharashtra, Odisha, Tamil Nadu, West Bengal etc., the average daily hours of power supply in rural areas was above 23 hrs.

(c) & (d) : In FY2023-24, the states of Nagaland, J&K, Uttar Pradesh and Haryana had average daily hours of power supply in rural areas below 20 hrs.

(e) : The average daily hours of power supply in urban and rural areas in the state of Gujarat for FY 2024 were 23.9 hrs and 23.7 hrs respectively.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 153 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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State/UT-wise average daily hours of power supply in rural and urban areas

State Name	2023-24 (Rural)	2023- 24 (Urban)
A&N Island	22.2	22.4
Andhra Pradesh	23.6	23.9
Arunachal Pradesh	20.1	22.1
Assam	22.5	23.8
Bihar	22.2	23.6
Chandigarh	*	23.8
Chhattisgarh	21.6	23.8
Delhi	*	24
Goa	23.8	23.9
Gujarat	**23.7**	**23.9**
Haryana	19.4	23.8
Himachal Pradesh	23	23.9
Jammu and Kashmir	19	21.7
Jharkhand	22.1	23.1
Karnataka	21.4	23.7
Kerala	22.4	24
Ladakh	22.2	23.3
Madhya Pradesh	22.6	23.8
Maharashtra	23.8	23.9
Manipur	22	23.9
Meghalaya	21.8	23.1
Mizoram	22.3	23.6
Nagaland	18	20
Odisha	23.4	23.7
Puducherry	22.7	23.7
Punjab	22.8	23.7
Rajasthan	21.7	23.9
Sikkim	21.5	22.6
Tamil Nadu	23.5	24
Telangana	21.9	24
Tripura	22.3	23.7
Uttar Pradesh	18.1	23.4
Uttarakhand	21.4	23.7
West Bengal	23.4	23.9
National Average	**21.9**	**23.4**

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.154
ANSWERED ON 03.02.2025

POWER GENERATION CAPACITY IN ODISHA

154 SHRI MANAS RANJAN MANGARAJ:

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

(a) the total power generation capacity of the State of Odisha, specifying the sources such as coal, gas, hydro, solar and wind energy; and

(b) the details of power generation growth in the State of Odisha over the last three years?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): The total power generation capacity in Odisha as on 31.12.2024 is 12,545.32 MW. The details of the source-wise power generation capacity in the State is given at **Annexure-I**.

(b): Details of source-wise Generation indicating the growth in power generation for the last three years and current year (Upto December, 2024) in the state of Odisha is given at **Annexure-II**.

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 154 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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The details of the source-wise power generation capacity in Odisha as on 31.12.2024:

(All figures are in MW)

Sl. No.	Ownership/Sector	Source-wise breakup								Grand Total
		Thermal					Renewable			
		Coal	Lignite	Gas	Diesel	Total	Hydro	RES	Nuclear	
1	STATE SECTOR	1,740.00	0.00	0.00	0.00	1,740.00	2,154.55	26.30	0.00	3,920.85
2	PVT SECTOR	3,260.00	0.00	0.00	0.00	3,260.00	0.00	754.47	0.00	4,014.47
3	CENTRAL SECTOR	4,600.00	0.00	0.00	0.00	4,600.00	0.00	10.00	0.00	4,610.00
Total		**9,600.00**	**0.00**	**0.00**	**0.00**	**9,600.00**	**2,154.55**	**790.77**	**0.00**	**12,545.32**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 154 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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Details of source-wise Generation indicating the growth in power generation for the last three years and current year (Upto December, 2024) in the state of Odisha:

All Generation figures are in Million Units

Fuel	2021-22		2022-23		2023-24		2024-25 (Upto Dec 2024)	
	Generation	% Growth compared to 2020-21	Generation	% Growth Compared to 2021-22	Generation	% Growth Compared to 2022-23	Generation	% Growth Compared to 2023-24 (Upto Dec 2023)
Hydro	5,230.63	-23.75	5,462.81	4.44	6,162.2	12.80	5,123.09	4.61
Thermal (Coal)	60,161.29	8.98	64,874.24	7.83	66,019.81	1.77	51,004.53	4.88
Conventional Total	**65,391.92**	5.36	**70,337.05**	7.56	**72,182.01**	2.62	**56,127.62**	4.86
Solar	603.71	26.76	706.24	16.98	757.69	7.29	570.94	4.04
Biomass	100.08	134.32	60.95	-39.10	96.07	57.62	49.43	-32.48
Small Hydro	377.32	5.16	424.92	12.62	407.97	-3.99	392.68	12.01
Renewable Total	**1,081.10**	23.16	**1,192.10**	10.27	**1261.72**	5.84	**1,013.05**	4.16
Grand Total	**66,473.02**	**5.61**	**71,529.15**	7.61	**73,443.73**	2.68	**57,140.67**	4.85

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GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.155
ANSWERED ON 03.02.2025

SAUBHAGYA SCHEME

155 SHRI SANJAY KUMAR JHA:

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

(a) whether Government has been able to successfully implement Saubhagya scheme on establishing village electricity, if so, the details thereof, State-wise;

(b) if not, the reasons therefor;

(c) the details of financial assistance provided by Government for Saubhagya scheme;

(d) whether Government has made an estimation of the number of people who are still without universal access to electricity in the country, if so, the details thereof, State-wise; and

(e) if not, the reasons therefor?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) to (e) : Government of India 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 sanctioned works have been successfully completed under SAUBHAGYA and scheme stands closed as on 31.03.2022.

As reported by the States, around 2.86 crore households have been electrified during the SAUBHAGYA period. State-wise details are enclosed as **Annexure-I**.

The financial assistance provided as Gross Budgetary Support by Government of India for SAUBHAGYA scheme is Rs **6330.32 Cr**.

Government of India is further supporting States for on-grid electrification of left-out households during SAUBHAGYA under the ongoing Revamped Distribution Sector Scheme (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 of households left-out during SAUBHAGYA, 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). The State wise details are enclosed as **Annexure-II**.

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-III**).

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ANNEXURE-I

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO. 155 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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

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

***Not funded under SAUBHAGYA Scheme**

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ANNEXURE-II

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO. 155 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

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Household Electrification sanctioned under RDSS

Sl. No.	Name of 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**

****

ANNEXURE-III

ANNEXURE REFERRED IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO. 155 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

****

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

S. No.	States	No. of 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**

****

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.156
ANSWERED ON 03.02.2025

BATTERY SWAPPING STATIONS NETWORK GUIDELINES

156 SHRI NARAYANA KORAGAPPA:

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

(a) whether there are any strategies in place for the Central Government to collaborate with State Governments to implement battery swapping guidelines and ensure that battery-swapping stations are strategically located across;

(b) if so, the details thereof; and

(c) the manner in which the Ministry envisions 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 Charging Station (BCS) and 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 BCS and BSS Infrastructure at the State level.

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

……2.

(c) : The guidelines emphasize the role of public-private partnerships (PPPs) in expanding the battery swapping infrastructure. Setting up BCS and 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 BCS/BSS have been suggested to be kept technology agnostic. State Governments have been advised to permit round-the-clock operations for BCS and BSS.

Copy of Guidelines is at Annexure A.

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ANNEXURE

ANNEXURE REFERRED IN REPLY TO PART (c) OF UNSTARRED QUESTION NO.156 ANSWERED IN THE RAJYA SABHA ON 03.02.2025

****

No.12/2/2018-EV
Government of India
Ministry of Power

2nd Floor, 'F' Wing, Nirman Bhawan,
New Delhi, the 10th January, 2025

To,

1. The Secretaries of all Ministries/Departments of Government of India
2. The Chief Secretaries of the States/UT's

Subject: Guidelines for Installation and Operation of Battery Swapping and Charging Stations — reg.

Sir/Madam,

Ministry of Power has issued the Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024. These guidelines are aimed at meeting the requirements of Electric vehicles (EV)with integrated batteries. The alternative method of powering electric vehicles is through swappable batteries which can be charged separately at dedicated battery charging stations. Battery swapping is a method of quickly replacing an EV's fully or partially discharged battery with a charged one. The following guidelines govern such battery charging systems:

1. **Short Title** These guidelines shall be called "Guidelines for Installation and Operation of Battery Swapping and Battery Charging Stations".

2. **Applicability.** These guidelines shall be applicable to swappable battery providers, and owners and operators of battery charging stations and battery swapping stations located anywhere.

3. **Objectives:** Main objectives of these guidelines are as follows:

i) To promote swapping of batteries as an alternate method of powering EVs.

ii) To promote battery as a service.

iii) To develop a battery swapping ecosystem.

4. **Definitions**:

1. **Battery as a Service (BaaS)** means a business model where manufacturer of battery swapping equipment or a third-party provider owns and manages swappable electric vehicle (EV) batteries, leasing or renting them to EV owners or fleet operators.

2. **Battery-swapping** means a method of quickly replacing an EV's fully or partially discharged swappable battery with a charged battery.

3. **Battery swapping ecosystem** means a network of infrastructure and services that enables quick and efficient exchange of swappable EV batteries.

4. **Battery Charging Station (BCS)** means a facility where fully or partially discharged swappable EV batteries are electrically recharged.

Note: Captive BCS are charging stations that are exclusively accessible to a specific group of users such as fleet operators, EV owners associated with a particular organization, community or building, and are not open to the public.

5. **Battery Swapping Station (BSS)** means a facility where fully or partially discharged swappable batteries are electrically charged and quickly replaced with recharged batteries.

Note. Captive BSS are swapping stations that are exclusively accessible to a specific group of users such as fleet operators, EV owners associated with a particular organization, community or building, and are not open to the public.

6. **Battery to grid(B2G)**refers to a system where swappable batteries, typically from electric vehicles (EVs)or Battery Swapping Station(BSS), can not only store energy for use but also supply electricity back to the power grid when needed.

7. **Battery Provider** refers to any entity which provides swappable EV batteries or BaaS to EV owners.

8. **Swappable battery** means a modular battery designed for use in EVs that can be quickly and easily detached and replaced with another battery, to extend the vehicle range and allow for efficient recharge of the depleted battery.

Note: In case of any conflict, definitions in respective Acts, Rules & Regulation and guidelines as amended from time to time shall prevail.

5. Clauses 5, 6 (except sub-clause 1), 7, 9, 11, sub-clause 5 of clause12, 13 (except sub-clause 2) and20 of the principal guidelines titled "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure — 2024", shall also be applicable for Battery Charging Stations, Battery Swapping Stations and Battery Providers.

6. Extant provisions relating to safety shall be applicable to BSSs and BCSs.

7. Owners of BCS or BSS shall be permitted to use an existing electricity connection with or without seeking an increase in the connected load, for charging the swappable batteries.

8. Battery swapping or Battery charging stations may deploy liquid-cooled swappable batteries for larger vehicles such as trucks and buses.

Sd/-

(Under Secretary to GoI)

Copy to:-

As per list of Addressee

No. 12/2/2018-EV (Comp No. 241852)
Government of India
Ministry of Power

2nd Floor, 'F' Wing, Nirman Bhawan,
New Delhi, the 10th January, 2025

To

1. The Secretaries of all Ministries/Departments of Government of India
2. The Chief Secretaries of the States/UTs

Subject: Amendment in Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024 – reg.

Sir/Madam,

Ministry of Power has issued Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024 on 17th September, 2024. To provide an alternate facility for powering the Electric Vehicles, separate guidelines on Installation and Operation of Battery Swapping and Charging Stations have been issued. To bring further clarity, Ministry of Power hereby issues the following amendment to the Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024:

Sub-clause (g) of Clause 4 shall be replaced as below:

g) **Electric Vehicle Charging Infrastructure (EVCI)** is a network of Electric Vehicle charging stations catering to diverse EV charging requirement and includes components such as EVSE, connection to DISCOM's supply system including electricity meter, Power Management System for energy optimization, energy distribution, grid stability and renewables integration, Communication network to assist data exchange in real time and remotely manage EV charging stations, cables, connectors, RFID tags, software applications, circuit breakers, solar panels (if connected), civil work, smart meter, transformer, etc.

Sub-clause (h) of Clause 4 shall be replaced as below:

h) **Electric Vehicle Charging Station**: An Electric Vehicle Charging Station is a facility for charging Electric Vehicles or swappable EV batteries, with or without supporting upstream infrastructure or amenities.

Following clause shall be inserted after sub-clause (3) of Clause 6:

(4) State Governments may ensure necessary permissions to Electric Vehicle Charging Stations to operate round the clock.

Following sub-clause shall be inserted after sub-clause (b) of Clause 7:

7(c) Government and Public entities should ensure that terms and conditions of bidding carried out for allotment of public land for setting up of EV charging stations are technology agnostic and allow wider participation.

Sub-Clause 2 of Clause 20 shall be replaced as below:

(2) **State Nodal Agencies:** Each state will designate a State Nodal Agency (SNA) responsible for coordinating with DISCOMs and State Electricity Regulatory Commissions (SERC) to facilitate electricity connections for public, community, workplace, and e-bus depot charging stations. State governments have the flexibility to choose their Nodal Agency. The state DISCOMs will be the default option. However, states can also designate State Public Sector Undertakings (SPSU), Urban local bodies (ULBs) or Urban Development Authorities. A state level steering committee chaired by Secretary in-charge of Energy and comprising secretaries of Transport, Municipal Administration and Urban Development, such other members as required shall be constituted to plan and monitor the implementation of EV Charging Infrastructure at the state level.

Yours faithfully,

Sd/-
(Saket Kumar Sinha)
Under Secretary to the Government of India

No. 12/2/2018-EV (Comp No. 241852)
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, the 17th September, 2024

To,

1. The Secretaries of all Ministries/Departments of Government of India
2. The Chief Secretaries of the States/UTs

Subject: Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024 – reg.

Sir/Madam,

Ministry of Power issued "Charging Infrastructure for Electric Vehicles – Guidelines and Standards" in 2018 which were amended from time to time. After careful consideration and suggestions received from various stakeholders, it has been decided that there is a need to bring greater clarity with regards to the applicability of these guidelines to public, semi-public and private charging stations, Power Utilities, Central & State agencies. Accordingly, revised consolidated guidelines titled "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024",as mentioned in the subsequent para of these guidelines, are hereby issued.

These guidelines shall supersede all the previous versions issued by Ministry of Power and shall be effective from date of its issuance.

1. Short Title: These guidelines shall be called "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024".

2. Applicability: These guidelines shall be applicable to

(i) Manufacturers, Owners and Operators of EV Charging Infrastructure located
   - **a)** In private parking spaces,
   - **b)** In semi restricted places like office buildings, educational institutions, hospitals, Group Housing Societies, e-bus depots and
   - **c)** In public places like commercial complexes, railway stations, petrol pumps, airports, metro stations, shopping arcades, municipal parking and
   - **d)** On highways&expressways.

(ii) Power utilities and Central and State agencies.

3. Objectives:

- **a)** To drive EV adoption by making charging stationssafe, reliable and accessible.
- **b)** To develop a robust charging network across theNation initially prioritising the essential locations.
- **c)** To increase the viability of charging stations by facilitating public land at promotional rates, expeditious approval of electricity connections and standardising pricing of power supply.
- **d)** To encourage charging of EVs during solar hours.
- **e)** To prepare the electricity grid to handle the increased demand from EV charging.

4. Definitions:

a) **Captive Charging Station (CCS)** means an exclusive facility for charging of EVs owned or controlled by the owner of charging station or governed by him under a business agreement. Example: Government Departments, Corporate entities, Bus Depots, fleet owners etc.

b) **Central Nodal Agency (CNA)** means a Central Agency for the rollout of Public EV Charging Infrastructure across the country.

c) **Charge Point Operator (CPO)** means any individual/entity operating the EV Charging Station.

d) **Charger Management System (CMS)** means a system used by fleet operators, charge point operators, and others, to monitor and optimize electric vehicle charging operations.

e) **Community Charging Station** means semi-public charging station installed at Group Housing Societies or other residential accommodations where only residents or authorized visitors can get their EV charged.

f) **Electric Vehicle** means any vehicle propelled, partly or wholly, by an electric motor drawing current from a rechargeable storage battery, or other portable energy storage devices or other self-generating electric source, as defined by Central Electricity Authority (CEA) in Measures relating to Safety and Electric Supply" regulations 2023, as amended from time to time.

g) **Electric Vehicle Charging Infrastructure (EVCI)** is a network of charging stations catering to diverse EV charging requirement and includes components such as EVSE, connection to DISCOM's supply system including electricity meter, Power Management System for energy optimization, energy distribution, grid stability and renewables integration, Communication network to assist data exchange in real time and remotely manage EV charging stations, cables, connectors, RFID tags, software applications, circuit breakers, solar panels (if connected), civil work, smart meter, transformer, etc.

h) **Electric Vehicle Charging Station:** Premises having any one or more EVSEs or combination thereof, with or without supporting upstream infrastructureoramenitiesas specified in subsequent sections of these guidelines.

i) **Electric Vehicle Supply Equipment (EVSE)** means an element in Electric Vehicle Charging Infrastructure (EVCI) that supplies electric energy for recharging the battery of electric vehicles as defined by Central Electricity Authority (CEA) in Measures relating to Safety and Electric Supply" regulations 2023, as amended from time to time.

j) **Group Housing Society (GHS)** means a building unit constructed or to be constructed with one or more floors having more than two dwelling units having common service facilities where land is owned jointly (as in the case of co-operative societies or the public agencies, such as local authorities or housing boards, etc.) and the construction is undertaken by one Agency, as defined in Model Building Bye-Laws 2016, as amended from time to time.

k) **Network Service Provider (NSP)** with respect to any electronic record is an intermediary which receives, stores or transmits or provides any service with respect to that record. This includes telecom service providers, internet service providers, web-hosting service providers, search engines, online payment sites, online-auction sites, online-market places and cyber cafes.

l) **Open Access** means non-discriminatory provision for use of transmission lines or distribution system or associated facilities with such lines or systems by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission.

m) **Open Automated Demand Response (Open ADR)** is an open, highly secure, and two-way information exchange model and Smart Grid standard to standardize, automate, and simplify Demand Response (DR) and Distributed Energy Resources (DER) to enable utilities and aggregators to cost-effectively manage growing energy demand & decentralized energy production, and customers to control their energy future.

n) **Open Charge Point Interface (OCPI)** means a communication protocol that supports information exchange between multiple network service providers (NSPs) and charge point operators to enable automated roaming between public charging networks for the ease of EV charging.

o) **Open Charge Point Protocol (OCPP)** means an open protocol used for communication between EVSE and the Charger Management system.

p) **Public Charging Station (PCS)** means EV charging station where any electric vehicle can get its battery recharged, without access restriction.

q) **Resident Welfare Association(RWA)**means an association comprising all the property owners within a Co-operative Group Housing Society, Multi storied Building, Residential Colony, or a similar body registered with the State Government, as defined in Electricity (Rights of Consumers) Rules, 2020as amended from time to time.

r) **Smart Charging** is a way to optimize the charging process according to distribution grid constraints, utilization of renewable energy sources and customer preference. This helps reducing transformer overloading requirement for enhancing capability of grid, mitigating voltage fluctuation in grids having high penetration of renewable energy sources. Smart charging includes bi-directional vehicle to grid integration.

s) **State Nodal Agency (SNA)** means an agency designated by State Government for rollout of Public EV Charging Infrastructure in the state.

t) **Unified Energy Interface (UEI)** is a standard and interoperable network based on open source Beckn Protocol, which facilitates interoperability among charging networks, flexible demand response, grid services and cloud storage.

u) **Vehicle to Grid (V2G)** means a set of technologies which facilitates drawing unused electrical energy from electric vehicles into the grid. V2G can supply electricity to the grid during peak hours. V2G can enable electric vehicles toact as extra power source when weather-dependent renewable energy sources are not available.

Note: In case of any conflict, definitions in respective Acts, Rules & Regulation as amended from time to time shall prevail.

5. General Requirements

(1) Setting up and operation of EV Charging Stations is a de-licensed activity and any entity is free to establish EV Charging Infrastructure by adhering to these guidelines.

(2) Charge Point Operators may apply for an electricity connection for their EV charging stations. The Distribution Licensee must provide the required connection according to the following timelines specified under Electricity (Rights of Consumers) Rules, 2020 as amended from time to time:

Sl. No.	Area Type	Maximum time period within which distribution licensee shall provide new connection
1.	Metropolitan Area	3 days
2.	Other Municipal Area	7 days
3.	Rural Area	15 days
4.	Rural Area having hilly terrain	30 days

5.	If extension of distribution mains, or commissioning of new substations is required	90 days

In case of delay in supplying electricity within the period specified by the appropriate Commission, distribution licensee shall be liable for a penalty as may be determined by the Commission as per Electricity (Rights of Consumers) Rules, 2020 as amended from time to time.

To expedite the process, Distribution Licensees must establish a customer-friendly online single window clearance system, following the Standard Operating Procedure and application form outlined in **ANNEXURE - III.**

(3) Appropriate Electricity Regulatory Commission must pre-specify connection charges up to 150 kW as perrule 4 (13) of Electricity (Rights of Consumers) Rules, 2020 as amended from time to time.Distribution Licensee must provide Low Tension (LT) connection up to 150 kW for charging stations provided, application for a separate LT electricity connection is made for EV charging station.

(4) State Nodal Agencies and Municipal Commissioners will conduct a yearly assessment of potential EV charging demand across their geographical area to ensure strategic placement of EV Charging Stations. State Nodal Agency (SNA) shall publish this data for benefit of Charge Point Operator.

(5) The Ministry of Housing and Urban Affairs (MoHUA) has amended relevant sections of the Model Building Bye-laws (2016) and the Urban and Regional Development Plans Formulation and Implementation Guidelines (URDPFI — 2014) to support the growth of electric mobility. These amendments take into account evolving charging technologies, EVs with different charging needs and have a 20-year vision. Local Development Authorities are encouraged to adopt these revisions and ensure adequate space is allocated for establishing EV charging stations in new buildings and urban development plans.

(6) Charging Station owner may adopt newer technologies for charging of EVs such as induction charging, pantograph etc. compliant with safety and connectivity requirements stipulated by CEA and BIS from time to time.

(7) Charging stations may also integrate solar energy for their stations.

6. Safety, Functionality and User Experience

(1) All Electric Vehicle Supply Equipment shall comply with BIS standards indicated at **ANNEXURE – I**.

(2) Safety & Connectivity of Electric Vehicle Supply Equipment requirements shall be as specified in CEA "Measures relating to Safety and Electric Supply" Regulations 2023 as amended from time to time andCEA "Technical Standards for Connectivity of the Distributed Generation Resources" Regulation (2013) as amended from time to time.

(3) Functionality and User Experience requirements specified in **ANNEXURE – II** of these guidelines.

7. Provision of public land at promotional rates for Public Charging Stations

Initially, Public Charging Stations (PCS) may experience low usage due to the gradual increase in electric vehicles on the road. The combination of high land rent and uncertain future revenue streams can make setting up PCS financially unattractive. Therefore, the following provisions are made to lower the land cost.

a. Government/Public entities shall offer land for installation of PCS at a subsidized rate to Government/Public entity. This will be a revenue-sharing model where the land-owning agency receives ₹1 per kWh of electricity used for charging at the station, to be paid quarterly. The revenue sharing agreement may be initially entered by parties

for a period of 10 years. A model revenue sharing agreement is placed at **ANNEXURE - IV**.

b. The Revenue Sharing Model may also be adopted by the public Land-owning agency for providing the land to a private entity for installation of Public Charging Stations on bidding basis with floor price of ₹1 per kWh.

8. Charging Fee

The total fee charged by Charge Point Operators from customers shall comprise the following components: -

a. Electricity supply tariff which will be considered as pass through (₹ per kWh).
b. Service charge as per Clause 10.0 of these guidelines (₹ per kWh).
c. Land cost which will be pass through as per registered land deed (₹ per kWh).
d. GST as applicable (₹).

9. Tariff for supply of electricity to EV charging stations

(1) The tariff for supply of electricity to EV Charging Stations shall be single part and shall not exceed "Average Cost of Supply" till 31st March 2028.

(2) The Distribution Licensee will charge 0.7 times the Average Cost of Supply (ACoS) during solar hours (9:00 AM to 4:00 PM) and 1.3 times ACoS during non-solar hours (remaining hours of the day).

(3) Each EV charging station must have separate metering arrangements to accurately record consumption and apply the appropriate tariff.

(4) Distribution Licensee may provide sub metering for EV charger, behind-the-meter of an existing HT connection.

10. Service charges for EV Charging Stations

(1) The following ceiling limit for service charges (excluding GST & land cost) shall be applicable till 31st March, 2028for conductive AC/DC charging at PCS & Community EV Charging Stations setup on either public or private land. :-

S.No.	Charging Type	During Solar Hours (9:00 A.M. - 4:00 P.M.)	During Non-Solar Hours (4:00 P.M. - 9:00 A.M.)
1.	AC (Slow)	₹3.00 per unit	₹4.00 per unit
2.	DC (Fast)	₹11.00 per unit	₹13.00 per unit

***Note:** These ceiling limit are subject to annual review.

(2) Central and State governments may offer subsidies for setting up public charging stations.

(3) **Transparent Pricing:** EV Charging Stations will prominently display:
   a. Charging rates per unit.
   b. Applicable service charges.

(4) A committee under the Central Electricity Authority (CEA) will recommend service charges from time to time.

11. Charging Station Network

To ensure widespread availability, the following guidelines for Public Charging Station placement may be adopted.

(1) **Density**:

a. Urban Areas: By FY 2030, there will be at least one charging station within a 1 km x 1 km grid in urban areas as notified by respective state governments.

b. Highways: Charging Stations will be located every 20 km on both sides of highways, expressways, and major roads.

c. **Long-Range & Heavy-Duty EVs**: For long-range EVs and heavy-duty vehicles like buses and trucks, a fast-charging station (as per specifications in Clause 12 (7) of these guidelines will be located every 100 km on each side of the designated expressways, highways andmajor roads. Ideally, these stations will be situated within or near existing public charging stations. Cities/Urban Development Authorities/States may locate these facilities in urban regions within areas such as transport hubs or bus depots.

(2) **Flexibility**: Additional charging stations, both standard and fast-charging, can be installed beyond the minimum requirements.

(3) **Infrastructure Planning**: State and UT governments will utilize these density/distance guidelines to:
   a. Secure land for public charging stations.
   b. Prioritize installation of supporting infrastructure like transformers and feeders for electricity distribution.
   c. Implement these measures even in cases without central or state subsidies.

(4) **Partnerships**: The government may prioritize existing fuel retail outlets operated by Oil Marketing Companies (OMCs) for installing public EV charging stations (meeting safety and connectivity standards as in **ANNEXURE – I** and **ANNEXURE - II**) to achieve the desired network coverage.
   a. OMCs with charging facilities should prominently advertise this on their signage to inform EV owners.
   b. Directional signs on nearby roads leading to charging stations will further enhance accessibility.

(5) **Additional Locations**: EV Charging stations can also be installed at:
   a. Group Housing Societies including Residential Societies
   b. Shopping malls
   c. Office complexes
   d. Restaurants and Hotels
   e. Educational institutions
   f. Hospitals

These charging stations should allow charging for visitor vehicles and be strategically located near entrances, exits, or well-lit elevator areas for optimal accessibility.

12. Public Charging Stations – General Requirements

(1) **EV Charger Specifications**: EV Chargers shall be as per the Indian Standards mentioned at **ANNEXURE – I**. For small size EVs such as two wheelers, three wheelers, quadri-cycles, four wheelers etc. Charge Point Operators will preferably provide a minimum 7.4 kW AC or DC EV chargers.

(2) **User Convenience**:

(i) **Online Booking (Optional):**Public Charging Stations may partner with network service providers for convenient selection of EV chargers and remote booking of charging slots.

(ii) **Real-Time Information:** Public Charging Stations will display user-friendly information including:
   a. Location
   b. EV Charger types (AC/DC, kW capacity)
   c. Number of available EV chargers
   d. Charging rates
   e. Any additional fees
   f. Information specified by the Central Nodal Agency (CNA)

(3) **Communication Protocols**: Open Standards are recommended. PublicCharge Point Operators (CPOs) may adopt open communication protocols like UEI, OCPP, OCPI or open ADR for efficient communication with DISCOMs regarding demand response.The protocols must be compliant to extant provisions of cyber security.

(4) **Payment Options**: Flexible Payment Methods must be offered. Public Charging Stations will offer (prepaid/postpaid) payment options, potentially with time-based rates and discounts during solar hours.

(5) **Electricity Connections**:

(i) **Distribution Licensee Connection**: Owner of Public Charging Stations can apply for electricity connections with their Distribution Licensee following the process outlined in **ANNEXURE – III** of these guidelines.

(ii) **Open Access Option**: Owner of the Public Charging Station can also choose to obtain electricity through open access within 15 days of submission of a complete application. This option involves paying a surcharge (not exceeding 20% of the tariff applicable to the category of the consumers seeking open access as per Tariff Policy 2016), transmission charges and wheeling charges. No additional fee will be applied beyond these.

(iii) Owner of Public Charging Station may explore potential integration of renewable energy sources (example solar) in their charging stations.

(6) **Station Amenities (Optional)**:Larger Public EV Charging stations i.e. stations with more than 10 EV chargers for four-wheeled vehicles may offer additional amenities like washrooms, drinking water, and covered waiting areas for customers. They may also be equipped with surveillance cameras with at least one month storage.

(7) **Fast Charging for Long-Range and Heavy-Duty EVs**: Public Charging Stations equipped for fast charging long-range EVs and heavy-duty vehicles (like trucks and buses) must meet the following specifications:

(i) **High-Power EV Chargers:** At least two EV chargers with a minimum capacity of 240 kW each, complying with Power Levels 3 or 4 as defined in **ANNEXURE –I**.

(ii) **Liquid Cooled Cables (Optional):** Public Charging Stations may also choose to provide Liquid Cooled Cables for high-speed charging of vehicles with compatible fluid-cooled batteries (a feature found in some long-range EVs).

13. Information about the database of Public Charging Stations:

(1) The Bureau of Energy Efficiency (BEE) has created National online database of all public charging stations across India. This will help EV owners to easily locate nearby Public charging stations.

(2)Public Charge Point Operators (CPOs) are advised to adopt open communication standards/protocols for data sharing like Unified Energy Interface (UEI), Open Charge Point Protocol (OCPP), Open Charge Point Interface (OCPI) & Open Automated Demand Response (open ADR).

(i) Centralized Platform:

a. **National Database:** BEE, in collaboration with State Nodal Agencies (SNAs), will maintain a data base of public charging stations nationwide.

b. **Open APIs for third party developers:** BEE will provide open APIs to third party developer for integrating value added services to the National database. Open APIs shall be restricted to non-confidential information.

c. **Standardized Information:** A common data format using minimal fields will ensure consistent information across all EV charging stations.

(ii) Simple Registration: Public Charge Point Operators will register their EV charging stations on the National database using minimal fields.

(iii) Energy Data Sharing: Public Charge Point Operators will share annual data on energy sold per EV charger on National database.

(3) Bureau of Energy Efficiency will provide awareness using the EV Yatra Portal.

14. Charging at Office/Commercial buildings

(1) **New Connection:** Building/Office owner can request for a separate metered connection from Distribution Licensee with a dedicated EV charging tariff. This will be installed within the timelines specified in Electricity (Rights of Consumers) Rules, 2020 as amended from time to time.

(2) **Existing Connections**: Building/Office owner may use their existing electricity connections to charge employee EVs at the workplace.

(3) **Increased Load**: If necessary, Building/Office owner can apply to their electricity distribution licensee for a higher power load to accommodate EV charging stations.

(4) **EV Charger Selection**: In consultation with the distribution licensee, commercial building owners can choose the types and number of workplace EV chargers to install based on employee needs.

15. Charging at Residence

(1) **New Connection:** Owners can request for a separate metered connection from Distribution Licensee with a dedicated EV charging tariff. This shall be granted within the timelines specified in Electricity (Rights of Consumers) Rules, 2020 as amended from time to time.

(2) **Existing Connection:** Owners can use their existing electricity connection to charge their EVs at home.

(3) **Increased Load:** If EV charging station requires more power than the current sanctioned load, the owner will apply to the distribution licensee for seeking increase in the sanction load.

(4) **Charging Rates:** Domestic electricity rates will apply to charging EVs at home.

16. Community Charging for Residents

(1) **New Connection:** Resident Welfare Association, Group Housing Society, an owner of a flat, house in an Association, any other consumer within a GHS, can request for a separate metered connection from Distribution Licensee with a dedicated EV charging tariff. This will be installed within the timelines specified in Electricity (Rights of Consumers) Rules, 2020 as amended from time to time.

(2) **Group Housing Societies (GHS)**: In consultation with the distribution licensee, Residential Welfare Associations (Society) can establish EV charging stations within their premises.

(3) **Choice of EV Chargers**: Residents can decide on the types and number of community EV chargers to be installed.

(4) **Visitor Charging**: Community stations can be equipped to allow charging for authorized visitor vehicles.

(5) **Private Charging Points**: Residents can install private EV charging stations in their designated parking spaces. The Distribution Licensee will ensure electricity supply through the resident's existing meter or a separate sub-meter depending on consumer’s choice.

(6) **Increased Load:** If community EV charging stations requires more power than the current sanctioned load, then GHS will apply to the distribution licensee for seeking increase in the sanctioned load.

(7) **Community Charging Rates**: GHS will determine the charging fees for community charging based on the applicable electricity tariff and service ceiling limits laid down under these guidelines.

17. Charging Stations for E-Buses

Electricity Connections:

(1) **Distribution Licensee Connection**: Bus depot operators can apply for electricity connections with their Distribution Licensee, following the process outlined in **ANNEXURE - III** of these guidelines.
(2) **Open Access Option**: E-Bus depots can also choose to obtain electricity through open access within 15 days of submitting a complete application. This option involves paying a surcharge (not exceeding 20% of the tariff applicable to the category of the consumers seeking open access as per Tariff Policy 2016), transmission charges, and wheeling charges. No additional fees will be applied beyond these.
(3) State Transport Undertakings may explore potential integration of renewable energy sources (example solar) in bus depots.

Charging Station Equipment for E-Buses:

(4) **High-PowerEV Chargers**: E-Bus depots must install EVchargers with a minimum capacity of 240 kW, complying with Power Level 3 or 4 as defined in **ANNEXURE - I.**
(5) **Liquid Cooled Cables (Optional)**: For depots with e-buses equipped with liquid-cooled batteries (common in some long-range models), appropriate cables for high-speed charging of such batteries can be installed at theEV charging stations, if needed.

18. Implementation of Vehicle to Grid

(1) EV fleets act as vast electricity storages, flexible loads and decentralised energy resources capable of providing flexibility to support power system operations.V2G may be enabled as per the requirements of respective Distribution Licensee.
(2) Tariff for electricity under V2G operation will be as determined by the appropriate Electricity Regulatory Commission.
(3) Public Charge Point Operators may maximise amount of smart charging instead of uncontrolled/unmanaged charging in consultation with aggregators/distribution licensee.
(4) Public Charge Point Operators may complimentEVcharging stations with storages and facilitate bi-directional flow of electricity between grid and electric vehicles.
(5) Vehicle and EVSE OEMs may explore capabilities of V2G enabled electric vehicles and EV chargers to allowgrid services while protecting the vehicle batteries against overcharging and discharging.

19. Charging station as Solar Carport

Solar carport is a dual purpose, stand-alone structure that provides shelter for vehicles, whilst generating clean, renewable energy from the sun for use on-site including electric vehicle charging. Solar carports can be installed independently or integrated with grid. Solar carport with Battery Storage can be charged with solar energy and store energy onsite. This stored energy can subsequently be utilized to charge electric vehicles, providing an independent and sustainable alternative to traditional grid-dependent charging.

20. Implementation Mechanism

(1) **Central Nodal Agency**: The Bureau of Energy Efficiency (BEE) will act as the Central Nodal Authority to monitor the implementation of these guidelines. All relevant agencies, including electricity distribution companies (DISCOMs), the Central Electricity Authority (CEA), and state government agencies, will be expected to cooperate and provide necessary support to the BEE.

(2) **State Nodal Agencies**: Each state will designate a State Nodal Agency (SNA) responsible for coordinating with DISCOMs to facilitate electricity connections for public, community, workplace, and e-bus depot charging stations.State governments have the flexibility to choose their Nodal Agency. The state DISCOMs will be the default option.However, states can also designateState Public Sector Undertakings (SPSU),Urban local bodies (ULBs) or Urban Development Authorities. A state level steering committee chaired by Secretary in-charge of Energy and comprising secretaries of Transport, Municipal Administration and Urban Development, such other members as required shall be constituted to plan and monitor the implementation of EV Charging Infrastructure at the state level.

(3) **Progress Review- Steering Committee**:A central steering committee chaired by the Additional Secretary of the Ministry of Power including members from relevant ministries, representative from states,BEE and CEAwill review the implementation of these guidelines**.**

Sd/-
(Under Secretary to GoI)

Copy to

As per list of addressee

****

ANNEXURE - I

Indian Standards for EV Chargers notified by BIS:

Power Level	Type of EV Charger	EV Charger Capacity	Charging Device / Protocol	EV – EVSE Communication	Charge Point Plug / Socket	Vehicle Inlet / Connector
Power Level 1	Light EV AC Charge Point (for 2W, 3W and 4W – M1 Category)	Up to 7 kW	IS-17017-22-1	Bluetooth Low Energy	IS-60309	IS-17017-2-7, IS-17017-2-2
	Light EV DC Charge Point (for 2W, 3W Category)	Up to 12 kW	IS-17017-25 [CAN]		IS-17017-2-6	IS-17017-2-6
	Light EV AC/DC Combo (for 2W, 3W)	Up to 7 kW (AC) or up to 12 kW (DC)	IS-17017-31		IS-17017-2-7	IS-17017-2-7
Power Level 2	Parkbay AC Charge Point (for 3W and 4W – M1 Category)	Normal Power ~11kW/ 22 kW	IS-17017-1	IS-15118 [PLC]	IS-17017-2-2	IS-17017-2-2
Power Level 3	DC Charging Protocol (for 4W (M1 Category), Buses and Trucks (M3 Category))	DC 50 kW to 250 kW	IS-17017-23	IS-17017-24 [CAN] IS-15118 [PLC]	IS-17017-2-3	IS-17017-2-3
Power Level 4	DC High Power for e-Bus and Trucks Charging Station (M3 Category)	DC High Power (250 kW --> 500 kW)	IS-17017-23	IS-17017-24 [CAN] IS-15118 [PLC]	IS-17017-2-3	IS-17017-2-3

Note: For the purpose of these guidelines, terminologies "Electric Vehicle Supply Equipment (EVSE)" and "EV Charger(s)" have been used inter-changeably.

ANNEXURE- II

Checklist – A (Safety Requirements)

- ☑ **Reliable Wiring**: Appropriate cabling and electrical work to ensure safety.
- ☑ **Surge Protection**: Type-1 and Type-2 protection (as per Indian Standard Code IS / IEC 62305-4/IEC 61643-12 © IEC: 2008 (Edition 2.0 2008-11) to safeguard against electrical surges implemented.
- ☑ **Fire Safety**: Adequate fire protection equipment and facilities installed as per relevant Indian Standards.
- ☑ **Weather Protection**: As per Clause 12.4 of BIS 17017 (Part 1) 2018.
- ☑ **Compliances – NationalRegulations**: All electrical equipment installed in EVcharging station complies with Central Electricity Authority regulations, specifically the Technical Standards for Connectivity of Distributed Generation Resources (2013) and Safety and Electric Supply Measures (2023), as amended from time to time.
- ☑ **Compliances - Equipment Testing**: Each EVSE model with different power ratings and communication protocols type tested by the Original Equipment Manufacturer in accordance with BIS standards specified in **ANNEXURE - I** in atesting agency accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL), with a valid Type Test certificate.

Checklist – B (Functionality and User Experience)

- ☑ **Station Design:** The EV charging station is well-lit and has appropriate infrastructure to meet local regulations.
- ☑ **Vehicle Manoeuvring:** Adequate space for charging vehicles and easy entry/exit provided.
- ☑ **EV Charger Options:** Stations with one or more EV chargers, compliant with standards specified in **ANNEXURE - I**.
- ☑ **Clear Instructions:** Public and semi-public EV charging stations display visual aids/pictorial narration in English/Hindi and Local Language to guide users through the charging process.
- ☑ **EV Charger Information:** Specifications of the available EV chargers displayed on EVSE for user reference in Public charging stations.
- ☑ **Trained Staff:** EV Charging stations with more than four EV chargers manned with trained personnel on hand for safe operation. (optional)
- ☑ **Dedicated Parking:** Clearly marked and unobstructed parking spaces reserved for EV charging at charging stations.
- ☑ **Digital Convenience:** Arrangements for usage tracking, automatic billing, and convenient payment options made.
- ☑ **User Security:** Customer care number of the CPO (Charge Point Operator), National Emergency Number (112), and Women's Helpline Number (1091) prominently displayed in Public charging stations.
- ☑ **Security Cameras:** Stations equipped with CCTV cameras with a month’s worth of data storage. (optional)
- ☑ **Minimum Parking Space:** Offices, commercial buildings, resident welfare associations to set aside a minimum share of total common vehicle/parking capacity as specified in the building bye-laws of the state.

ANNEXURE – III

Standard Operating Procedure (SOP) for Single Window System and Standard Application Form:

S.No.	Action	Responsible Entity	Timeline
1.	Develop Online Portal for receiving application & granting ofelectricity connection to Charge Point Operators (CPOs) & integrate it with SNA/CNA portal for monitoring.	DISCOM/SNA/ CNA	As per Electricity (Rights of Consumers) Rules, 2020as amended from time to time.
2.	Fill & submit online application form seeking connection from DISCOM. Online forms maybe based on **ANNEXURE – III (A)** & **ANNEXURE III - (B)** of these guidelines.	CPOs	-
3.	Scrutinize and inform discrepancies in applications, if any, and provide details of concerned DISCOM official to the CPO.	DISCOM	3 days
4.	Re-submission of complete application addressing discrepancies pointed out by DISCOM.	CPOs	3 days
5.	Conduct technical feasibility assessment of location and issuance of demand note for release of electricity connection	DISCOM	As per Electricity (Rights of Consumers) Rules, 2020 as amended from time to time/ State ERC
6.	Electrical Inspectorate Safety clearance and other compliances to be shared by applicant before energization of connection and CPO to install EV charger and required electrical infrastructure.	CPO	-

ANNEXURE - III (A)

Application form (proposed)

S. No.	Particulars	Response
1.	Name of Applicant / Organization	
2.	Company registered under (Indian Companies Act / Individual / Co-operative Society / Any Other Corporate Entity) Company Registration Certificate / Memorandum of Understanding to be submitted as proof)	
3.	Company registration number	
4.	Registered Address	
5.	Present activity/business carried by the applicant/ organization	
Details of Authorised person		
6.	Name	
7.	Designation	
8.	Mobile Number	
9.	Email ID	
10.	ID number of any Government ID proof	
Location details of proposed site		
11.	Type of Location (Retail Outlets / Public / Semi-public (Restricted)	
12.	Address of location along with Area Pin Code	
13.	City	
14.	District	
15.	Geo-graphical co-ordinates of Location (Latitude and Longitude)	
16.	Details of Network Service Provider	
17.	Existing load (kW / kVA), if any	
18.	Desired Load (kW / kVA)	
19.	Supply type (LT / HT)	
20.	Tariff category	
EV Charger details		
21.	Type of EV Charger (CCS / Type 2 / Bharat AC-001 / Others)	
22.	Number of EV chargers	
23.	Capacity of each EV charger (kW)	
24.	No. of connector guns	
25.	Total connected load	

ANNEXURE - III (B)

Documents required from the CPO (Tentative list).

1) Registered land deed between Land Owning Agency and the CPO or between lessee and charge point operator in case of sub leased property.
2) Power of Attorney confirming powers on the person(s) who are competent to execute the MoU / agreement.
3) Certified copy of Company Registration Certificate.
4) Copy of PAN Card.
5) Copy of GST Registration.
6) Self-Attested copy of Govt. ID Proof of the Authorised Representative.
7) Petroleum & Explosives Safety Organization (PESO)Approval in case electricity connection required for installation of EV chargers at Petrol Pumps / Gas Stations, shall be sought by CPO.
8) NOC from fire department (if EV charger is to be installed in the basement of a building).
9) EV Charger typetest certificate fromNABL Accredited Lab.
10) Undertaking on Stamp Paper for using power supply only for public EV charging.

ANNEXURE – IV

Model Revenue Sharing Agreement between Land-Owning Agency (LOA) andCharge Point Operator (CPO) for deployment of Public EV Charging Stations

This agreement is entered into this ….. day of …… <YYYY> at ..... , India.

BETWEEN

M/s. <Insert Name of Land Owning Agency>which expression shall unless repugnant to the context or meaning thereof, include successors and assigns of the **FIRST PART**.

AND

M/s. <Name of CPO>a Company registered under the 1956 Act, having its registered Office at <CPO registered address> (hereinafter referred to as "<CPO>" which expression shall mean and include its successor(s), administrator(s) and assigns) of the **SECOND PART.**

<LAND OWNING AGENCY> and <CPO> are hereinafter individually referred to as the"**Party**" and collectively as the "**Parties**".

WHEREAS:

A. <Details of <LAND OWNING AGENCY> (Name & Address)>.

B. <Details of CPO (Name & Address)>,

C. **<CPO>** intends to establish, setup and operate Charging Point(s) (*defined herein below*) for charging of electric vehicles at identified sites operated by <<LAND OWNING AGENCY> Name> and <LAND OWNING AGENCY> intends to grantpermission to **<CPO NAME>** to set up Public EV Charging Stations at selected sites in ……. (hereinafter referred as "**Public Charging Station Locations/ SOL**") and manage the same at <LAND OWNING AGENCY>sites on mutually agreed terms and conditions outlined in this Agreement.

D. In consideration of the above, this Agreement sets out the intent of the Parties in relation to the said proposal.

NOW THEREFORE, in consideration of the mutual covenants, terms, conditions and understandings set forth in this Agreement, the Parties hereby agree as follows:

1. Definitions

The following capitalized terms wherever used in this AGREEMENT shall have themeanings given hereunder:
"**Public EV Charging Stations(s)**" means a device or station that supplies power to charge the batteries of an electric vehicle;

"**CPO**" mean Charger Point Operator.

"**AC**" shall mean Alternating Current Charging;

"**DC**" shall mean Direct Current Charging;

"**GST**" shall mean Goods and Services Tax;

"**Installation Work**" means the construction and installation of the Public Charging stations and upstream supply, (if required) System and the operation and maintenance thereof, all performed by or for **<CPO NAME>** at the identified site.

"**kW**" shall mean rating of public EV Charger;

"**Operating Cost**" shall include direct electricity energy charge payment through payment gateway service provider appointed by **<CPO NAME>**, salary of supervisor or equivalent level person designated for managing the backend system, salary for semi-skilled/ skilled workers appointed by <CPO NAME> for maintenance of chargers, annual maintenance cost of chargers, telecommunication cost, IT System cost and customer support;

"**Projects/ Charging Locations** shall have a meaning ascribed in above Recital C hereof;

"**SOL**" means sites owned and/or operated by <LAND OWNING AGENCY>.

"**Term**" shall mean 10 years with Annual Maintenance Cost (AMC) starting from the earlier of: (a) six months from the Effective Date, or (b) the date of installation of the last Charging Point at the identified SOL in terms of this Agreement.

Effective Date: DD/MM/YYYY

"**System**" includes the Charging Points, assemblies, converters, switches, wiring devices and wiring, and all other material/civil works comprising the Installation Work.

2. Proposal

a. M/s CPO Name has proposed to establish and operate up to ……. no. of Public Electric Vehicle Charging Point(s) at SOL owned and/or operated by Land owning agency. For Setting up of such Public EV charging stations by M/s CPO, Landowning agency would provide the required space of about Sq. Ft within the premises of the identified locations subject to feasibility in order to develop the required infrastructure for charging of electric vehicles.
b. The Parties are keen to develop partnership for the Projects/ Public EV Charging Locations at <Location Address> and may discuss further expansion at other locations, at the sole discretion of M/s <CPO Name>.
c. The Parties shall jointly select the identified locations based on availability of space and feasibility of operation of the Public Charging Stations without affecting regular operation of the identified locations.
d. M/s <CPO NAME> agrees to establish, setup and operate ……. nos. of charging points at each public charging station. The Charging Station shall have chargers in accordance with Guidelines notified by the Ministry of Power. The charging infrastructure so installed shall comply with the government/ministry of power guidelines and regulations for performance, safety & quality from time to time.
e. M/s <CPO NAME> agrees to invest in setting up and operating the public charging stations including separate power connection, transformer and meter, if required, at itsown cost, and shall upgrade and refurbish the Public Charging Stations, in line with the technology advancements and business needs, from time to time. The cost of electricity including surcharge, duty, contingency for power purchase adjustment charges, etc. and all operating

and maintenance expenses related to Charging Points shall be borne by M/s <CPO NAME>.

f. The Parties agree that the Public Charging Stations may be operated through a cloud- based solution technology developed and owned by M/s <CPO NAME> and manpower deployed at the identified locations by M/s <CPO name>

g. The Parties agree that all applicable statutory approvals/ permissions from the respective authorities for the Public Charging Stations shall be procured and obtained by M/s <CPO NAME>. <LAND OWNING AGENCY> shall provide all assistance toM/s <CPO NAME> to enable M/s <CPO NAME> to obtain the consents, clearances and permits, and the governmental approvals in a timely manner in connection with the Project. Further, <Land owning agency> agrees to assist in obtaining separate power connection or enhancing the power supply at each location, if required by M/s <CPO NAME> in connection with the Project.

h. M/s <CPO NAME> shall arrange deployment of qualified and suitable manpower and required necessary tools, logistics, spares & consumables during installation, commissioning and O&M of Public EV charging stations at SOL. <LAND OWNING AGENCY> hereby grants to M/s <CPO NAME> a right, co-terminus with the term to ingress and egress the location and access to electrical panels and conduits to interconnect or disconnect the System with the SOL electrical wiring.

i. Safety is of paramount importance and M/s <CPO NAME> shall take all safety precautions in connection with the setting up and operation of the Public Charging Stations to ensure safety to the user. <LAND OWNING AGENCY> agrees to ensure to provide safe and secure environment to install and operate the System. In the event of any damage to the land-owning agency facilities, property due to any fault in the M/s <CPO NAME>'s equipment, M/s <CPO NAME> will be liable to make good thelosses to SOL for the same. <LAND OWNING AGENCY> shall be responsible for the loss incurred by M/s <CPO NAME> limited to Public Charging Stations and established infrastructure due to gross negligence or willful default on the part of <LAND OWNING AGENCY> or their agents/ employees.

j. <LAND OWNING AGENCY> agrees and confirms that the Public Charging Locations (including the unfettered access to the identified space for the respective <LAND OWNING AGENCY>) shall be free from encumbrances or hindrances, and if during the installation and operation period, the same is identified by M/s <CPO NAME>, then <LAND OWNING AGENCY> shall remove the encumbrance or hindrance or provide suitable space for the System within the same location at the cost and expense of <LAND OWNING AGENCY> with immediate effect.

k. The Parties agree to jointly undertake the planning, design, setting-up and implementing the Projects/ Public Charging Stations at the respective <LAND OWNING AGENCY>. The Parties, *inter-alia*, agree to ensure; (a) Planning and designing the charging infrastructure in relation to the Projects; (b) Investment in the Projects by M/s <CPO NAME>; (c) Operating and maintaining the Projects by <CPOName>; and (d) Managing the Projects using cloud-based solution system software.

l. <LAND OWNING AGENCY> shall not directly or indirectly cause, create, incur, assume, or suffer to exist any lien on or with respect to the System or any interest therein. The Project and the System shall remain the property of M/s <CPO NAME> and shall not attach to or be deemed a part of, or fixture to the <LAND OWNING AGENCY>. Neither <LAND OWNING AGENCY> nor its lessees or tenants or any other Person shall have any right, benefit, or interest in the Project.

m. <LAND OWNING AGENCY> shall provide sufficient space at the provided location for the temporary storage and staging of tools, materials, equipment and facilities reasonably necessary during the Installation Work, or Project removal, and access for rigging and material handling.

n. Wherever separate power connection to Public EV Charging Stations is not mandated/ not provided, <LAND OWNING AGENCY> shall provide required power to M/s<CPO NAME> for the maintenance and operation of its System at the rate <LAND OWNING AGENCY> is paying to the distribution utility at the relevant SOL and M/s<CPO NAME> shall reimburse the same to <LAND OWNING AGENCY> on actuals. In case, requires additional transformer or any expenses for providing the power, the same shall be incurred by M/s <CPO NAME>. In the event of the Govt. announcing apolicy for subsidized power charges for EV charging stations, then M/s <CPO NAME> shall make necessary arrangements including separate meter and approvals as requiredat their own cost to avail the lower tariff.

o. Any other activities considered necessary for setting up Public Charging Stations for electric vehicles at provided locations or other suitable locations on mutually agreed covenants/commercials arrangements, which are not specifically set out herein, but which may be identified at a later date, shall be included by mutual discussion and consent of Parties.

p. The number of identified locations considered for Public EV Charging Stations wouldnot be a binding number and could be amended seeing the potential, increase in business volume, less vehicle turnaround etc., if any.

q. The number of Public EV Charging Stations in a cluster would be tentative and could increase / decrease subject to joint agreement between <LAND OWNING AGENCY> and M/s. <CPO NAME>. The addition or deletion of EV Charging Stations could be subsequently conveyed to each other in writing.

r. Branding: <LAND OWNING AGENCY> and M/s. <CPO NAME> shall do joint branding of the venture so as to create positive long-term association, market penetration, to create synergies based on unique strengths of each parties/brand, gain market share and increase revenue and also to boost the reputation of the parties in thisproject.

3. Payment of License Fee, Revenue Share and Billing Cycle raising of invoices, release of payments, security deposit etc.

a. M/s. **<CPO NAME>** to pay <LAND OWNING AGENCY> Rs. xxx/kWh which shall be ₹ 1.0 / kWh in case of such CPO being a Government/Public Entity or at discovered price through bidding with floor price of ₹ 1 / kWh in case CPO being aprivate entity of billed units(kWh) from charging business starting from 1st year, of billed units from charging business to <LAND OWNING AGENCY> within …. days after end of Quarter.

b. For the purpose of revenue sharing, M/s **<CPO NAME>** shall furnish the completedetails of accounting of the billed units to <LAND OWNING AGENCY> for transparency and shall be governed by confidentiality under this Agreement.

M/s <CPO NAME> shall promptly pay the bill on monthly basis within 10 days of demand for electrical energy consumed for charging electric vehicles at the said locations as per actual minimum charges /as per actual. The charges should be paid to the <LAND OWNING AGENCY> till such time a separate meter is obtained in the name of <CPO NAME>. After obtaining a separate meter in the name of <CPONAME>, the electricity charges shall be directly paid by <CPO NAME> based on the electrical energy consumed for charging EVs at each SOL. Dispute resolution mechanism of electricity bills, if any, to be taken up with relevant Discom with support from land owning agency.

4. Payment of Taxes

M/s **<CPO NAME>** shall pay all the statutory levies and taxes imposed by the Government or any other authorities present or future on the operation of EV charging stations. Further, M/s **<CPO NAME>** shall also pay to <LAND OWNING AGENCY> increase in the taxes and/or any levies on

the land area used specifically for Public EV charging station, by any local authority including Municipal corporation/municipality/gram panchayat or any other statutory authority or by the government except property tax. <LAND OWNING AGENCY> shall pay property tax.

5. Insurance

M/s **<CPO NAME>** shall at all times and from time to time at its own cost and expense take out adequate and proper insurance during the continuance of this agreement from a well reputed insurance company against all risks including third party risk to persons and properties, fire and explosion risk and riot risks etc. covering operation of the Public Charging stations installed at SOL.

6. Standard Indemnification

Each party (indemnifying party) agrees to indemnify, defend and hold the other party(indemnified party) harmless from and against:

a. Any third party claim (including intellectual property infringement claim), liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character, arising out of or in any manner solely attributable to any failure of the indemnifying Party to perform its obligations described hereunder, gross negligence or wilful misconduct in the fulfilment of its obligations hereunder or for infringing the intellectual property rights of any third party.
b. Any claim, liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character arising from claims or sanctions or penalties imposed by any regulatory authority for failure by a Party or any of its respective officers, directors, employees, servants, sub-contractors or agents to comply with any applicable laws, rules and regulations.
c. Any claim, liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character with respect to any damage to or loss of property of a third party arising out of acts or omissions by a Party or any of its respective officers, directors, employees, servants, sub- contractors, or agents in the performance of its obligations under this agreement.

7. Term & Termination

7.1 This Agreement shall come into force from the Effective Date of this agreement and remain in force during the 'Term' as defined under Definitions above. The agreement shall be further extended for a period as decided and agreed mutually in writing by the Parties. The Agreement may be terminated / exited by the Parties prior to the scheduled validity period due to any one of the following reasons:

a. Any misrepresentation, breach or violation of the terms of this Agreement by either of the Parties;
b. If <LAND OWNING AGENCY> fails to provide the Charging Locations for locating the Charging Points at the identified SOL or M/s **<CPO NAME>** failing to install the charging Points at the identified SOL within a reasonable time as agreed mutually; and

c. With mutual consent of both the parties without assigning any reason.

7.2 Upon such early termination, M/s <CPO NAME> shall have the right to dismantle all the System, equipment and Charging Points and take control in its custody, the Charging Points, System and equipment. <LAND OWNING AGENCY> shall have noright to claim and recover any of the Charging Points and the System from any Charging Locations at the identified locations and the equipment/ infrastructureestablishment by M/s <CPO NAME>.

8. Representations and Warranties

Each Party represents and warrants to the other Parties that:

(a) it has power to execute, deliver and perform its obligations under the Agreement and all necessary corporate and other actions have been taken to authorise such execution, delivery and performance;
(b) it has all requisite power and authority, and does not require the consent of any thirdparty to enter into this AGREEMENT and grant the rights provided herein;
(c) it is in compliance with all applicable laws and regulations, as may be applicable to it.
(d) the execution, delivery and performance of its obligations under the Agreement doesnot and will not: (i) contravene any applicable law, or any judgment or decree of anycourt having jurisdiction over it; or (ii) conflict with or result in any breach or defaultunder any agreement, instrument, regulation, license or authorisation binding upon it or any of its assets.
(e) violate the memorandum and articles of association, by-laws or other applicable organisational documents thereof; and
(f) there is no litigation pending or, to the best of such Party's knowledge, threatened towhich it is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfilment of its obligations under this AGREEMENT.

9. Confidentiality

9.1. During the subsistence of this Agreement and after termination or expiration of this Agreement for any reason whatsoever, the Party receiving any information and/or document which are marked as Confidential (hereinafter referred to as the "Confidential Information") shall:

a. Keep the confidential Information confidential;
b. Do not disclose the Confidential Information to any other person without the prior written consent of the Party disclosing such information (hereinafter referred to as the "**Disclosing Party**") except to its employees, agents, shareholders, investors, partners and advisors on a strictly need-to-know basis,and upon such person executing a non-disclosure undertaking in respect of theConfidential Information in a format reasonably satisfactory to the Disclosing Party;
c. Do not use the Confidential Information for any purpose other than theperformance of its obligations under this Agreement; Without the prior writtenconsent of the Disclosing Party, not to make a public announcement or any other disclosure of the Confidential Information except as required by any legal stipulation applicable to it. In case of such disclosure required by legal stipulation, a Party which is required to make such disclosure shall, as soon aspracticable after it is made aware of the requirement to make such disclosure,inform the Disclosing Party of the need to disclose such Confidential Information, the content thereof and the legal stipulation which requiresdisclosure of such Confidential Information.

9.2. The obligations contained in the relevant clauses above shall not apply to any Confidential Information which:

a. is at the date of this Agreement or at any time after the date of this Agreementcomes into the public domain other than through breach of this Agreement bysuch Party; can be shown by the Party receiving the information to thereasonable satisfaction of the Disclosing Party that the same was known to such Party prior to the disclosure;
b. subsequently comes lawfully into the possession of the Party receiving such information from a person other than the Disclosing Party; or
c. such information which any Party is required to disclose by law, by a court ofcompetent jurisdiction or by another appropriate regulatory body, provided that the Party required to disclose shall use reasonable endeavors to consult with the Disclosing Party and take into consideration is reasonable requests inrelation to such disclosure.

10. Notice

All communication, demand and notices required to be sent under this Agreementshall be sent or delivered to the receiving Party at the address set forth herein, or at such other address as the Parties may from time to time designate in writing:

M/s <CPO NAME>:
Address : -
…….
…….
……..
……..

Fax No.:
Email id :-

LOA:
Address:
Email id:-

Any Notice, demand or other communication shall be sent by registered post / handdelivery.

11. Intellectual Property Rights

Intellectual Property Rights owned by each respective Party shall remain the propertyof such Party and nothing in this AGREEMENT shall be taken to represent an assignment, license or grant of other rights in or under such Intellectual Property Rightsto the other Party. All right, title and interest to all Intellectual Property of each Party as of the Effective Date of this AGREEMENT, including that which is or may becomeprotectable by patent, copyright, trademark, trade secret or similar law, shall remain exclusively with that Party.

12. Governing Law and Jurisdiction

This AGREEMENT shall be governed by and construed in accordance with the lawsof India. Courts at <City, State>, India shall have exclusive jurisdiction in respect ofmatters arising out of or in relation to this AGREEMENT.

13. Dispute Settlement

The Parties hereby agree that they shall work together to resolve any disputes that mayarise under, in relation to or in connection with this Agreement (referred to in this clause as a "**Dispute**"). In the event such Dispute is not resolved amicably within 60 (sixty) days of the date of receipt of notice issued by disputing party with respect to same by the non- disputing party then in such case all Dispute shall be settled by binding arbitration pursuant to the Arbitration and Conciliation Act, 1996, as amended("**Arbitration Act**"), in following manner:

If any dispute or difference of any kind whatsoever shall arise between the Parties inconnection with or arising out of this agreement, such dispute or difference shall be resolved through arbitration as per the procedure mentioned herein below:

a. The dispute or difference shall be referred to a sole arbitrator.
b. The arbitration shall be through High Court Mediation and Arbitration Centre atHigh Court of Judicature at <city name> for the state of <state name>.
c. The rules of the above mentioned Institutional Arbitration Forum shallbe applicable to the arbitral proceedings.
d. The Indian Arbitration & Conciliation Act 1996 and Arbitration and Conciliation (amendment) Act 2015 or any statutory modification or re-enactment thereof and the rules made there under for the time being in force shall apply to the arbitration proceedings under the clause.
e. The seat of arbitration shall be at <city name>, <state name>, India.
f. The proceedings shall be conducted in English language.
g. The cost of the proceedings shall be equally borne by the parties, unless otherwise directed by the sole arbitrator.
h. The following shall not be referred to arbitration: Disputes having financial claims less than Rs. 5 Lakhs.

Notwithstanding anything contained herein above (except 'h') upon arising of disputethe parties may agree to refer the same to arbitration of mutually acceptable sole arbitrator.

14. Limitation of Liability

Notwithstanding anything in this AGREEMENT to the contrary and to the extent permitted by applicable law, in no event shall either Party, its officers, directors, or employees be liable for any form of incidental, consequential, indirect, special or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss ofinformation or data, or other financial loss, whether such damages arise in contract, tort or otherwise, irrespective of fault, negligence or strict liability or whether such Party has been advised in advance of the possibility of such damages. A Party will not be inbreach of the AGREEMENT or be liable to the other Parties if it fails to perform or delays the performance of an obligation as a result of an event beyond its reasonable control, including, legislation, regulation, order or other act of any Government or Governmental agency.

15. Waiver

Failure of a Party to require performance of any provision of this Agreement shall not affect such Party's right to full performance thereof at any time thereafter, and any waiver by a Party of a breach of any provision hereof shall not constitute a waiver of asimilar breach in the future or of any other breach. No waiver shall be effective unlessin writing and duly executed by the concerned Party.

16. Assignment

Except as provided in this Agreement, none of the Parties shall be entitled to assign their rights and obligations under the Agreement to a third party without the prior written consent of the other Party, except to its affiliate companies

17. Amendment

No modification or amendment to this Agreement and no waiver of any of the terms or conditions hereof shall be valid or binding unless made in writing and duly executed by the Parties.

18. Severability

If any provision of this Agreement is held to be invalid, illegal or unenforceable, such provision will be struck from the Agreement and the remaining provisions of this Agreement shall remain in full force and effect. Further, the Parties shall endeavour to replace such provision with a valid, legally enforceable provision that reflects the original intent of the Parties.

19. Entire Agreement

This Agreement supersedes all prior discussions and agreements (whether oral or written, including all correspondence) if any, between the Parties with respect to the subject matter of this Agreement, and this Agreement contains the sole and entire understanding and agreement between the Parties hereto with respect to the subject matter contained herein.

20. Force Majeure

Neither Party shall be held responsible for non-fulfillment of their respective obligations under this AGREEMENT due to the exigency of one or more of the force majeure events which are beyond the reasonable control of the Party concerned such as but not limited to acts of God, wars, floods, earthquakes, lawful strikes not confined to the premises of the Party, lockouts beyond the control of the Party claiming force majeure, epidemics, riots, civil commotions etc. provided on the occurrence and cessation of any such event , the Party affected thereby shall give a notice in writing to the other Party within one (1) month of such occurrence or cessation. If the force majeure conditions continue beyond six (6) months, the Parties shall jointly decide about the future course of action.

21. Survival

Those Clauses that by its nature should survive expiration or termination of this Agreement shall remain in effect after the expiration or termination of this Agreement. It specifically clarified that the provisions of Clauses 9 (*Representations and Warranties*), Clause 10 (*Confidentiality*), Clause 12 (*Intellectual Property Rights*), Clause 13 (*Governing Law and Jurisdiction*) and Clause 14 (*Dispute Settlement*) shall survive expiration or termination of this Agreement.

22. Counterparts

This Agreement may be signed in counterparts, each of which shall be deemed to be an original, and all of which together shall constitute the same instrument.

23. Miscellaneous

a. It is agreed and understood by the Parties that this Agreement is a legally binding contract and under no circumstances shall stand terminated, except in terms of Clause 3 of this Agreement.
b. This Agreement is on a principal-to-principal basis between the Parties hereto. Nothing contained in this Agreement shall be construed or deemed to create any association, partnership or joint venture or employer-employee relationship or principal-agent relationship in any manner whatsoever between the Parties.
c. The Parties shall not use each other's name and/or trademark/logo or publicize or release any information about this Agreement or its contents or market, publish, advertise in any manner any information without prior written consent of the otherParty.

24. Rules of Interpretation

a. Irrelevance of Gender and Plurality. The definitions in this Agreement shall applyequally to both the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms.
b. Internal References. All references herein to Clauses and Annexure shall bedeemed to be references to Clauses of and Annexure to, this Agreement unless thecontext shall otherwise require. All Annexure attached hereto shall be deemed incorporated herein as if set forth in full herein. The terms "clause(s)" and "sub- clause(s)" shall be used herein interchangeably. The words "hereof," "herein" and"hereunder" and words of similar import when used in this Agreement shall refer to this Agreement as a whole and not to any particular provision of this Agreement.The words "include", "includes", and "including" shall be deemed to be followed by the words "without limitation".
c. Default Rules. Unless expressly contradicted or otherwise qualified, (i) all references to a Person also refer to that Person's successors and permitted assigns, including permitted transferees, and (ii) all references to and definitions of any agreement, instrument or statute herein or in any agreement or instrument referred to herein mean such agreement, instrument or statute, including the Articles, as from time to time may be amended, modified, supplemented or restated, including(in the case of agreements or instruments) by waiver or consent and (in the case of statutes) by succession of comparable successor statutes and references to all attachments thereto and instruments incorporated therein.
d. Drafting. The Parties have participated jointly in the negotiation and drafting of this Agreement; accordingly, in the event an ambiguity or a question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties, and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provisions of this Agreement.
e. Clause Heading: The clause heading contained in this Agreement are for the convenience of the Parties and shall not affect the meaning or interpretation of thisAgreement.

25. GENERAL PROVISIONS

a. If any provision of this AGREEMENT is held to be invalid or unenforceable to anyextent, the remaining provisions of this AGREEMENT shall not be affected thereby and each remaining provision of this AGREEMENT shall be valid and enforceable to the fullest extent permitted by law. Any invalid or unenforceable provision of this AGREEMENT shall be replaced with a provision which is valid and enforceable and reflects, to the maximum extent possible, the original intent ofthe unenforceable provision.

b. Each Party will be solely responsible for its own acts and omissions (and the acts and omissions of its employees and other agents) and neither Party will have the authority nor will purport to act for, or legally binding, the other Party in any transactions with a third party except as agreed in writing by the Parties.
c. The release of any information and of all public announcements (other than when such disclosure is required under any applicable law) related to such projects by a Party shall be subject to the prior written approval of the other Party, unless required under stock exchange regulations/SEBI.
d. This Agreement shall not be amended, modified or supplemented without prior written consent of the other Party.

In Witness Whereof The Parties Hereto Have Signed This MoU In Duplicate On The _____Day,_____Month and_____Year Herein Above Written In The Presence Of:

For <LAND OWNING AGENCY> **For M/s <CPO NAME>**
Signed & Sealed **Signed & Sealed**

WITNESS: **WITNESS:**

1. **1.**

2. **2.**

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