

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.319
ANSWERED ON 05.12.2023

STEPS TAKEN TO REDUCE CARBON EMISSIONS

319 SHRI VIVEK K. TANKHA:

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

- (a) the steps taken by Government to reduce carbon emissions from power projects;
- (b) the number of new power projects that have been established by Government since 2018, the details thereof, year-wise and State-wise;
- (c) whether Government has shut down any thermal power plant and replaced it with a renewable and non-polluting project, if so, the details thereof; and
- (d) the plans contemplated by Government to shift from pollution causing thermal plants to non-polluting energy projects?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R.K. SINGH)

(a) : The steps taken by Ministry of Power to reduce carbon emissions from power projects are as follows:

- i. Ministry of Power is implementing a market-based mechanism namely Perform, Achieve and Trade (PAT) scheme to enhance energy efficiency in energy intensive large industries including Thermal Power Stations consuming more than 30,000 tonne of oil equivalent (toe) of energy per annum. Under this scheme, 226 number of Thermal Power Station are covered accounting for capacity of around 197 GW. This scheme mandates all Thermal Power Stations to reduce their Net Heat Rate over a period of three year cycle which in turn reduces coal consumption and hence result in CO₂ emissions reduction. As on 2020-21, saving in terms of energy is about 7.21 million tonnes of oil equivalent (mtoe), which is equivalent to emission reduction of about 27.51 million tonnes of CO₂ from these Thermal Power Plants (TPPs).
- ii. Many TPPs have adopted use of efficient technologies i.e. from subcritical to supercritical and now using ultra-supercritical technology in order to improve efficiency, thereby reducing coal consumption and emissions. A total capacity of Supercritical/ Ultra-supercritical units of 63830 MW (92 Units) and 2120 MW (03 units) has been commissioned respectively till 31.10.2023.
- iii. The capacity of about 8059.92 MW comprising 99 units of inefficient and old thermal power generation units has already been retired from Jan, 2018 to 15.10.2023.

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- iv. Policy on Bio-mass Utilization for Power Generation through Co-firing in Domestic Coal based Power Plants was issued on 08.10.2021 for the use of agro residue-based biomass which has mandated usage of biomass co-fired along with coal for thermal power plants.
- v. A total of 186.46 GW capacity from non-fossil fuel-based energy resources has been installed in the country as on 31.10.2023, which includes 178.98 GW Renewable Energy and 7.48 GW Nuclear Power. This is about 43% of our total power generation capacity. By 20230, India will have 50 percent of its installed power generation capacity from non-fossil sources.

(b) : As on 31-10-2023 (Financial Year 2023-24), National Thermal Capacity of 25,091.91 MW have been added to the grid since FY 2018-19. The details are **Annexed**.

(c) & (d) : As per Section 7 of the Electricity Act, 2003, generation is a de-licensed activity and phasing out/retirement of units is decided by generating utilities/companies based on their own techno-economic and commercial considerations. To promote the generation of Renewable Energy in the country since 2018, Government of India has taken the following steps:

- (i) Permitting Foreign Direct Investment (FDI) up to 100 percent under the automatic route.
- (ii) Waiver of Inter State Transmission System (ISTS) charges for inter-state sale of Solar, Wind, Green Hydrogen/Green Ammonia, Pumped Storage Plants & Energy Storage Sources.
- (iii) Notification of trajectory for Renewable Purchase Obligation (RPO) up to the year 2029-30.
- (iv) Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission connectivity to RE developers for installation of RE projects at large scale.
- (v) Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), Solar Rooftop Phase II, 12000 Mega Watt (MW) Central Public Sector Undertaking (CPSU) Scheme Phase II, etc.
- (vi) Laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power.
- (vii) Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar photovoltaic (PV), Wind and Solar Wind hybrid Projects.
- (viii) Notification of Promoting Renewable Energy through Green Energy Open Access Rules 2022.
- (ix) Launch of Green Term Ahead Market (GTAM) to facilitate sale of Renewable Energy Power through exchanges.

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 319 ANSWERED IN THE RAJYA SABHA ON 05.12.2023

Thermal Power Projects commissioned since FY-2018							
	Sector	State	Project Name	Implementing Agency	Fuel	Unit No	Cap. added (MW)
FY 2018-19							
1	Central	Assam	Bongaigaon TPP	NTPC	Coal	U-3	250
2	Central	Bihar	Nabi Nagar TPP	NTPC & BRBCL	Coal	U-3	250
3	Central	Madhya Pradesh	Gadarwara TPP	NTPC	Coal	U-1	800
4	Central	Maharashtra	Solapur STPP	NTPC	Coal	U-2	660
Total Central Sector							1960
5	State	Madhya Pradesh	Shri Singhaji TPP St-II	MPPGCL	Coal	U-3	660
6	State	Madhya Pradesh	Shri Singhaji TPP St-II	MPPGCL	Coal	U-4	660
7	State	Telangana	Kothagudem TPS St-VII	TSGENCO	Coal	U-1	800
8	State	Rajasthan	Chhabra TPP Extn	RRVUNL	Coal	U-6	660
9	State	Assam	Lakwa Replacement Power Project (7x9.965 MW)	APGCL	Gas	GT	69.76
Total State Sector							2849.76
10	Private	Madhya Pradesh	Mahan TPP / Essar Power MP Ltd. / Chinese	Essar Power MP Ltd.	Coal	U-2	600
11	Private	Chhattisgarh	Uchpinda TPP	RKM Power	Coal	U-4	360
12	Private	West Bengal	Dishergarh TPS	IPCL	Coal	U-1	12
Total Private Sector							972
Total F Y 2018-19							5781.76
FY 2019-20							
13	Central	Bihar	Nabi Nagar STPP	NPGCL	Coal	U-1	660
14	Central	Madhya Pradesh	Khargone STPP St-I	NTPC	Coal	U-1	660
15	Central	Madhya Pradesh	Khargone STPP St-I	NTPC	Coal	U-2	660
16	Central	Uttar Pradesh	Tanda TPP St- II	NTPC	Coal	U-5	660
17	Central	Odisha	Darlipalli STPP St-I	NTPC	Coal	U-1	800
18	Central	Tamil Nadu	Neyveli New TPP	NLC	Lignite	U-1	500
Total Central Sector							3940
19	State	Gujarat	Wanakbori TPS Extn.	GSECL	Coal	U-8	800
20	State	Odisha	Ib valley TPP	OPGC	Coal	U-3	660
21	State	Odisha	Ib valley TPP	OPGC	Coal	U-4	660
22	State	Rajasthan	Suratgarh SCTPP	RRVUNL	Coal	U-7	660
Total State Sector							2780
23	Private	Madhya Pradesh	BLA Power Pvt. Ltd(Niwari) TPP	BLA Power Pvt. Ltd	Coal	U-2	45
Total Private Sector							45
Total FY 2019-20							6765

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FY 2020-21							
24	Central	Chhattisgarh	Lara STPP	NTPC	Coal	U-2	800
25	Central	Uttar Pradesh	Meja STPP	JV of NTPC & UPRVUNL	Coal	U-2	660
26	Central	Tamil Nadu	Neyveli New TPP	NLC	Lignite	U-2	500
27	Central	Madhya Pradesh	Gadarwara STPP	NTPC	Coal	U-2	800
28	Central	Uttar Pradesh	Tanda St-II	NTPC	Coal	U-6	660
29	Central	Bihar	Nabi Nagar STPP	NPGL	Coal	U-2	660
Total Central Sector							4080
30	State	Assam	Namrup CCGT-Gas	APGCL	Gas	ST	36.15
31	State	Telangana	Bhadradi TPP	TSGENCO	Coal	U-1	270
32	State	Telangana	Bhadradi TPP	TSGENCO	Coal	U-2	270
33	State	Telangana	Bhadradi TPP	TSGENCO	Coal	U-3	270
Total State Sector							846.15
Total F Y 2020-21							4926.15
FY 2021-22							
34	Central	Odisha	Darlipalli STPP St-I	NTPC	Coal	U-2	800
35	Central	Bihar	Barh STPP, Stage-I	NTPC	Coal	U-1	660
36	Central	Bihar	Nabi Nagar TPP	BRBCL	Coal	U-4	250
37	Central	Bihar	Nabi Nagar STPP	NPGL	Coal	U-3	660
Total Central Sector							2370
38	State	Rajasthan	Suratgarh SCTPP	RRVUNL	Coal	U-8	660
39	State	Telangana	Bhadradi TPP	TSGENCO	Coal	U-4	270
40	State	Uttar Pradesh	Harduaganj Expn-II	UPRVUNL	Coal	U-1	660
Total State Sector							1590
41	Private	Tamil Nadu	Tuticorin TPP, St-IV	SEPC	Coal	U-1	525
Total Private Sector							525
Total FY 2021-22							4485
FY 2022-23							
42	Central	Jharkhand	North Karanpura STPP	NTPC	Coal	U-1	660
Total Central Sector							660
43	State	Andhra Pradesh	Sri Damodaram Sanjeevaiah TPP St-II	APPDCL	Coal	U-1	800
Total State Sector							800
Total FY 2022-23							1460
FY 2023-24							
44	Central	Bihar	Barh STPP, Stage-I	NTPC	Coal	U-2	660
45	Central	Telangana	Telangana STPP St- I	NTPC	Coal	U-1	800
Total Central Sector							1460
46	Private	Uttarakhand	Kashipur CCPP, Ph-II	M/s SEPL	R-LNG	Mod-2	214
Total Private Sector							214
Total FY 2023-24 (upto 31-10-2023)							1674
Grand Total 2018-24							25,091.91
