GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.1886
ANSWERED ON 30.07.2026

INSTALLATION OF FGD SYSTEM IN TPPs

1886. SHRI VIJAY KUMAR DUBEY:
SHRI AMAR SHARADRAO KALE:
SHRI PRADEEP PUROHIT:
SHRI NABA CHARAN MAJHI:
SHRI KHAGEN MURMU:
SHRI CHANDRA PRAKASH CHOUDHARY:

Will the Minister of POWER be pleased to state:

(a) the measures taken to reduce the environmental impact of coal-based thermal power plants;

(b) the progress made in the installation of Flue Gas Desulphurisation (FGD) systems in Thermal Power Plants (TPPs) in the country including Jharkhand;

(c) the initiative undertaken for utilisation of fly ash and scientific ash management;

(d) the measures undertaken to promote biomass and municipal solid waste co-firing in thermal power plants; and

(e) the details of the strategy adopted to balance the thermal power expansion with environmental sustainability?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a): All the Coal based Thermal Power Plants (TPPs) are mandated to obtain Environmental Clearance from Ministry of Environment, Forest and Climate Change (MoEF&CC). Further, TPPs are regulated through grant of Consent to Establish and/or Consent to Operate under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 by respective State Pollution Control Board (SPCB). In addition, the following measures have been undertaken to reduce the environmental impact of coal-based thermal power plants:

(i) Ministry of Power issued a comprehensive policy on 07.11.2025 for co-firing of Bio-mass pellets [including torrefied charcoal made from Municipal Solid Waste (MSW)] in Coal Based Power Plants, providing for use of a 5–7% blend of biomass pellets and/or MSW-based torrefied charcoal along with coal.

(ii) Reduction of Stack Emissions - MoEF&CC, vide notification dated 07.12.2015 and subsequent amendments, has prescribed stack emission norms relating to Suspended Particulate Matter (SPM), Sulphur Dioxide (SO_2) & Nitrogen Oxides (NOx) for coal based Thermal Power Plants. To comply with these norms, thermal power plants have adopted technologies such as Electrostatic Precipitators (ESPs), Flue Gas Desulphurisation (FGD) systems and NOx combustion modification measures.

(iii) The Perform, Achieve and Trade (PAT) Scheme has been implemented in thermal power plants to improve energy efficiency, which contributes to reduction in CO_2 emissions.

(b): Out of 605 thermal power plant units categorised by the Task Force (Category A – 66, Category B – 72 and Category C – 467), Flue Gas Desulphurisation (FGD) systems have been installed in 75 units (Category A – 19, Category B – 4 and Category C – 52).

Out of 13 thermal power plant units located in Jharkhand, FGD systems have been installed in 03 units. The remaining 10 units fall under Category C. As per the MoEF&CC notification dated 11.07.2025, Category C thermal power plant units are required to meet the prescribed stack height criteria specified under notification G.S.R. 742(E) dated 30.08.1990. Accordingly, all 13 TPP units in Jharkhand comply with the applicable norms.

(c): The initiatives relating to utilisation of fly ash and scientific ash management include the following:

(i) MoEF&CC has issued Ash Notification dated 31.12.2021 and subsequent amendments dated 30.12.2022 and 01.01.2024, providing for 100% utilisation of ash generated from coal/lignite-based thermal power plants in environmentally friendly avenues.

(ii) Ministry of Power issued revised guidelines dated 30.01.2026 for coal/lignite-based thermal power plants to streamline the procedure for disposal of current and legacy ash.

(iii) Guidelines for proper handling of ash dykes (including design, construction, operation & maintenance) have been issued by Central Electricity Authority (CEA) and the Central Pollution Control Board (CPCB).

(d) : The measures undertaken to promote biomass and Municipal Solid Waste (MSW) co-firing in thermal power plants include the following:

(i) Ministry of Power issued a policy on 17.11.2017 for promotion of biomass co-firing in coal-based thermal power plants. The policy was subsequently modified on 08.10.2021, 03.05.2023 and 06.06.2023. Further, a revised Comprehensive Policy for Co-firing of Biomass pellets [including Torrefied Charcoal made from Municipal Solid Waste (MSW)] in Coal based Thermal Power Plants was issued in November 2025, providing for use of a 5–7% blend of biomass pellets and/or MSW-based torrefied charcoal along with coal.

(ii) Central Financial Assistance (CFA) under the National Bioenergy Programme of the Ministry of New and Renewable Energy (MNRE): Ministry of New and Renewable Energy (MNRE) supports the installation of Bioenergy Projects in the country under National Bioenergy Programme (NBP).

(iii) Crop Residue Management (CRM) Scheme in the States of Punjab, Haryana, Uttar Pradesh, Madhya Pradesh and NCT of Delhi: Ministry of Agriculture & Farmers Welfare (MoA&FW) has implemented a Central Sector Scheme on Crop Residue Management (CRM) w.e.f. 2018-19. Under CRM scheme, Credit Linked Back Ended Subsidy @ 65% is provided on the capital cost of machines for establishment of paddy straw supply chain projects.

(e) : The Government of India have taken several measures to balance power generation needs with environmental sustainability like increasing the share of installed Renewable Energy (RE) capacity & its uptake and promoting energy efficiency in all sphere of life. As on 30.06.2026, the share of non fossil fuel-based installed capacity stands at 297.37 GW, constituting 54.18% of the total installed generation capacity of 548.86 GW. In order to push the share of Renewable Power in the energy mix of the country, Government has taken various steps, as outlined in Annexure.

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ANNEXURE REFERRED IN REPLY TO PART (e) OF UNSTARRED QUESTION NO. 1886 ANSWERED IN THE LOK SABHA ON 30.07.2026

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Steps taken by the Government in order to push the share of Renewable Power in the energy mix of the country are detailed as under:

i. **Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), PM Surya Ghar Muft Bijli Yojana, National Programme on High Efficiency Solar PV Modules, New Solar Power Scheme (for Tribal and PVTG Habitations/Villages) under Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) and Dharti Aabha Janjatiya Gram Utkarsh Abhiyan (DA JGUA), National Green Hydrogen Mission, Viability Gap Funding (VGF) Scheme for Offshore Wind Energy Projects have been launched.**

ii. **Scheme for setting up of Solar Parks and Ultra Mega Solar Power projects has been implemented to provide land and transmission to Renewable Energy (RE) developers for installation of RE projects at large scale.**

iii. **100% Inter State Transmission System (ISTS) charges have been waived for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025 (with waiver tapering off 25% annually till June 2028), for co-located BESS projects commissioned by June 2028, for Hydro PSP projects where construction work awarded by June 2028, for Green Hydrogen Projects commissioned till December 2030 and for offshore wind projects commissioned till December 2032.**

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

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

vi. **To augment transmission infrastructure needed for steep RE trajectory, suitable transmission plan has been prepared.**

vii. **Government of India, in September 2023, approved a Viability Gap Funding (VGF) scheme for development of Battery Energy Storage Systems (BESS) with a budgetary allocation of Rs. 3,760 Cr. under this scheme. Considering the increasing demand of BESS, Ministry of Power, in June 2025, has approved another VGF scheme for development of 30 GWh BESS capacity with a financial support of Rs. 5,400 Cr from Power System Development Fund (PSDF).**

viii. **To boost RE consumption, Renewable Purchase Obligation (RPO) followed by Renewable Consumption Obligation (RCO) trajectory has been notified till 2029-30. The RCO which is applicable to all designated consumers under the Energy Conservation Act 2001 will attract penalties on non-compliance. RCO also includes specified quantum of consumption from Decentralized Renewable Energy sources.**

ix. **"Strategy for Establishment of Offshore Wind Energy Projects" has been issued.**

x. **To achieve the objective of increased domestic production of Solar PV Modules, the Govt. of India has launched the Production Linked Incentive (PLI) scheme for High Efficiency Solar PV Modules.**

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