

GOVERNMENT OF INDIA
MINISTRY OF POWER

RAJYA SABHA
UNSTARRED QUESTION NO.1275
ANSWERED ON 10.03.2025

INSTALLATION OF POLLUTION-CONTROL TECHNOLOGY

1275 SHRI RANDEEP SINGH SURJEWALA:

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

- (a) the instances of extension of deadlines for the installation of pollution-control technology in coal-fired power plants since 2015;
- (b) the reasons for the multiple extensions granted for the installation of pollution-control technology in coal-fired power plants;
- (c) the rationale behind the latest extension of the deadline to 2027 for installing emission-control devices;
- (d) whether it is a fact that the current standards set by Government to curb emissions do not align with international standards, if so, the details thereof; and
- (e) whether Government has taken any action against power plants that have consistently failed to meet pollution-control requirements?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The Ministry of Environment Forest and Climate Change (MoEF&CC) vide Notification dated 07.12.2015 has introduced stack emission standards [for Sulfur Dioxide (SO₂), Oxides of Nitrogen (NO_x), Particulate Matter (PM), Mercury (Hg)] and standards for Water Consumption for the Coal / Lignite based Thermal Power Plants (TPPs). TPPs were required to comply with these emission standards within two years from the date of above Notification.

Further, considering the various techno-economic constraints faced by TPPs in implementation of above emission norms and as also requested by Ministry of Power (MoP); MoEF&CC in 2017 has directed Central Pollution Control Board (CPCB) to direct all TPPs to ensure compliance with the norms laid down in the 07.12.2015 notification by 2022.

The instances of extension of deadlines for the installation of pollution control technology in thermal power plants since 2015 are as under:

1st Extension of Timelines: MoEF&CC vide Notification dated 31.03.2021 categorised all the TPPs in three categories (viz. Category A, B and C) specifying timelines upto December 2022, December 2023 and December 2024 for Category A, B, and C Thermal Power Plants respectively for SO₂ emissions and other than SO₂ emissions (PM, NO_x, Hg). It also included provision for penalty i.e. Environmental Compensation on the non-compliant units.

2nd Extension of Timelines: MoEF&CC vide Notification dated 05.09.2022 further extended the compliance timelines only for SO₂ emissions upto December 2024, December 2025 and December 2026 for Category A, B, and C Thermal Power Plants respectively. It also enhanced the Environmental Compensation (EC) for non-compliant Units of TPPs.

3rd Extension of Timelines: Recently, MoEF&CC vide Notification dated 30.12.2024 further extended the compliance timelines for SO₂ emission upto December 2027, December 2028 and December 2029 for Category A, B and C Thermal Power Plants respectively.

(b) & (c): In order to comply with the MoEF&CC notified emission norms, TPPs are using pollution-control technology such as Electrostatic Precipitator (ESP) for meeting 'Particulate Matter (PM)' emission norms, Flue Gas De-sulfurization (FGD) systems for SO₂ emission norms and Combustion Modification for NO_x emission norms. However, the extension of timelines (mainly 2nd and 3rd) was only for compliance to SO₂ emission norms.

The major issues/challenges faced during implementation of FGD system (for SO₂ compliance) in Thermal Power Plants are as below:

- (i) Till the end of 2015 no SO₂ norms were applicable, thus FGD system manufacturing capacity was almost non-existent in the country. FGD technology being new to our country, there are at present limited vendors with limited capacity to supply and install FGD components. Vendor's capacity for FGD installation is about 16-20 GW per annum (33 to 39 units) in the country and installation time is about 36 to 40 months which has led to mismatch in demand and supply of FGD equipment, leading to escalating costs and delays.
- (ii) During the COVID-19 pandemic, the entire process of planning, tendering and implementation of FGD was badly affected. It has also impacted the supply chain and manpower availability.
- (iii) India had manufacturing capability of 70% FGD components which has now increased to 80% with the passage of time. However, it still depends on the imports from other countries for technology, critical equipment and skilled manpower.

- (iv) The installation of FGD systems is more like a Renovation and Modernisation (R&M) project which has distinguished difficulties in terms of conceptualization and design challenges. Standardization could not be done as different sites have different requirements like space constraints, lay-out and orientation etc.

(d) : The emission standards notified vide notification dated 07.12.2015 (and subsequent amendments issued from time to time) have been prescribed considering various technical aspects, including the domestic coal characteristics, Best Available Techniques (BAT), feasibility for retrofitting of suitable pollution control equipment in existing Thermal Power Plants, including international standards etc.

(e) : In case of non-compliance of emission norms beyond the specified timelines, MoEF&CC vide notification dated 05.09.2022 has prescribed the following Environmental Compensation on the non-retiring Thermal Power Plants:

Non-Compliant operation beyond the Timeline	Environmental Compensation (Rs. Per unit electricity generated)
0-180 days	0.20
181-365 days	0.30
366 days and beyond	0.40
