

**GOVERNMENT OF INDIA
MINISTRY OF POWER**

**LOK SABHA
UNSTARRED QUESTION NO.3728
TO BE ANSWERED ON 09.08.2018**

ENVIRONMENT NORMS

3728. SHRIMATI RITA TARAI:

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

- (a) whether the Ministry of Power is aware about the revised environment norms introduced by the Ministry of Environment, Forest and Climate Change, if so, the details thereof;
- (b) whether meeting with/ implementing the revised modified norms including the need based retro fitting will be time consuming and will have significant impact on the power tariff, if so, the details thereof; and
- (c) whether the Ministry of Power and the Ministry of Environment, Forest and Climate Change are considering to allow exemption from environment up-gradation, if so, the details thereof?

A N S W E R

**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR POWER AND
NEW & RENEWABLE ENERGY**

(SHRI R. K. SINGH)

(a) : Yes, Madam. Ministry of Environment, Forest and Climate Change (MoEF&CC) notified following new environmental norms for Thermal Power Plants (TPPs) on 7th December 2015:

Emission parameter	TPPs (units) installed before 31st December, 2003	TPPs (units) installed after 31st December 2003 and upto 31st December 2016	TPPs (units) to be installed from 1st January 2017
Particulate Matter	100 mg/Nm³	50 mg/Nm³	30 mg/Nm³
Sulphur Dioxide (SO₂)	600 mg/Nm³ for units less than 500MW capacity 200 mg/Nm³ for units 500MW and above capacity	600 mg/Nm³ for units less than 500MW capacity 200 mg/Nm³ for units 500MW and above capacity	100 mg/Nm³
Oxides of Nitrogen (NOx)	600 mg/Nm³	300 mg/Nm³	100 mg/Nm³

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Mercury	0.03 mg/Nm³ (for unit size 500 MW and above)	0.03 mg/Nm³	0.03 mg/Nm³
WATER NORMS	a. All plants with Once Through Cooling (OTC) shall install Cooling Tower (CT) and achieve specific water consumption of 3.5 m³/MWh within 2 years of notification. b. All existing CT based plants shall reduce specific water consumption up-to maximum of 3.5 m³/MWh within a period of 2 years of notification. c. New plants to be installed after 1st January 2017 shall have to meet specific water consumption of 2.5 m³/MWh and achieve zero water discharge.		

Later, MoEF&CC vide Notification dated 28.06.2018 notified following revision in the environment norms:

- I. Specific water consumption shall not exceed maximum of 3.0 m³ /MWh for new plants installed after the 1st January, 2017 and these plants shall also achieve zero waste water discharge.
- II. Water Consumption Limit shall not be applicable for Thermal Power plants using sea water.
- III. Stack Height/Limit in Meters for Thermal Power Plants with wet Flue Gas Desulphurization (FGD) is revised as under:
 - a. 100 MW and above - $6.902 \times (\text{Emission rate of SO}_2 \text{ in kg/hr} \times 0.277)^{0.555}$ or 100 m minimum
 - b. Less than 100 MW - $6.902 \times (\text{Emission rate of SO}_2 \text{ in kg/hr} \times 0.277)^{0.555}$ or 30 m whichever is more”;

(b) : Yes, Madam. Installation of Flue gas Desulphurization (FGD) in a unit takes about 3 years' time from the date of order placement followed by shut down of the unit for a period ranging from 2 to 6 months for making necessary connections depending upon the technology adopted (for e.g. construction of low height chimney / lining of existing chimney etc.) by the TPPs. Further, minimum time of about 6 months is required for bidding and finalization of a tender.

Upgradation/augmentation of Electrostatic Precipitator (ESP) also requires shutdown of the unit ranging from 4 to 6 months. Accordingly, the phasing plan for FGD and ESP in the units where both are required is kept the same, as this will avoid the shutdown of the units twice. This would also help maintain uninterrupted power supply in the country. FGD system can also reduce the PM levels of the flue gas substantially, the requirement of upgradation/augmentation of ESP may not be required in many units subject to the conditions of certain PM level at FGD inlet. This would result in lower expenditure by the utilities and hence will also lower the tariff burden on the consumers.

NOx control measures like combustion optimization, installation of low NOx burners etc. are envisaged to be undertaken during the shutdown to be taken for FGD in order to avoid multiple shut down of the units and to maintain the un-interrupted supply of power in the country.

On the tariff side, meeting with implementing the revised emission norms would have the following impacts:

- I. Additional capital expenditure because of installations to meet the revised norms**
- II. Increase in Operation & Maintenance expenses.**
- III. Increase in Auxiliary Power Consumption of power stations**
- IV. Disruption in power generation during installation phase.**
- V. Fixed cost during shut down period for installation.**

Impact in tariff would depend upon the technology adopted for meeting the norms.

(c) : To comply with the new norms without disrupting power supply situation in the country, a phased implementation plan from 2018 to 2022 for installation of FGD in plants for a capacity of 1,61,402 MW (414 Units) and upgradation of ESP in plants for a capacity of 64,525 MW (222 units) was prepared by Central Electricity Authority (CEA) in consultation with the stakeholders and this plan was submitted to MoEF&CC on 13.10.2017. Based on the directions received from MoEF&CC, the Central Pollution Control Board (CPCB) has issued directions to Thermal Power Plants to ensure compliance.

Government is committed for implementation of new environment norms by Thermal power plants in a phased manner. MOP has recommended MOEF&CC that Units having completed 25 years of operational life and where FGD and emission control is not possible may be allowed to operate for limited number of hours, subject to meeting the efficiency norms to be prescribed by Government, to meet the balancing/peaking requirement to maintain continuous power supply in the grid.
