

**GOVERNMENT OF INDIA
MINISTRY OF POWER
LOK SABHA
UNSTARRED QUESTION NO.688
ANSWERED ON 25.07.2024**

COAL-FIRED ELECTRICITY OUTPUT AND EMISSIONS

688 SHRI ARUN BHARTI:

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

- (a) the details regarding the data on India's coal-fired electricity output and emissions during each of the past five years highlighting the factors contributing to record highs;
- (b) whether the Government has data on the effectiveness of current technologies and practices in reducing emissions from coal-fired power plants including any recent advancements or pilot projects and if so, the details thereof; and
- (c) the measures taken by the Government to abide by the international conventions during the process of coal-fired electricity output?

A N S W E R

THE MINISTER OF STATE IN THE MINISTRY OF POWER

(SHRI SHRIPAD NAIK)

(a) : The details regarding the data on India's coal-fired electricity output and emissions during each of the past five years are given below:

Year	Electricity Generation from Coal (in Billion Units)	CO₂ Emission (in Million Metric Tonnes)
2018-19	987.68	897.28
2019-20	988.72	897.28
2020-21	959.72	867.92
2021-22	951.88	853.82
2022-23	1043.83	943.04

With the rapid expansion & growth of the Indian economy, the demand of electricity is also witnessing an unprecedented growth. The electricity demand in India has witnessed a growth of around 9% for the years 2021-22 and 2022-23. The total emissions have increased commensurate with the increase in generation of the electricity.

However, due to increasing share of Renewable Energy in the Grid, the carbon intensity of the grid is reducing. There is significant decrease of about 9% in average carbon emission factor of the grid electricity in India from 2013-14 to 2022-23.

(b) & (c) : For reduction of emission levels of Thermal Power Plants (TPPs), following measures have been taken by the Government:

- Installation of efficient Ultra Supercritical/Supercritical Units - Promotion of installation of efficient Ultra Supercritical/Supercritical units over Subcritical Thermal Units as these units are more efficient and their emission per unit of electricity generation is less than subcritical units. A total capacity of Supercritical/ Ultra-supercritical units of 65,290 MW (94 Units) and 4,240 MW (06 units) have been commissioned respectively till 30.06.2024.**
- Biomass Co-firing - Ministry of Power has issued a policy on utilization of Biomass for Power generation through co-firing in coal based power plants. The policy mandates 5-7% co-firing of Biomass primarily of agro residue with coal, after assessing the technical feasibility. As of June 2024, 8.14 lakh Tonnes of cumulative Biomass have been co-fired pan India resulting in reduction of about 0.97 Million Tonnes of CO₂ emissions from Thermal Power Plants.**
- Reduction of Stack Emissions - MoEF&CC vide notification dated 07.12.2015 and its subsequent amendments has notified norms in respect of reducing stack emissions such as Suspended Particulate Matter (SPM), SO_x& NO_x from coal based Thermal Power Plants. To meet these standards, Thermal Power Plants are using techniques like Electro Static Precipitator (ESP), Flue Gas Desulphurization (FGD), NO_x Combustion Modification etc.**
- The inefficient and old thermal power plants having capacity of about 18,802.24 MW comprising 267 units have already been retired till 30.06.2024.**
- NTPC Ltd. has commissioned a 20 Tonnes Per Day (TPD) capacity Pilot Carbon Capture Project at Vindhyachal Thermal Power Station.**

India in its Intended Nationally Determined Contributions (INDCs) stands committed to achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. At present India has already achieved 45.5% Installed Capacity from non-fossil fuel-based resources.
