



## Meeting Emission Norms: Coal-based Power Plants

**For Prelims:** Sulfur Dioxide Pollution and its impact, Central Pollution Control Board (CPCB).

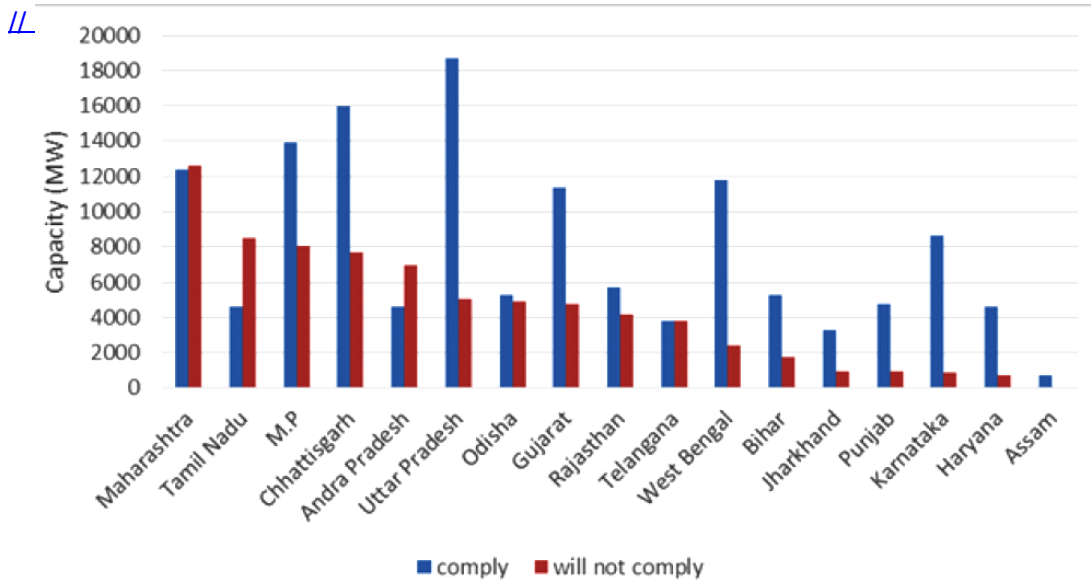
**For Mains:** Need to focus on mitigating the hazards of air pollution in India.

### Why in News

According to the analysis by the **Centre for Science and Environment (CSE)**, a Delhi-based non-profit, **61% of the coal-based power plants** located near million-plus population cities, which have to meet their emission standards by December 2022, will miss their deadlines.

### Key Points

- **Background:**
  - The Ministry of Environment, Forest and Climate Change (MoEF&CC) **had in 2015 set new emission norms** and fixed a deadline to meet it.
  - **India initially had set a 2017 deadline** for thermal power plants to comply with emissions standards for installing **Flue Gas Desulphurization (FGD)** units that cut emissions of toxic sulphur dioxide.
  - This was later changed to **varying deadlines for different regions, ending in 2022.**
- **Categorisation of Power Plants:**
  - **Category A:**
    - The power plants which have to meet the December 2022 target are those which are located within **10 km radius of the National Capital Region (NCR) or cities having million-plus population.**
      - There are 79 coal-based power plants in this category as per a categorisation list of a task force, constituted by the [Central Pollution Control Board \(CPCB\)](#).
  - **Category B and C:**
    - 68 power plants have been put in **Category B (compliance deadline of December 2023)** and 449 in Category C (compliance deadline of December 2024).
      - The power plants which are **located within 10 km radius of critically polluted areas** or non-attainment cities fall under category B while the rest others (75% of total) fall in category C.
- **CSE Analysis:**
  - **Major Defaulters:**
    - Maharashtra, Tamil Nadu, Madhya Pradesh, Chhattisgarh and Andhra Pradesh.
      - These defaulting stations are run largely by the respective state governments.
    - At least 17 Indian states have coal-based thermal power stations. A state-wise comparison highlighted the following:
      - Except for Assam (AS), none of the other states among these 17 will 100% comply with the stipulated deadlines. This state has a 750-megawatt power station that makes it an insignificant per cent of total coal capacity.



### State-run units on the wrong:

- A majority of the **coal thermal power capacity that is likely to meet the norms** belongs to the **central sector followed by the private sector**.
  - Among the plants belonging to the state sector, some have floated the tender or at various stages of a feasibility study or simply have not framed any action plan to date.

### Impact of Penalty Mechanism:

- The **penalty imposed on non-compliant units** will be **more feasible to pay** rather than bearing the legalised cost of retrofit of pollution control equipment (FGD) to meet the new norms.
  - The April 2021 notification also introduced a penalty mechanism or environmental compensation for plants that will not meet the respective deadlines, in addition to revising the deadlines.
- The environmental compensation that will be levied too will **fail to act as deterrence for this expected non-compliance** as it is too meagre as compared to the cost of effective emission control by a coal thermal power plant.

## Sulfur Dioxide Pollution

### Source:

- The largest source of SO<sub>2</sub> in the atmosphere is the **burning of fossil fuels** by power plants and other industrial facilities.
- Smaller sources of SO<sub>2</sub> emissions include: **industrial processes** such as extracting metal from ore, **natural sources** such as volcanoes, and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.

### Impact: SO<sub>2</sub> can affect both health and the environment.

- Short-term exposures** to SO<sub>2</sub> can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO<sub>2</sub>.
- SO<sub>2</sub> emissions that lead to high concentrations of SO<sub>2</sub> in the air generally also lead to the formation of other sulfur oxides (SO<sub>x</sub>). SO<sub>x</sub> can react with other compounds in the atmosphere to form small particles. These particles contribute to **Particulate Matter (PM)** pollution.
  - Small particles may penetrate deeply into the lungs and in sufficient quantities can contribute to health problems.

### India's Case:

- India's sulphur dioxide (SO<sub>2</sub>) emissions** recorded a significant decline of approximately 6% in 2019 compared to 2018, the steepest drop in four years, according to a report from Greenpeace India and the Centre for Research on Energy and Clean Air (CREA).

- However, India remained the **largest emitter of SO<sub>2</sub>**.
- **Air Quality sub-index** has been evolved for eight pollutants (PM10, PM2.5, NO<sub>2</sub>, SO<sub>2</sub>, CO, O<sub>3</sub>, NH<sub>3</sub>, and Pb) for which short-term (upto 24-hours) National Ambient Air Quality Standards are prescribed.

**Source: DTE**

PDF Referenece URL: <https://www.drishtias.com/printpdf/meeting-emission-norms-coal-based-power-plants>