



# What are flue gas desulphurisation units ?

Published On: 15-06-2025

## Context

• On June 4, The Hindu reported that a committee of experts, chaired by **Principal Scientific Advisor (PSA) Ajay Sood**, has **recommended that India do away with a decade long policy of mandating Flue Gas Desulphurisation (FGD) units in all coal-fired thermal power plants (TPPs)**

## Flue Gas Desulphurisation

- Flue gas is emitted as a **byproduct of combustion of fossil fuels**.
- It mainly contains **pollutants such as carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides, particulate matter, etc.**
- **FGD units specifically target the SO<sub>2</sub> emissions** in flue gas.
- SO<sub>2</sub> is an **acidic gas**, and is usually treated with a **basic compound in the FGD unit to neutralise** the pollutant.
- There are **three common types** of FGD systems around the world — **dry sorbent injection, wet limestone treatment, and using sea water** to remove SO<sub>2</sub>.
- The dry sorbent injection method involves adding a **powdered sorbent like limestone** to the flue gas, where it reacts with SO<sub>2</sub>. The resultant compound can be removed by using an **electrostatic precipitator**
- The wet limestone treatment method also uses limestone to remove SO<sub>2</sub>, but instead of using it in a powdered form, it uses a **limestone slurry**.
- Passing SO<sub>2</sub> through this slurry results in the **formation of gypsum**, which is a stable compound and has wide **applications in industries like construction**. This is the commonly used technology, and has **very high efficiency**.
- Sea water treatment is used in **plants located near coastal areas**. Sea water first **absorbs SO<sub>2</sub> from flue gas**, and then the **water is treated to make it suitable to be discharged back into the sea**

## Issue with FGD

- **SO<sub>2</sub> is one of the major greenhouse gases** that cause global warming, and can cause respiratory problems in humans.
- In **2015**, the Union Environment Ministry issued a policy that mandated **all 537 coal-fired TPPs in India to install FGD units to reduce SO<sub>2</sub> emissions**.
- It takes around **two years to install an FGD unit**.
- Installing FGD units is a **costly affair**. According to the Central Electricity Authority, FGD costs approximately **₹1.2 crore per MW to install**.

- As of April 2025, India's installed coal capacity stood at 2,19,338 MW, which is more than 46% of the country's total electricity installed capacity. This is expected to rise in the coming years. In his statement at a June 10 press conference, Union Power Minister Manohar Lal Khattar said, "About 97,000 MW of power will be added, and implementing FGD means an additional expense of ₹97,000 crore.