

India's Revised SO₂ Emission Norms: Why the Government Eased Rules for Power Plants

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Revised SO₂ Emission Norms India Latest News

- The Union Environment Ministry has defended its recent order revising SO₂ emission norms for thermal power plants.
- It clarified that exempting many coal- and lignite-based plants from mandatory **flue gas desulphurization** retrofits was based on evidence, emission trends, and sustainability needs.
- The ministry stated there was no significant difference in ambient SO₂ levels between cities with or without such technology, countering claims of regulatory dilution.

Sulphur dioxide: A Significant Air Pollutant

- Sulphur dioxide (SO₂) is a major air pollutant primarily released from coal-fired power plants and other fossil fuel combustion.

- It poses serious health and environmental risks. As a respiratory irritant, SO₂ can trigger asthma, bronchitis, and other lung diseases.
- It is also a precursor to PM_{2.5}, fine particulate matter linked to heart attacks, strokes, and premature death.
- Beyond human health, SO₂ contributes to acid rain, harming soil quality, aquatic ecosystems, and plant life.
- Its combined direct and indirect effects make SO₂ control vital for public health, environmental protection, and climate resilience.

India and Sulphur Dioxide Emission

- India is the world's largest emitter of sulfur dioxide (SO₂), primarily due to its heavy reliance on coal for power generation.
 - In 2022, India was the world's largest emitter of sulphur dioxide (SO₂), contributing over 20% of global anthropogenic emissions due to its coal-heavy power sector.
 - India topped SO₂ emissions from electricity generation at 6,807 kilotonnes, far ahead of countries like Turkey, Indonesia, South Africa, and Saudi Arabia.
- While SO₂ levels have shown a declining trend, they remain high in certain regions like the Indo-Gangetic Plain, central and eastern India.

The Revised SO₂ Norms

- The Union Environment Ministry has defended its order revising sulphur dioxide (SO₂) emission norms for thermal power plants, countering claims of regulatory dilution.
- The ministry cited research from IIT Delhi, NEERI, and others, noting no major public health concern from current ambient SO₂ levels and highlighting that sulfate aerosols from SO₂ contribute minimally to PM_{2.5} pollution.
- FGD systems, which cut sulphur dioxide (SO₂) emissions from coal plants, were made **mandatory in 2015**.
- Yet, only 8% of India's 180 coal plants have installed them so far, with delays attributed to high costs and limited availability.

Rationale Behind the Policy Shift

- According to the Ministry, India's ambient SO₂ levels have been declining, with 2023 measurements across 492 cities showing compliance in all but two.
- Indian coal naturally has low sulphur content, leading to relatively lower SO₂ emissions.
- Studies have found no major difference in SO₂ concentrations between cities with and without FGD-fitted plants.
- The Ministry noted that eliminating all SO₂ emissions would only marginally improve particulate matter (PM_{2.5}) levels, while retrofitting all plants would cost around ₹2.54 lakh crore — a disproportionately high investment for limited environmental benefit.

Key Highlights of the Revised SO₂ Norms

- **Category A Plants (11% of Total Units):** Located within 10 km of Delhi-NCR or cities with over 1 million population. Must comply with SO₂ norms by end-2027.
- **Category B Plants (11% of Total Units):** Located within 10 km of critically polluted areas or non-compliant cities. Norms apply case-by-case based on expert committee recommendations.
- **Category C Plants (78% of Total Units):** Located outside A and B zones. Fully exempted from SO₂ norms but must meet stack height criteria.
- **Plants Retiring Before 2030:** Exempt from SO₂ norms if they submit an undertaking. Those operating beyond 2030 must pay ₹0.40 per unit as compensation.
- **Scientific Basis:** Revision backed by studies from IIT Delhi, NEERI, and CPCB, showing no significant difference in SO₂ levels between areas with and without FGD retrofits.
- **Cost Consideration:** Estimated ₹2.54 lakh crore required for FGD retrofitting across India, prompting focus on high-impact areas only.

Global Standards Context

- The Ministry also highlighted that India's annual SO₂ standard (50 micrograms/cubic metre) is stricter than those of countries like Japan and Australia.
- Given these factors, the revised norms aim to balance public health priorities with economic and operational realities, focusing regulatory efforts where they are most needed.

Source: TH | IE | CERA

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