

## Global Energy Monitor's Global Coal Mine Tracker (GCMT) Briefing 2026

**Mains:** GS Paper III | Environment

### Why is in news?

According to the latest Global Coal Mine Tracker (GCMT) from Global Energy Monitor (GEM), **Global coal mine pipeline rises 11% to 2,521 Mtpa** (million tonnes per annum)

### What are the Main findings?

- According to the International Energy Agency (IEA), Global coal demand grew by less than 0.5 per cent in 2025 and is expected to plateau through 2030.
- Global coal mine proposals climbed 11% to 2,521 Mtpa in 2025 even as demand plateaued and new mine additions hit a decade low.
- At the same time, **wind and solar generation overtook coal in the global electricity mix for the first time in 2025**, while coal-fired electricity generation fell by 0.6 per cent.
- The report notes that projects already under construction are generally more difficult to halt, but most proposed capacity has not reached that stage and still requires permits, financing and final investment decisions.
- The increase in proposed mining capacity was driven almost entirely by India.
- India nearly doubled its pipeline to 638 Mtpa, while China held at 1,321 Mtpa.
- About 70% of projects remain pre-construction, raising concerns over stranded assets as wind and solar overtake coal in global power generation.
- Five countries, China, India, Australia, Russia and South Africa, accounted for nearly 92 per cent of proposed global coal mining capacity.

### Why India's performance is poor?

- The report attributes the sharp increase largely to Jharkhand and Odisha, where proposed mine projects doubled.
- India's greenfield projects account for 80 per cent of its proposed capacity.
- India's pipeline is almost entirely thermal coal.
- It is accounting for nearly one third of the global thermal coal pipeline and 94 per cent of India's proposed capacity.
- The analysis also highlights ***India's growing push to use coal*** as an industrial feedstock.
- In India, around 90 per cent of its 101 Mtpa late-stage capacity consists of surface mines, which can generally be brought into operation more quickly.

### **What is India's Coal gasification Plan?**

- The government's ***National Coal Gasification Mission***, launched in 2021, set a target of gasifying 100 million tonnes of coal per annum by 2030 to reduce dependence on imported liquefied natural gas, urea, ammonia and methanol.
- Indian coal generally has high ash content, making gasification more difficult and costly than using lower ash coal.
- Large-scale coal gasification projects also require substantial capital and typically take five to eight years to build.

### **What about Future path?**

- Around three quarters of the global proposed coal mining capacity consists of new greenfield mines.
- Thermal coal proposals dominate the global pipeline.
- Coal mining capacity additions fell by 44 per cent in China and 96 per cent in Australia in 2025.
- China's decline was partly due to the growing contribution of solar and wind to electricity generation, alongside tighter safety inspections and approvals for capacity expansions.
- China and India are the world's two largest coal producers.
- They report very limited operating capacity scheduled for retirement before 2035.

### **Why there are Methane monitoring gaps?**

- The report also identifies ***major gaps in coal mine methane monitoring***.

- No country currently requires direct monitoring of methane emissions from surface mines.
- The report cites evidence that individual surface mines can be major methane emitters.
- In India, operators are allowed to vent methane drained during mine construction directly into the atmosphere without mitigation.
- China and New South Wales in Australia have recently introduced legislation requiring or incentivizing coal mine methane utilization.



# MAJOR GAPS IN COAL MINE METHANE MONITORING

Accurate monitoring is critical for miner safety, emission reduction and climate goals



## WHY IT MATTERS



Methane (CH<sub>4</sub>) is highly flammable and a major cause of coal mine explosions.



Methane is a potent greenhouse gas – ~28–34 times more powerful than CO<sub>2</sub> over 100 years.



Accurate monitoring ensures miner safety, regulatory compliance and effective mitigation.



India aims to reduce methane emissions from coal mines under NDC and Global Methane Pledge.

## MAJOR GAPS



### 1. INADEQUATE SPATIAL COVERAGE

- Monitoring stations are limited to active workings and major return airways.
- Blind zones in goafs, sealed areas, old workings, longwall faces and small mines.

#### Impact:

Undetected methane build-up in high-risk zones; delayed response.



### 2. LOW TEMPORAL RESOLUTION

- Monitoring is often intermittent (few times a day or shift). Real-time, continuous data capture is rare.
- Cannot capture sudden spikes or rapid changes.

#### Impact:

Missed methane surges; higher risk of explosions.



### 3. INSTRUMENTATION & CALIBRATION ISSUES

- Use of low-accuracy sensors with drift and cross-sensitivity.
- Irregular calibration and lack of traceability to standards.

#### Impact:

Inaccurate readings; false alarms or failure to detect hazardous levels.



### 4. DATA TRANSMISSION & CONNECTIVITY GAPS

- Poor underground connectivity in many mines.
- Data loss, delays and gaps in real-time transmission to surface.

#### Impact:

Delayed decision-making; weak situational awareness.



### 5. DATA INTEGRATION & MANAGEMENT DEFICITS

- Siloed systems; lack of centralized platforms.
- Poor data quality, lack of validation, and limited historical analysis.

#### Impact:

Inability to identify trends, predict risks or evaluate mitigation effectiveness.



### 6. CAPACITY & TRAINING GAPS

- Shortage of trained personnel in monitoring and data interpretation.
- Limited awareness of best practices and standards.

#### Impact:

Improper monitoring, incorrect interpretation and weak compliance.



### 7. REGULATORY & STANDARDIZATION GAPS

- Variability in implementation of standards.
- Lack of uniform protocols for sensor placement, reporting and data retention.

#### Impact:

Inconsistent monitoring quality; difficult benchmarking and enforcement.



### 8. LIMITED MONITORING OF VENTILATION & MITIGATION IMPACT

- Poor linkage of methane data with ventilation parameters and mitigation systems.
- Hard to assess effectiveness of control measures (e.g., drainage, VAM).

#### Impact:

Sub-optimal control measures; higher emissions and safety risks.

## WHAT NEEDS TO IMPROVE



Expand spatial coverage (including goafs & old workings)



Ensure real-time, continuous monitoring



Use high-accuracy sensors; ensure regular calibration



Strengthen connectivity and real-time data transmission



Build integrated data platforms with analytics and trend analysis



Build capacity and standardize protocols



**THE GOAL:** Comprehensive, accurate and timely methane monitoring for safer mines, lower emissions and a cleaner energy future.



## Reference

[Down to Earth | Global coal mine pipeline rises](#)

