

5. Methane 2025 Report – Reports

The United Nations Environment Programme (UNEP) has released its report, “An Eye on Methane 2025 – From measurement to momentum.”

Global Methane Report – Overview

1. Launch and Purpose

Launch Year – 2021

Published by – UNEP’s International Methane Emissions Observatory (IMEO) under the United Nations Environment Programme (UNEP).

Objective –

1. Provide transparent, science-based data on global methane emissions.
2. Monitor progress in mitigation and highlight gaps in action.
3. Promote the Measurement-Reporting-Verification (MRV) framework for robust tracking.

Focus Areas –

1. Methane sources – Oil & gas, agriculture, waste.
2. Real-time monitoring via Methane Alert and Response System (MARS).
3. Support global initiatives like Oil and Gas Methane Partnership (OGMP 2.0).

2. Key Platforms and Partnerships

a. Oil and Gas Methane Partnership (OGMP 2.0)

Voluntary initiative for oil and gas companies to transparently measure, report, and reduce methane emissions.

Global Coverage – 153 companies across 90 countries, covering 42% of global oil and gas production.

Framework – Five-level MRV system ensuring accurate and consistent emission data.

Recognized as the “gold standard” for methane emissions reporting.

b. Methane Alert and Response System (MARS)

Launched at COP27 (2022) by IMEO.

Purpose – Detect, verify, and enable rapid mitigation of major methane leaks using satellite-based monitoring.

Mechanism –

1. Integrates satellite and real-world monitoring.
2. Issues alerts to governments and operators for swift action.

Significance – First global methane alert system enhancing transparency, accountability, and rapid response.

3. Key Findings from the Global Methane Report

a. Detection vs. Action

Methane detection capacity has increased tenfold, mainly due to satellites and advanced sensors.

“Super-emitter events” – Large, localized methane leaks are often detected but largely remain unaddressed. ~90% of detected events have no follow-up mitigation. MARS has issued 3,500+ alerts since 2022 across 33 countries. Follow-up actions have increased from 1% to 12% in one year, yet most events go unattended, highlighting a critical gap between detection and action.

b. Global Methane Pledge

Launched by – United States and European Union at COP26 (Glasgow, 2021).

Objective – Reduce global methane emissions by 30% by 2030 from 2020 levels.

Climate Impact – Methane is 80 times more potent than CO₂ over a 20-year period. Short atmospheric lifespan (~9–12 years) allows for rapid climate benefits if reduced. Described as a “climate emergency brake” because cutting methane can slow near-term warming quickly.

c. Progress in Measurement and Monitoring

Oil and gas emissions – One-third are now tracked using real-world measurements rather than outdated estimation-based inventories.

OGMP 2.0 participation – First-time inclusion of Indian companies committing to measurement-based methane reporting. Highlights the shift from theoretical modeling to direct monitoring for accountability.

4. Methane – Science and Sources

a. Nature and Climate Impact

Chemical Formula – CH_4

Potency – 80x more effective than CO_2 in trapping heat over 20 years.

Contribution – ~30% of current global warming, second only to CO_2 .

Atmospheric Lifetime – 9–12 years – much shorter than CO_2 , allowing rapid climate impact reduction.

b. Major Human-Caused Sources

Agriculture – Livestock (enteric fermentation), rice paddies.

Fossil Fuels – Oil and gas extraction, coal mining, and gas flaring.

Waste – Landfills, waste decomposition, and unmanaged solid waste.

5. India's Initiatives to Reduce Methane Emissions

a. Agricultural Measures

National Mission for Sustainable Agriculture (NMSA) under **NAPCC** promotes – Alternate Wetting and Drying (AWD) in rice fields to reduce methane emissions. Sustainable fertilizer practices.

b. Waste Management

Swachh Bharat Mission & Solid Waste Management Rules (2016) – Promote biogas production, composting, and landfill management. Reduction of methane from organic waste decomposition.

c. Energy Sector Measures

PNGRB Guidelines – Encourage leak detection, reduction of gas flaring, and monitoring in oil & gas operations.

SATAT Scheme – Expanding compressed biogas (CBG) and biogas for sustainable, low-methane energy.

d. Global Methane Pledge – India has not formally joined the pledge but addresses methane reduction through domestic policy and industry action.

6. Policy and Strategic Implications

Methane mitigation is a short-term climate intervention that can complement CO_2 reduction strategies.

Challenges – Detection is improving, but follow-up action and regulatory enforcement remain insufficient globally.

India's focus on agriculture and waste sectors aligns with national priorities, but scaling requires –

1. Investment in MRV systems.
2. Strengthening policy enforcement and incentives for private sector compliance.
3. Integrating methane reduction into renewable energy transition.

7. Conclusion

The UNEP Methane Assessment emphasizes the urgency of translating detection into mitigation. Methane reduction is crucial for limiting near-term warming, serving as an effective climate emergency brake. India, being a top methane emitter, is gradually adopting measurement-based mitigation strategies. International collaboration, domestic policy action, and technological adoption are key to achieving sustainable methane reduction.

Source – <https://www.downtoearth.org.in/energy/plug-the-leaks-unep-warns-90-of-methane-alerts-still-ignored>