# ASSESSING CURRENT COAL MINE METHANE EMISSIONS QUANTIFICATION LITERATURE TO INFORM FUTURE STUDIES

A desktop study to initiate IMEO's subsequent empirical data collection on coal mine methane.



DONOR:
**European Commission**

BENEFITTING COUNTRIES OR REGIONS:
**Worldwide**

SECTOR:
**Coal**

Subsector, if applicable:
**—**

STATUS: **Published**

TIMELINE: **Latest study report 2022**

IMEO SCIENCE OBJECTIVE: → **Advance science studies in support of countries targeting methane mitigation.**

## KEY FINDINGS

China leads the world in estimated coal mine methane emissions. Underground coal mines account for nearly 70% of global Coal Mine Methane (CMM) emissions. Mitigation is possible through drainage and ventilation air. The main variables which affect gas emission rates in coal mining are in-situ gas content of coal seams, strength and reservoir properties of the strata surrounding longwall districts, working depth, panel dimensions, face advance rate and district age. Accounting for coal mine methane emissions is complicated and conducted in variable ways around the world.

## RATIONALE

The study assesses current literature and data on coal mine methane emissions as a foundation for future measurement-based studies of the sector. This study provides a state-of-the-art understanding of coal mine methane emissions with focus upon sources, mitigation approaches, monitoring and emissions quantification.

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For more information, please contact imeo@un.org

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## RELATED PUBLICATIONS

► *A report is posted on IMEO's website (UNEP 2022)*

## CATALYZING ACTION

This report helped design UNEP IMEO's first empirical coal mine methane studies including study approaches and locations, which are currently in progress. A more detailed peer-reviewed literature review building on this report is also being finalized.

## SIGNIFICANCE FOR DECISIONMAKERS

The findings will inform future study of coal mine methane emissions by UNEP's IMEO.

## OTHER SUPPORTERS/STAKEHOLDERS

Principal Investigator: **Environmental Defense Fund, US supported by Imperial College of Science, Technology and Medicine UK**

Revision History: **29 October 2024**

## STUDY APPROACH/ACTIVITIES

Desktop study to establish current research gaps.

The UN Environment Programme's International Methane Emissions Observatory (IMEO) exists to provide open, reliable, and actionable data to the individuals with the agency to reduce methane emissions. IMEO does this by integrating and reconciling data across sources, including its global methane science studies. IMEO supports measurement and research studies around the world to close the knowledge gap on methane emissions and provide policy-relevant insights to decisionmakers.

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