

## Mandate

The Committee on Sustainable Energy (CSE) established a task force comprised of representatives of the Groups of Expert on Gas and on Coal Mine Methane as well as other stakeholders to undertake work to assess baseline, benchmarking and scale of current methane emissions in the extractive industries.



## Scope and objective

The objective of the UNECE activity in this field is to explore methane management methods and technologies along the value chain in key energy-related extractive industries, namely coal, natural gas and oil, for the purpose of determine and promote the most efficient methods of measuring, reporting, and verification (MRV) of methane emissions in these industries, and developing best practices for preventing such emissions.

UNECE's work to identify best practices in managing methane emissions from energy-related extractive activities can make an important near-term contribution to mitigating climate change and attaining the 2030 Agenda for Sustainable Development.

## Structure

UNECE work on methane management is structured along four subject-specific pillars: Coal, Downstream Oil, Downstream Gas, and Upstream Oil and Gas. Activities under these pillars are conducted by subsidiary bodies of CSE, as well as by UNECE external partners.

ECONOMIC COMMISSION FOR EUROPE

# METHANE MANAGEMENT



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## Methane

Methane is a powerful greenhouse gas with a global warming potential much higher than that of CO<sub>2</sub>.

Measured over a 20-year period, methane is 84 times more potent as a greenhouse gas than CO<sub>2</sub>.

About 60% of global methane emissions are due to human activities.

The main sources of anthropogenic methane emissions are the oil and gas industries, agriculture, landfills, wastewater treatment, and emissions from coal mines.

Managing methane is both a challenge and an opportunity for delivering on the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change.

## Coal

Mining operations release the methane trapped under pressure in the coal seam and in the surrounding rock strata. Methane is emitted from active underground and surface mines as well as from abandoned mines and undeveloped coal seams.

## Gas

Methane, the primary component of natural gas, can be lost to the atmosphere during the production, processing, storage, transmission, distribution, and use of natural gas. According to estimates, around 3% of total worldwide natural gas production is lost annually to venting, leakage, and flaring, resulting in substantial economic losses and environmental impacts.

## Oil

The geological formation of oil can create large methane deposits that are released during drilling and extraction.

The production, refinement, transportation and storage of oil are all significant sources of methane emissions, as is also its incomplete combustion.

## Fossil Fuel Combustion

No combustion process is perfectly efficient. Methane can be emitted when fossil fuels are used to generate electricity and heat, or to power vehicles.

### The challenge

Technologies for detecting and quantifying methane emissions are available, and there is a range of national/regional methods for reporting them.

However, the technology deployed, the programmes for their applications, and the approaches to recording emissions are not harmonized.

It is often complicated to make comparisons of the data.

On a global scale, there is neither a common technological approach to monitoring and recording methane emissions, nor a standard method for reporting and verifying them.

Consequently, the level of uncertainty with regard to available data is very high.

## Cooperation

UNECE has established partnerships across the energy sector. Memoranda of Understanding (MOU) have been signed with the International Gas Union (IGU) and the World Coal Association (WCA). There are ongoing discussions with additional partners and new agreements may be developed.

## Best Practice Guidance

The rationale for developing a comprehensive set of best practices is to provide a clear guidance to policymakers, regulators and practitioners operating in the targeted industries. The final outcome will comprise of the series of documents identifying best measures and practices for MRV and remediation of methane emissions in each of the project's four pillars.

## Survey

UNECE in consultation with IGU, WCA, and other industry experts, prepared and conducted a survey on current practices in monitoring methane emissions. Its results highlighted a need for further work on the issue. While the survey revealed that methane management has been gradually attracting attention and that information regarding methane emissions has improved, the essential conclusions remained unchanged: data collection is neither rigorous nor comprehensive; estimates are not verified; and the procedures for MRV and remediation are variable.

## Project on Oil and Gas

The project on oil and gas focuses on two pillars: Upstream Oil and Gas, Downstream Gas. Its objective is to increase capacity of UNECE member States in MRV and reduction of methane emissions in the industries in question. The project supports the implementation by member States of the Sustainable Development Goals (SDG) and, in particular, SDGs #3, 7, 8, 9, 12, and 13.