

## COAL MINE METHANE

A readily available and cost-effective solution to minimize the carbon footprint of the mining sector

### Methane

Methane is the second most important greenhouse gas. Managing methane from extractive activities can make a significant contribution to attaining the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change.

### Anthropogenic Sources of Methane

Among the anthropogenic sources of methane, agriculture and energy production from fossil fuels are particularly significant. In terms of volumes of emissions, livestock industries rank first, followed by landfills, the oil and gas sector, and then coal mines.

### What is Coal Mine Methane (CMM)?

Methane trapped under pressure in the coal seam and the surrounding rock strata is released during coal extraction activities – this is known as coal mine methane (CMM). In order to minimize the risk of explosions and to ensure the safety of the underground personnel, released CMM should be removed from the mine through ventilation and, if necessary, a drainage system.



Sustainable Energy Division  
Economic Commission for Europe

E-mail: [cmm.energy@un.org](mailto:cmm.energy@un.org)  
Web: [www.unece.org/energy/se/cmm.html](http://www.unece.org/energy/se/cmm.html)



## Group of Experts on Coal Mine Methane

The UNECE Group of Experts on Coal Mine Methane is a subsidiary body of the Committee on Sustainable Energy. It works on development and dissemination of best practices for the effective drainage of methane in coal mines, as well as the economically viable and socially responsible use or destruction of the captured gas.

## International Centres of Excellence on CMM

In order to efficiently implement ECOSOC Decision 2011/222, the Group of Experts decided to establish - under the auspices of UNECE and in partnership with the local specialized entities - a worldwide network of International Centres of Excellence on Coal Mine Methane. These Centres, currently operating in Poland and China, serve as depositories of knowledge and active promoters of best practices developed by the Group. More Centres will follow.

International Centre on CMM in Poland. Opening. 2017.



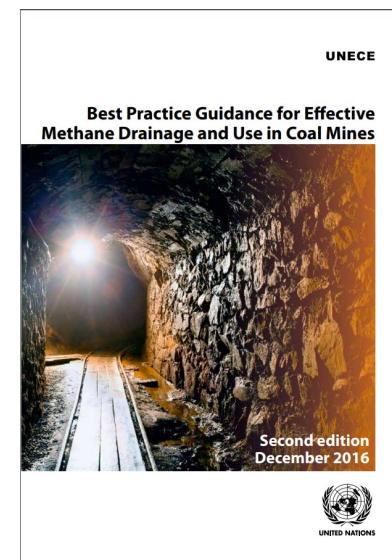
## Benefits

Capture and use of methane from coal mines represents one of the most effective near-term options to minimize the carbon footprint of the mining sector. It not only mitigates climate change, but also delivers other important co-benefits, including:

- enhancement of mine safety and productivity
- localized energy production
- improvement in local and regional air quality.
- In addition, CMM projects can result in positive cash flows to the mine and serve as a catalyst for investment.

## Abandoned Mine Methane (AMM)

Following mine closure, methane emissions decrease, but do not stop completely. They initially decline, but can later stabilize and maintain a near-constant rate for an extended period of time. Proper management of abandoned mine methane (AMM) will help mitigate climate change. While traditionally focused on active coal mines, the Group of Experts recognizes that methane emissions persist throughout the whole coal-mining life cycle, and stands ready to contribute its experience and expertise to working on AMM. The Group has developed Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines, which is to be released in 2019.



The UNECE Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines, developed by the Group of Experts in 2010 and updated in 2017, outlines knowledge-based principles and standards on CMM capture and use. It also contains case studies demonstrating the positive impacts of application of these principles in operating mines around the world.

Since its first publication, it has been translated into nine languages and disseminated among all major stakeholders operating in the coal mining industry.

In 2011, the Economic and Social Council of the United Nations (ECOSOC) invited the United Nations Member States, International Organizations and the Regional Commissions to take appropriate measures to ensure the application of the Best Practice Guidance in countries worldwide (ECOSOC Decision 2011/222).