

AN INTRODUCTION: *BEST PRACTICE GUIDANCE FOR EFFECTIVE METHANE DRAINAGE AND RECOVERY IN COAL MINES*

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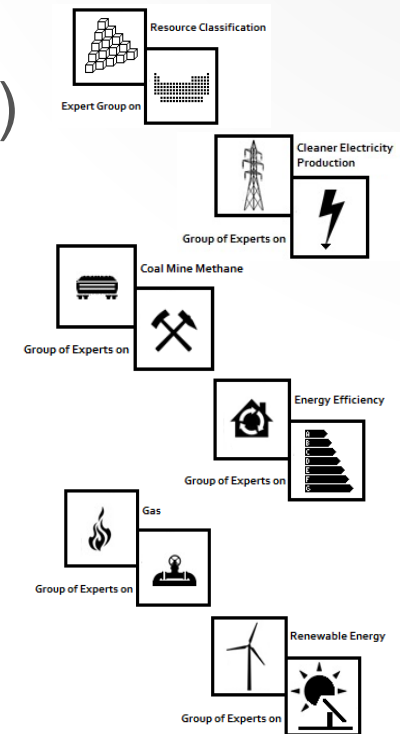
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WORKSHOP ON BEST PRACTICES IN COAL MINE METHANE CAPTURE AND UTILIZATION



THE GROUP OF EXPERTS ON CMM IS ONE OF 6 EXPERT GROUPS THAT CONVENE UNDER THE COMMITTEE ON SUSTAINABLE ENERGY

- Expert Group on Resource Classification (EGRC)
- Group of Experts on Cleaner Electricity Production (CEP)
- Group of Experts on Coal Mine Methane (CMM)
- Group of Experts on Energy Efficiency (GEEE)
- Group of Experts on Gas (GEG)
- Group of Experts on Renewable Energy (GERE)



BEST PRACTICES FOR CAPTURE, USE OR DESTRUCTION OF METHANE LIBERATED BY MINING ACTIVITIES

- Methods or techniques that are common practices are considered Best Practices when the outcomes of employing these practices are superior to results achieved by using alternative practices.
- There is tremendous global industry knowledge about and experience with managing methane explosion risks
- There is a rapidly growing knowledge base and significant R&D efforts to cost-effectively reduce emissions of CMM to the atmosphere
- Practices that reduce fugitive emissions, make mines safer, and use coal related gases in a beneficial way have been employed at many mines in several coal producing countries

THE COAL MINING INDUSTRY RECOGNIZES BEST PRACTICES FOR CAPTURE AND USE OF CMM

- These practices are explained in “*Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines*”
- First published in 2010 and revised and published in 2016
http://www.unece.org/fileadmin/DAM/energy/cmm/docs/BPG_2017.pdf
- Lead Organisations:
 - Global Methane Initiative, formerly Methane to Markets Partnership
 - UN Economic Commission for Europe Secretariat
 - UN Economic Commission for Europe Group of Experts on Coal Mine Methane
 - US Environmental Protection Agency

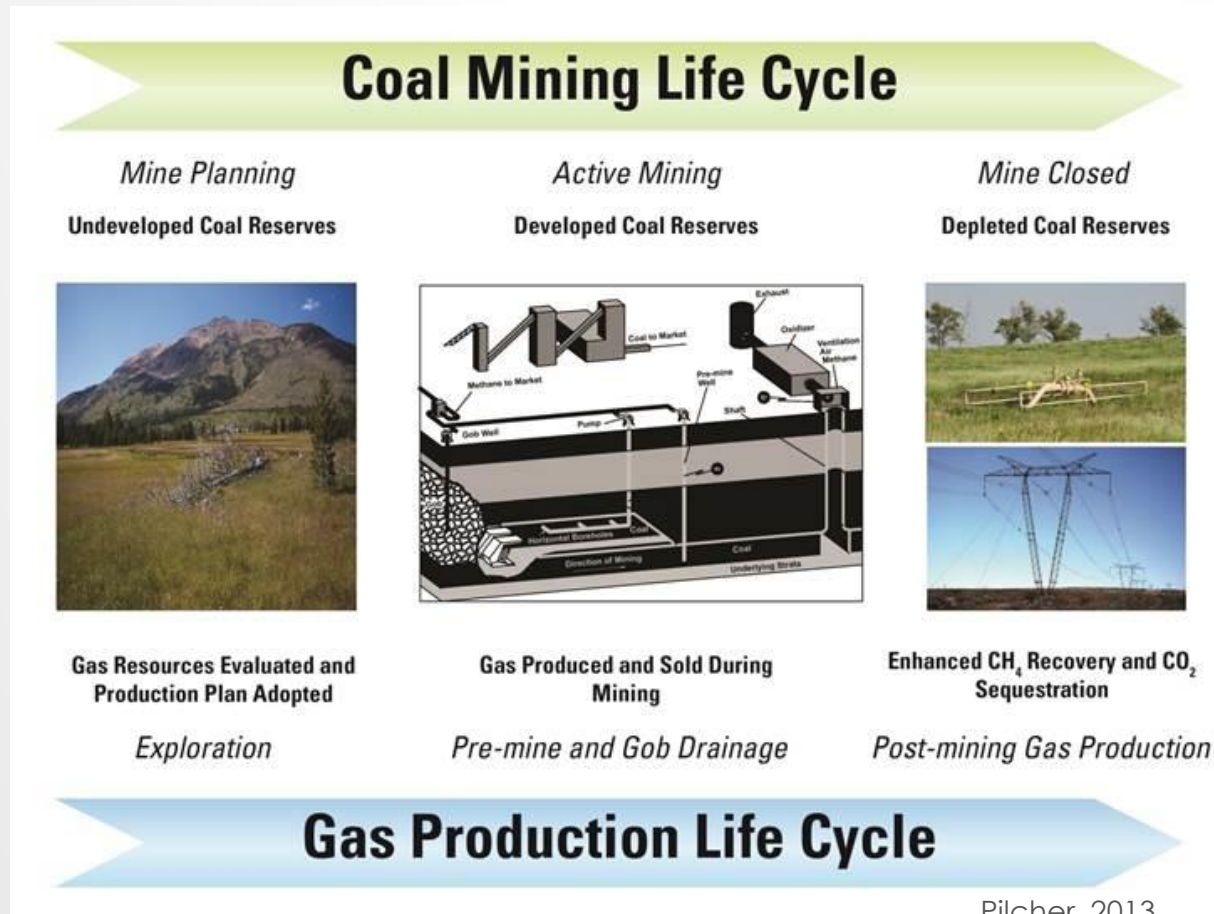
“BEST PRACTICE GUIDANCE FOR EFFECTIVE METHANE DRAINAGE AND USE IN COAL MINES” — A LIVING DOCUMENT

- Technical input and editorial oversight from an international team of experts and stakeholders
- Provides background and basis for ongoing work and technical workshops that are held in various countries over the next years
- Will be the guiding document for the International Centres of Excellence on Coal Mine Methane opened June 2017 at Katowice, Poland; and in September 2017 in Shanxi Province, People’s Republic of China

OBJECTIVES OF THE BEST PRACTICE GUIDANCE

- Complement bilateral and multilateral initiatives to support improved mine safety
- Develop a guidance that is principle based that can be adapted to varying mining conditions
- Provide for industry a standard set of recommended principles and standards for methane recovery and utilisation
- Contribute to assisting UN member states achieve sustainable development goals
- Intended audience: mine operators, regulators, government officials and technical professionals

COAL-ASSOCIATED GAS RESOURCES AND THE COAL MINING LIFE CYCLE



Pilcher, 2013



KEY MESSAGES FOUND IN THE BEST PRACTICE GUIDANCE

- There is tremendous global industry knowledge about and experience with managing methane explosion risks.
- Regardless of constraints, mine worker safety is paramount and should not be compromised.
- A risk assessment approach to minimizing explosion risks should be combined with strong enforcement of robust ventilation and utilization safety regulations.

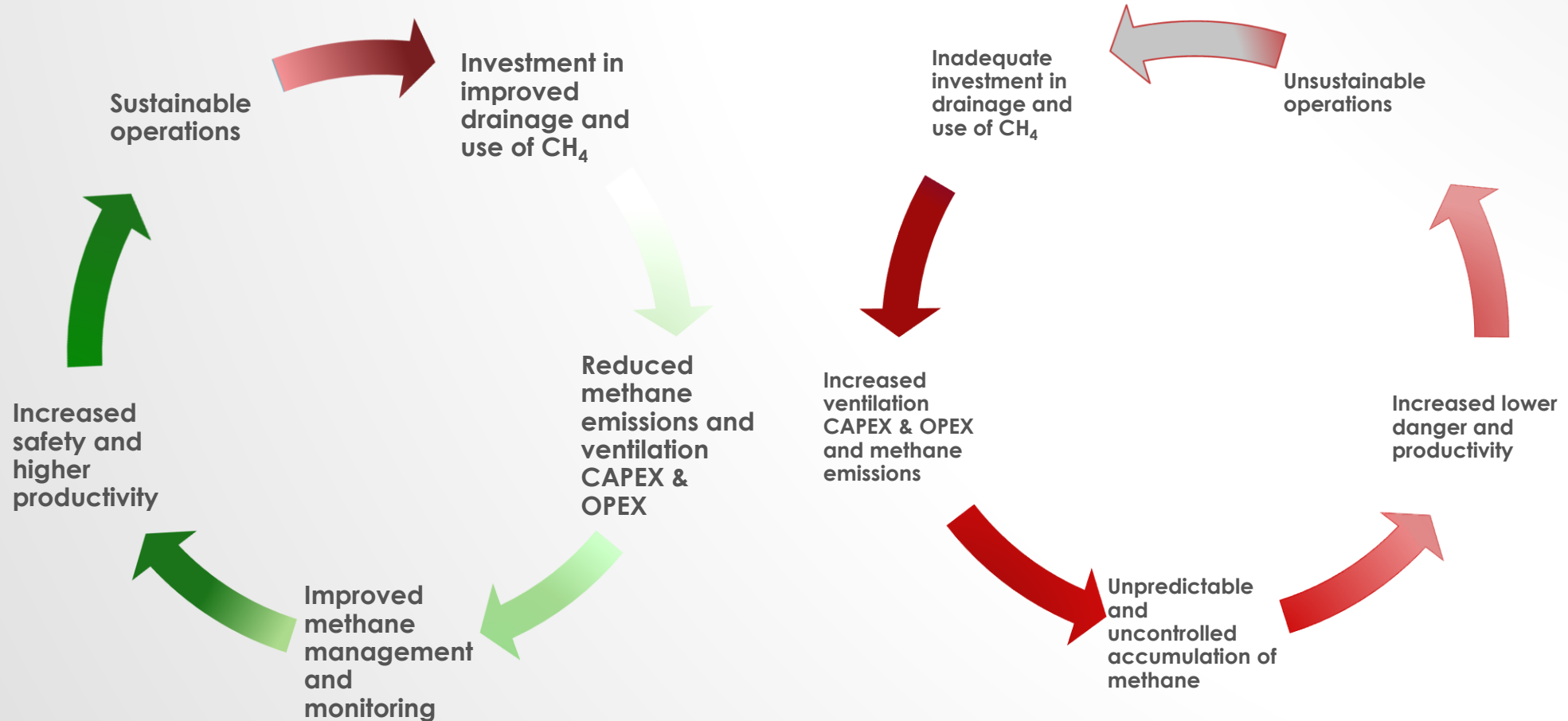
KEY MESSAGES FOUND IN THE BEST PRACTICE GUIDANCE

- Mine ventilation systems are critical components of an overall system to effectively remove methane from mine workings.
- Improvements to methane drainage systems can often provide a more rapid and cost-effective solution to mine gas problems than simply increasing the mine's air supply.
- Transporting methane-air mixtures at concentrations in or near the explosive range in coal mines is a dangerous practice and should be prohibited.

KEY MESSAGES FOUND IN THE BEST PRACTICE GUIDANCE

- Underground coal mines are a significant source of anthropogenic methane emissions (about 6% of human-related global methane), but these emissions can be substantially reduced through implementation of best practices.
- There is a strong business case for installing and operating high-efficiency gas drainage systems and utilising the captured gas.

WHY IMPLEMENT BEST PRACTICES? THE VIRTUOUS CYCLE VERSUS THE VICIOUS SPIRAL



FUTURE PROJECTS

- The GoE CMM has presented to the CSE Bureau and member states that the cross-cutting work that the subsidiary bodies undertake could be enhanced through greater cooperation among the expert groups
- Will propose a project where each of the subsidiary bodies will participate in reviewing and redesigning the future of an important but aging industrial complexes – where raw materials are extracted, refined, and used in an interrelated concentrated industrial ecosystem. Need host country and sponsors.
- Developing a plan for best practice guidance related to coal mine abandonment and abandoned mine methane as a part of guidance for methane management throughout the coal mining life cycle
- Will continue developing workshops and other forms of out reach, focused on the methane management needs of the coal mining sector

TODAY'S PRESENTATIONS— EXAMPLES OF BEST PRACTICES AND PRINCIPLES

- Presentations by experts with diverse backgrounds and perspectives
- All will talk about opportunities to capture and use CMM which are presented to mine operators at various stages in the life cycle of coal mining
- Each speaker has a persuasive argument for considering implementation of an innovative approach to various aspects of assessing co-located coal and gas resources, drilling, producing, and capturing methane that would otherwise be a lost, and using this undervalued resource to benefit the coal mine and the environment

CONTACT INFORMATION

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