



Coal Mining

Methane gas released from coal mining activities can be captured and used as a clean energy source, resulting in reduced GHG emissions, improved air quality, and enhanced mine safety. The United States is a global leader in recovery of coal mine methane (CMM) and continues to work with international Partners to share information, expertise, and technology to promote CMM project development. Some key U.S. activities and highlights in the coal mine sector follow.

Information Centers in India and China

One barrier to developing effective CMM recovery and use projects is lack of information on coal mines, common mining practices, and project opportunities. To assist project developers in overcoming this barrier, the United States has helped to establish information centers in India and China:



- EPA signed a Memorandum of Understanding with the Government of India to establish an information clearinghouse in India. Managed by India's Ministry of Coal and the Ministry of Petroleum and Natural Gas, the clearinghouse will promote the development of CMM projects and make CMM resources publicly available.
- EPA continues to support the development of the Coal Mine/Coalbed Methane Clearinghouse in China, housed at the China Coal Information Institute. EPA also provides funding, in-country technical and regulatory expertise, and consulting services for project developers and investors focusing on developing CMM project pre-feasibility studies.

Laying Foundations for Project Development

EPA is supporting numerous project development opportunities in collaboration with the government of China, such as:

- Continuing its work with the Asia Development Bank to develop two large-scale CMM projects in the Shanxi region of China.
- Bringing a delegation from Jincheng, China, to the United States to attend the

2007 International Coalbed Methane Symposium in Alabama and a tailored training program on advanced CMM drilling techniques in Maryland.

- Working with the Guizhou International Cooperation Center for Environmental Protection in Guizhou Province to conduct outreach to small and medium coal mines with significant methane emissions and resources. The goal of this effort is to overcome the information and communication barriers that many projects face and to ultimately connect viable CMM project sites with the international project development community.

Pre-feasibility and Feasibility Studies

EPA is funding CMM pre-feasibility and feasibility studies in conjunction with partners in several Methane to Markets countries. These studies are important because they provide information that can lead to more rapid implementation of projects at the study sites while also facilitating project development at additional locations. These studies include:

- The Mitigation and Utilization of Diluted Mine Methane by Using a Monolithic Catalytic Combustor at Tiefa, China
- The Quantification of Ventilation Air Methane Emissions From Two Gassy Underground Coal Mines in India
- Electricity Generation Utilizing Coal Mine Methane From a Nigerian Coal Mine
- A CMM and CBM Recovery and High BTU Monetization Technology Transfer Demonstration Project in the Sabinas Coal Basin of Coahuila, Mexico



Leveraging U.S. Assistance

Many U.S. government activities in the coal sector are leveraging technical and financial resources to generate additional funding commitments from other international agencies:

- EPA supplied a \$140,000 grant to the United Nations Economic Commission for Europe to address financial barriers in the development, promotion, and sale of CMM recovery and use in Russia and Eastern Europe. These activities are attracting investor interest in CMM projects in the region as well as helping mine owners identify international investment funding for their CMM projects.
- EPA is funding a series of technical workshops in Ukraine to educate the coal industry about options for utilizing recovered methane gas in profitable and efficient ways. This activity builds on USAID grant funding totaling \$3 million over two years for improved recovery of methane at coal mines by procuring and installing modern drilling equipment and providing training focused on drilling techniques and theory.

Developing Information Resources

EPA has developed critical information resources to enable key parties—from project developers to technology vendors—to get involved in the CMM industry and support CMM project development.

- *Coal Mine Methane Global Overview*. This study contains individual, comprehensive profiles of the coal and CMM sectors of 32 countries—18 Methane to Markets Partner Countries and an additional 14 coal-producing nations. In addition, an introduction section provides summary tables and statistics on coal reserves, coal production, methane emissions, and CMM project activity. This document is available for free on the Methane to Markets Web site at www.methanetomarkets.org/resources/coalmines and will be updated annually.
- *International Coal Mine Methane Projects Database*. This Web-based database contains information on more than 200 CMM recovery and utilization projects operating, in development, or planned around the



world in both Methane to Markets Partner Countries and elsewhere. EPA will enhance the database over time so that the information is searchable and can be exported into spreadsheet format. It is currently housed on the Methane to Markets Web site.

EPA has developed white papers and other documents to address barriers to CMM project development around the world. Current and planned white paper topics include flaring safety and policy, coal and gas resource ownership regulations, and ventilation air methane utilization safety and policy.

