



Coal Mining

Methane gas released due to coal mining can be captured and used as a clean energy source, yielding significant energy, environmental, and mine safety benefits. The United States remains a global leader in the CBM and CMM sector and is working with partners to share expertise, information, and technology to advance project development. Some key U.S. activities and highlights in the coal mine sector include:

Coal Mine Safety and Emission Reductions in Ukraine

USAID provided \$1.5 million in funding to the Partnership for Energy and Environmental Reform (PEER)—a non-governmental organization—and REI Drilling—a U.S.-based drilling company—to implement the Coal Mine Safety Program. PEER and REI purchased a U.S.-manufactured horizontal drill for use at two Ukrainian mines to demonstrate safe drilling techniques and to train Ukrainian crews on how to maintain and operate such equipment. After the training, the drill will remain in Ukraine and will be used to drill drainage holes at other mines in the country. The program is being managed by the U.S. Department of Labor and counterparts in Ukraine, including the Ministry of

Coal, the State Committee on Labor Safety, and selected mines. This project is expected to yield potential emission reductions equivalent to 100,000 MT CO_2E per year and contribute to increased coal mine safety and decreased coal mine mortality.



UNECE Project to Facilitate Project Financing

EPA initiated a 3-year project with the United Nations Economic Commission for Europe to address financial barriers in the development, promotion, and sale of CMM recovery and use projects in Eastern Europe. Beginning in Russia, sector experts will organize workshops and provide support to coal mine staff to develop bankable documents and project-specific business


plans to encourage investor interest in several mines. The workshops will provide a model to be replicated in countries throughout the region.

Technology Transfer in China and India

China has some significant opportunities for CMM projects. EPA co-sponsored a workshop in Beijing in December 2005 along with the Australia Greenhouse Office, Japan's New Energy and Industrial Development Organization, and the People's Republic of China State Administration of Worker Safety to share cost-effective technologies with staff from Chinese mines. The workshop featured presentations on CMM utilization and mitigation technologies; resource, economic, and risk assessment strategies; and experiences at specific Chinese mines.

EPA provided technical and financial support to help establish the China Coalbed Methane Clearinghouse in 1994 and has provided technical and financial support to the Clearinghouse since that time. The China Coal Information Institute, which manages the activities of the Clearinghouse, serves as a focal point for foreign and domestic investors and project developers to gather data and information regarding project opportunities for methane capture and use.

Using the experience in China as a model, EPA and USTDA plan to work with the India Ministry of Coal and the India Ministry of Petroleum and Natural Gas to establish a similar CBM and CMM Clearinghouse in India. The development of this information center will help to increase India's base of clean energy resources and improve mine safety.



World's Largest Coal Mine Methane Project to Be Implemented in China

Caterpillar, Inc., was recently awarded a contract to supply all the power generation equipment for the world's largest CMM-fueled power plant. Under this contract, Caterpillar will provide 60 gas generator sets—manufactured in Lafayette, Indiana—to the Jincheng Anthracite Coal Group in Shanxi Province, China. This power plant will produce 120 MW of electricity plus heat that will be recovered to produce usable hot water/steam (i.e., combined heat and power) for mining operations. Over the 20-year lifetime of this project, it is estimated, 40 MMTCO₂E emissions will be avoided. The full-scale implementation of the project involves a total investment of \$235 million and is being financed by Japan Bank for International Cooperation, Asian Development Bank, the Jincheng municipal government, and the World Bank Prototype Carbon Fund.

USTDA provided a \$500,000 technical assistance grant to support the mine during the final design and procurement phase. EPA provides support to the China Coalbed Methane Clearinghouse, which is housed within the China Coal Information Institute (CCII).