



# ***US EPA Activities to Support Global Coal Mine Methane Reductions***

**Meeting of the UNECE  
Ad Hoc Group of Experts on Coal Mine Methane  
11 October 2011**

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**Krakow, Poland**

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# Overview

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- US EPA's Coalbed Methane Outreach Program
- The Global Methane Initiative (GMI)
- EPA Support for International CMM Projects through GMI
- Looking Forward

# US Environmental Protection Agency Domestic CMM Efforts



- **Coalbed Methane Outreach Program**
  - Voluntary program has promoted recovery and use of coal mine methane since 1994
- **US CMM industry is robust**
  - ~ 80% of methane from US coal mine degasification systems is recovered and used
  - In 1993, only ~ 25% was recovered and used
- **US EPA collaborates with industry, private sector to promote CMM projects**
  - Provides information about potential opportunities at US mines (active and abandoned)
  - Provides tools, end-use assessments, technical and economic analyses
  - Supported technology demonstration of VAM abatement



# US CMM developments

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- Gassiest US underground coal mines are required to report their greenhouse gas emissions to EPA.
  - Must monitor 2011 emissions, report to EPA in 2012
  - Data will be public, as part of overall Greenhouse Gas Reporting Program
- Ventilation air methane (VAM) projects underway:
  - JWR in Alabama (Biothermica VAMOX, since 2009)
  - 2 projects at CONSOL Energy mines in West Virginia, Pennsylvania (planned for 2011)
  - New resources available:  
<http://www.epa.gov/coalbed/resources/vam.html>
- US EPA is hosting Annual CMM Conference in Park City, Utah (October 18-20)



# Global Methane Initiative (GMI)

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## Mission:

**GMI is a voluntary, multilateral partnership that aims to reduce methane emissions and to advance the abatement, recovery and use of methane as a clean energy source.**

- Began in 2004 (as the Methane to Markets Partnership)
- Targets five sector-specific areas for methane reduction:
  - Agriculture
  - Coal Mines
  - Landfills
  - Municipal Wastewater
  - Oil & Gas Systems

# GMI Strategies for Success

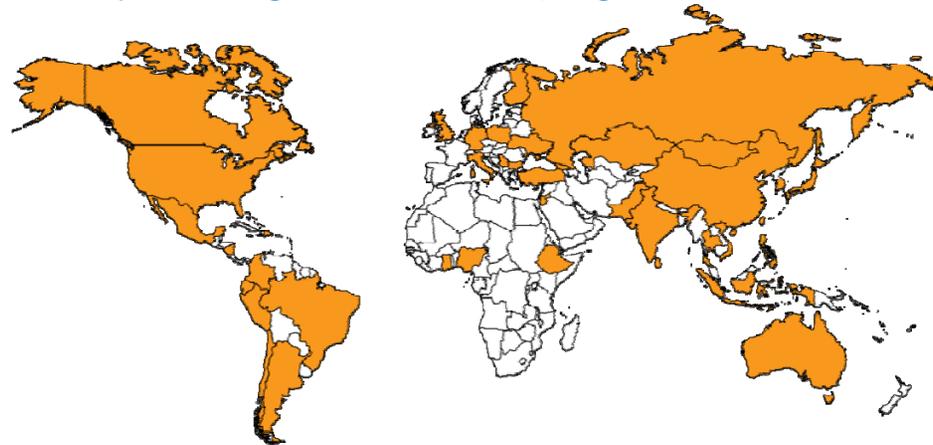
## Strategies:

- Promote international cooperation on methane reduction
- Facilitate the availability of reliable methane emission data
- Support capacity building in partner countries
- Assist in the removal of barriers for methane project development
- Identify cost-effective opportunities for methane projects



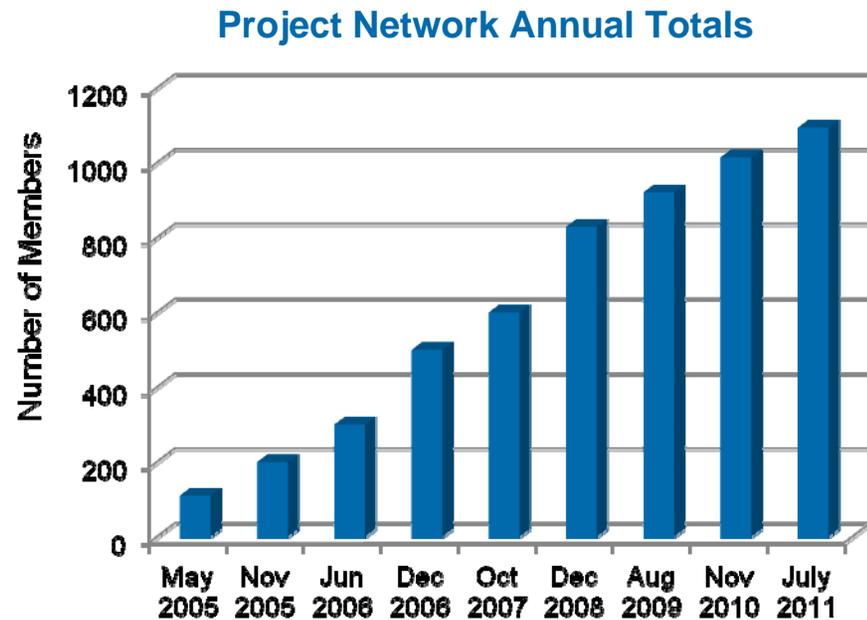
# GMI Partners

- Grown from 14 to 39 Partner governments, plus European Commission
- Represent nearly 70% global anthropogenic methane emissions



# GMI Project Network

- Brings private sector, NGO, multilateral investment community together to implement reduction projects.
- More than 1,100 diverse organizations from six continents.
- Project Network members can:
  - Expand business and increase profits
  - Distinguish themselves in the marketplace
  - Identify financial and technical support for potential projects
  - Build capacity
  - Fulfill strategic goals
  - Mitigate climate change



# Coal Mine Methane Subcommittee



## ■ The Subcommittee has:

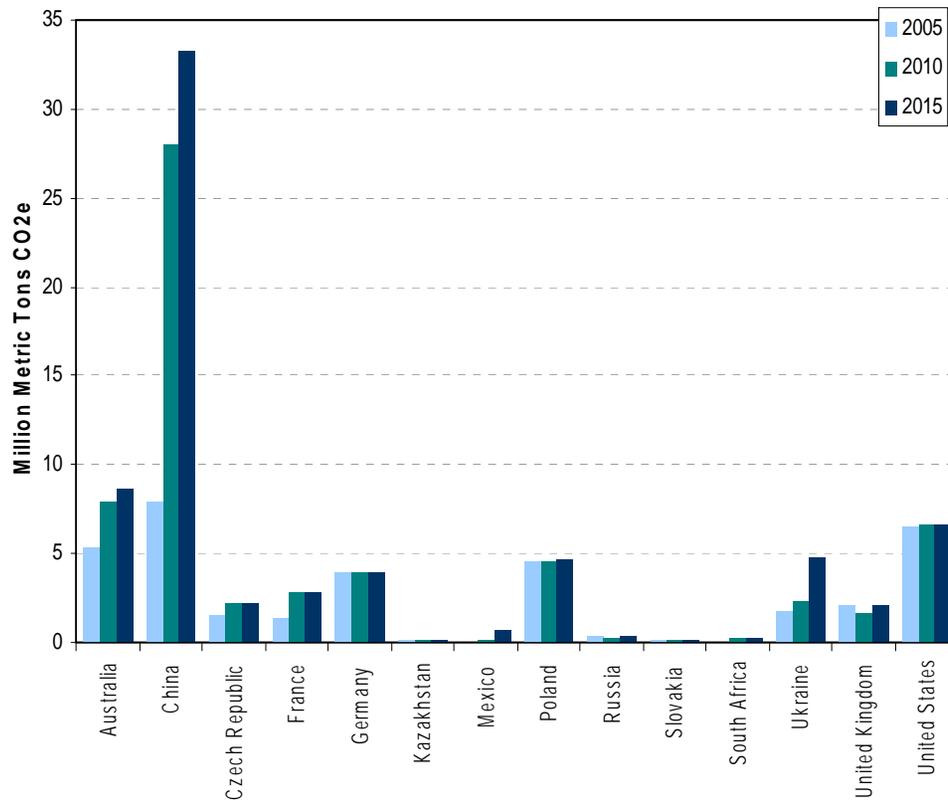
- Hosted meetings and workshops in more than a dozen countries.
- Completed country-specific action plans for seven Partners.
- Showcased nearly 40 project opportunities and success stories at the 2010 Expo.
- Sponsored workshops in China, Kazakhstan, and Ukraine hosted by UNECE to disseminate “Best Practices” for methane drainage and recovery at underground coal mines.
- Supported development of online tools:
  - International coal mine methane (CMM) database
  - Global overview, which profiles 37 coal producing countries
  - Technology (end use) database

## ■ Subcommittee meeting: 13 October, Krakow

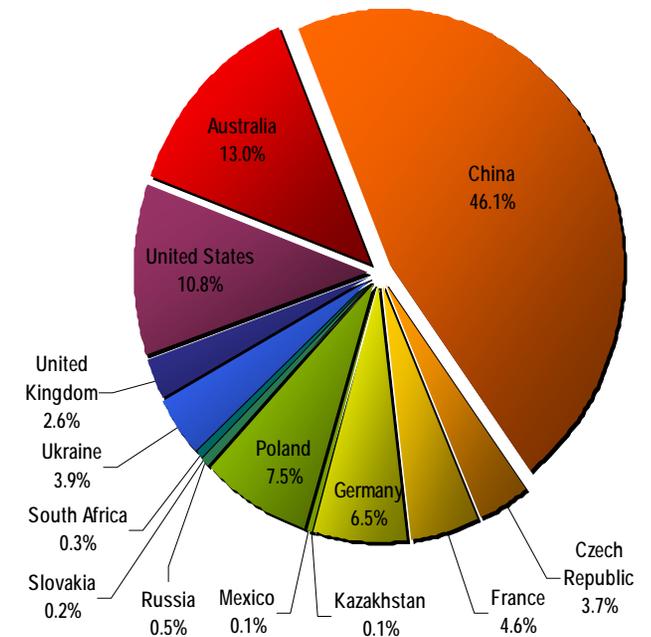
- Potential role of and issues with “abatement only” in the coal sector
  - Flaring
  - VAM mitigation only
- Planning for Partnership Expo event (tentatively 2013, site to be announced)
- Role of Subcommittees in supporting Partner Action Plans
- Addressing global CMM opportunities, developments, and challenges

# Global CMM opportunities and activities

Greenhouse Gas Emission Reductions from Coal Mine Methane Projects: "Total" Estimate



2010 "Total"



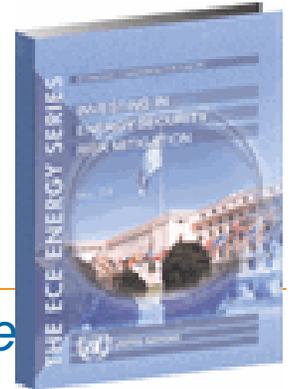
# US EPA support for GMI, international CMM projects

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- EPA is lead US agency for Global Methane Initiative
  - Serves as Co-Chair for Coal Subcommittee
- Project identification, preliminary evaluations
  - Conducted identification, initial data gathering for 33 potential CMM projects showcased at 2010 Partnership Expo in New Delhi
- Development, maintenance of key information resources
  - Supported regular updates, revisions to global database
  - Identified over 300 CMM projects in 13 countries
    - By 2010: over 60 MMTCO<sub>2e</sub> GHG emissions reductions
  - Updated, revised “Global Overview” document with profiles of 37 countries
- Grant funding for international CMM activities
  - Provided more than \$4 million over past 4 years for projects in China, India, Mongolia, Poland, Russia, Turkey
  - Technology demonstrations, pre-feasibility studies, comprehensive feasibility studies, capacity building
- Financial, technical support for work of UNECE Ad Hoc Group of Experts on CMM



# EPA Support for Dissemination of “Best Practices Guidance”



## ■ *Best Practices Guidance for Effective Methane Drainage Use in Coal Mines*

- Drafted by international CMM technical experts; peer reviewed
- Collaborative project between Methane to Markets and UNECE Ad Hoc Group of Experts on Coal Mine Methane
- US EPA financially supported outreach workshops organized by UNECE in China (October 2010), Kazakhstan (May 2011), and Ukraine (September 2011)

## ■ Adoption of best practices will:

- Strive to achieve a goal of zero fatalities, injuries, and property losses from methane related accidents.
- Demonstrate global coal industry’s commitment to mine safety, climate change mitigation, corporate social responsibility, and good citizenship.
- Establish a global dialogue on CMM capture and use.
- Create critical linkages among coal industry, government, and regulatory officials.
- Incorporate effective CMM capture as a part of an effective risk management portfolio.



# EPA support for CMM Activities in China

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- Comprehensive feasibility studies at five sites
  - Success story: Feasibility study at Songzao Coal Mines, Chongqing
  - Based on results of this study, CQEIG is moving forward with joint venture for CMM to LNG plant
- Pre-feasibility studies and project site identification
- Technology Demonstrations
  - CSIRO mitigation and utilization of dilute methane with a monolithic catalytic combustor at Tiefa
- Data collection and analyses
  - Database on abandoned mines in Shanxi province
  - Development of database on degasification in Shanxi Province
  - Coal Mine Gas Recovery and Utilization throughout China
- Capacity building: national and regional efforts
  - China Coal Information Institute (CCII) conducts training, study tours, workshops, data collection, identification of opportunities, pre-feasibility studies
  - Shanxi Province
  - Guizhou Province

# Examples of EPA support for CMM Activities

## ■ Mongolia

- Conducted pre-feasibility study on methane recovery and utilization and provided two-day training on CMM project development.
- Supporting new effort to assess surface mine methane emissions.

## ■ Poland

- Supported feasibility study and assessment of converting abandoned mine methane (AMM) to liquefied natural gas (LNG).
- Funded study to characterize ventilation air methane (VAM) emissions and mitigation potential from 10 gassy mines.



# Examples of EPA support for CMM Activities (2)

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## ■ Russia

- Technical workshop focusing on CMM technologies and practices (June 2011, Kemerovo)
- Uglemetan is initiating new effort to assess opportunities for ventilation air methane mitigation in the Kuzbass

## ■ Turkey

- Assessment of coal mine degasification options for bituminous and lignite coal mines in Turkey, including development of database of relevant information
- Collaborative effort between Virginia Center for Coal and Energy Research and Turkish Coal Enterprises, funded by US EPA

## ■ Ukraine

- International Investment Forum: Funding of CMM Projects in Ukraine (held in Donetsk, June 2010)
- Training on degasification in advance of mining and utilization of ventilation air methane (Donetsk, September 2011)



# Thank you!

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Global Methane Initiative  
[www.methanetomarkets.org/gmi](http://www.methanetomarkets.org/gmi)

US EPA Coalbed Methane Outreach Program  
[www.epa.gov/cmop](http://www.epa.gov/cmop)

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