

Overview of the Global Methane Initiative



Global Methane Initiative

- International public-private partnership focused on reducing barriers to the recovery and use of methane as a clean energy source (established in 2004; charter renewed in 2016)
- Includes 45 Partner Countries and more than 500 Project Network members
- Targets sector-specific areas for methane reduction
 - Biogas (Agriculture, Municipal Solid Waste, Municipal Wastewater)
 - Coal Mines
 - Oil & Gas Systems
- Collaborates with the Climate and Clean Air Coalition (CCAC), the United Nations Economic Commission for Europe (UNECE), and the International Energy Agency (IEA)

Organizational Structure



Steering Committee

Administrative Support Group (ASG)



Biogas Subcommittee

- Technical Groups:
- Agriculture
 - Municipal Solid Waste
 - Wastewater



Coal Mines Subcommittee



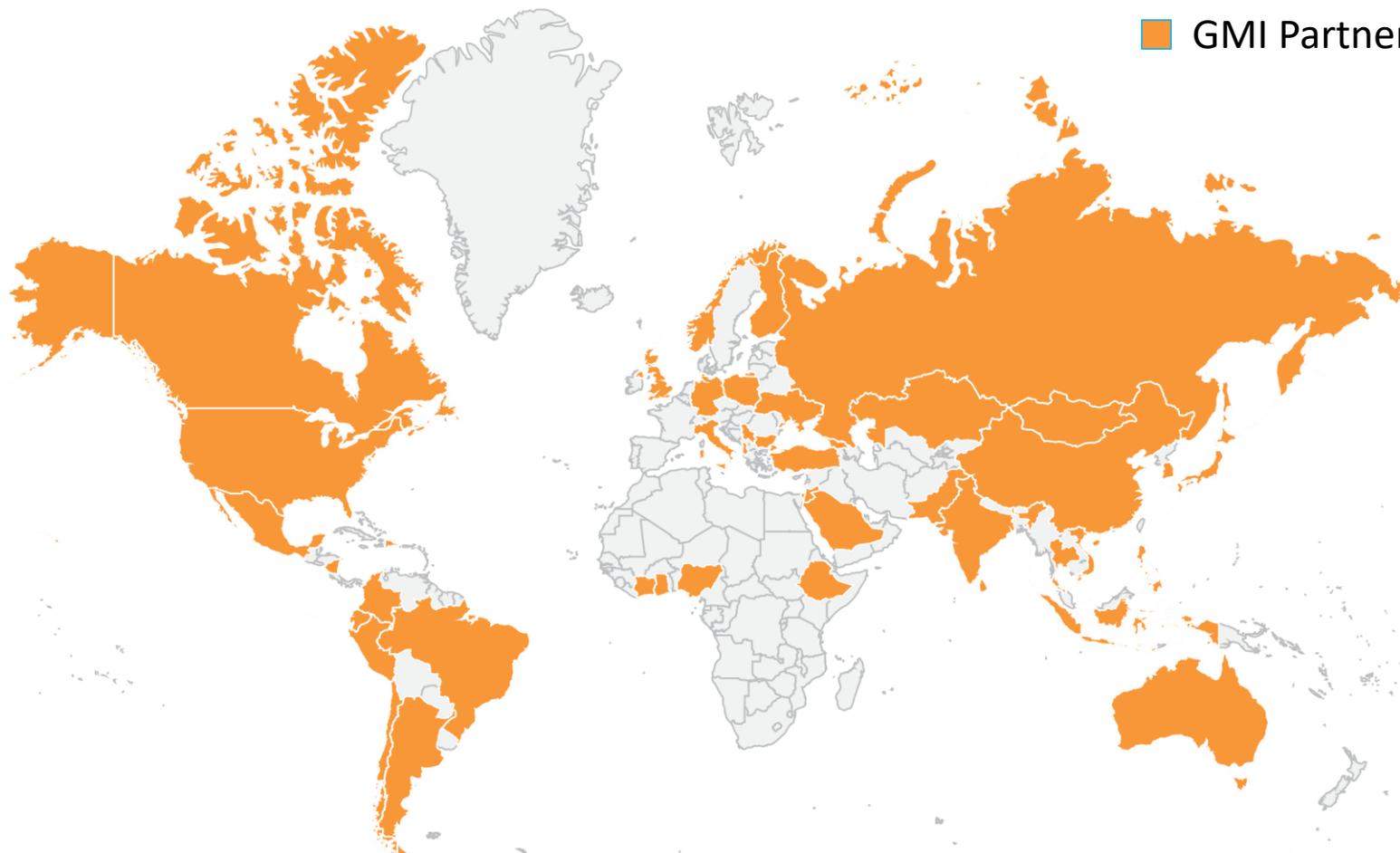
Oil & Gas Subcommittee

Project Network



Partner Countries

 GMI Partner Country



GMI Partner Countries represent approximately 75% of the world's man-made methane emissions

Outputs Since 2004



Grown from 14 to 45 partner countries



More than \$610 million in leveraged funding for projects and training



More than 500 Project Network members



Conducted more than 600 resource assessments, feasibility studies, study tours, and site visits



Provided trainings for more than 15,000 people in methane mitigation

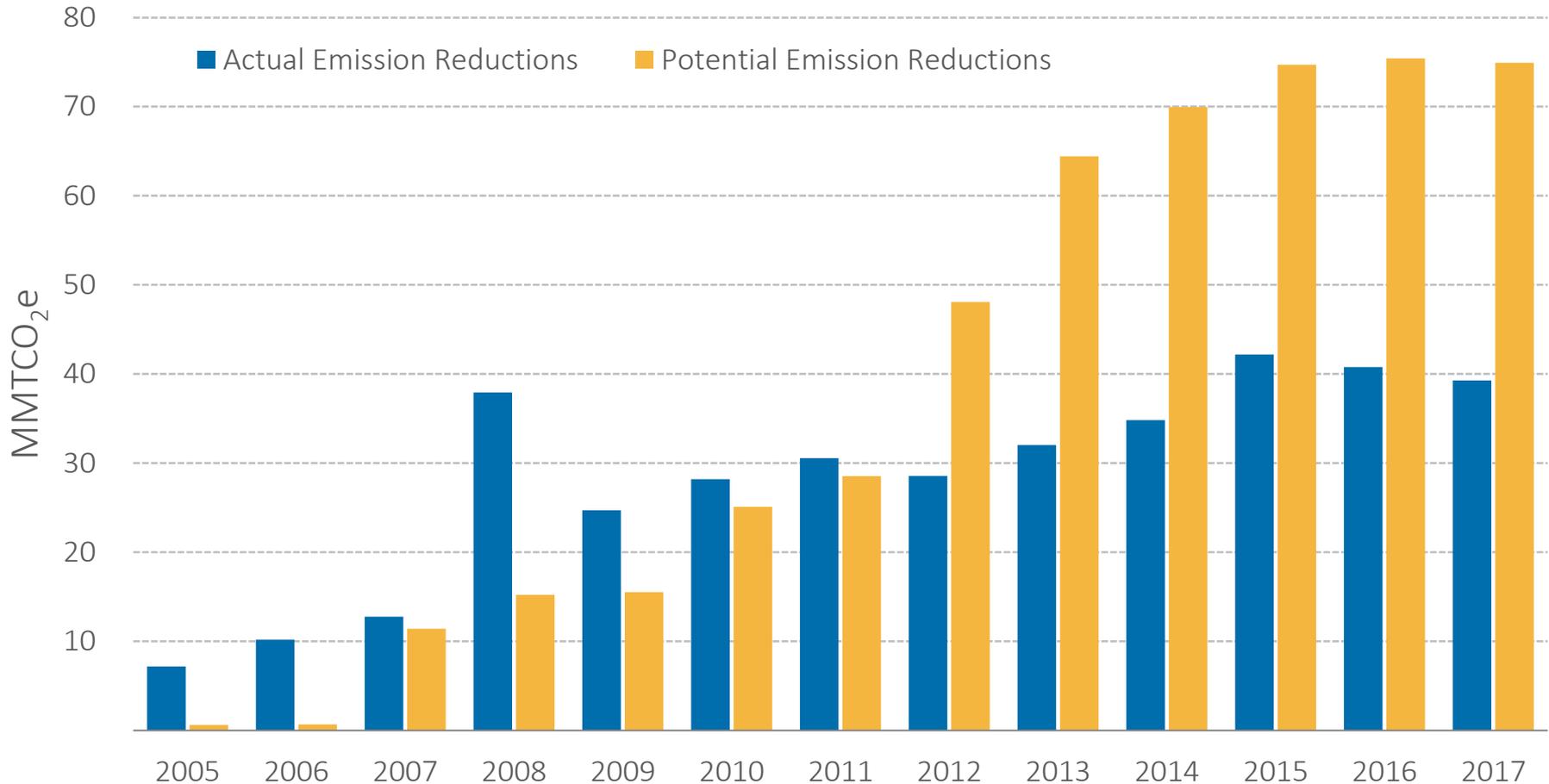


Developed more than 50 tools and resources for methane mitigation

GMI support has yielded cumulative emissions reductions of nearly **370 MMTCO₂e**, resulting in many benefits, including:

- Decreased greenhouse gases
- Improved human health
- Increased worker safety
- Better air and water quality
- Enhanced energy security
- Expanded economic growth

GMI Emission Reduction Accomplishments



These data represent the best available yet conservative estimates of emission reductions, including actual emission reductions from GMI projects and potential emission reductions from other projects identified through GMI efforts.

Announcing the 2019 Global Methane Challenge

Global Methane
CH**ALLENGE** 

It's time to take action!

Challenge Overview



- **Why:** Raise awareness and catalyze ambitious action to reduce methane emissions
- **What:** An opportunity to showcase policies and technologies being used to reduce methane emissions around the world
- **When:** 2019 calendar year
- **Who:** The Challenge is open to all public- and private-sector actors interested in showcasing their actions to reduce methane emissions
- **Recognition:** Participants will be publicly recognized for actions to reduce methane emissions and actions will be celebrated at a 2020 capstone event

Examples of Actions



Coal Mine Sector

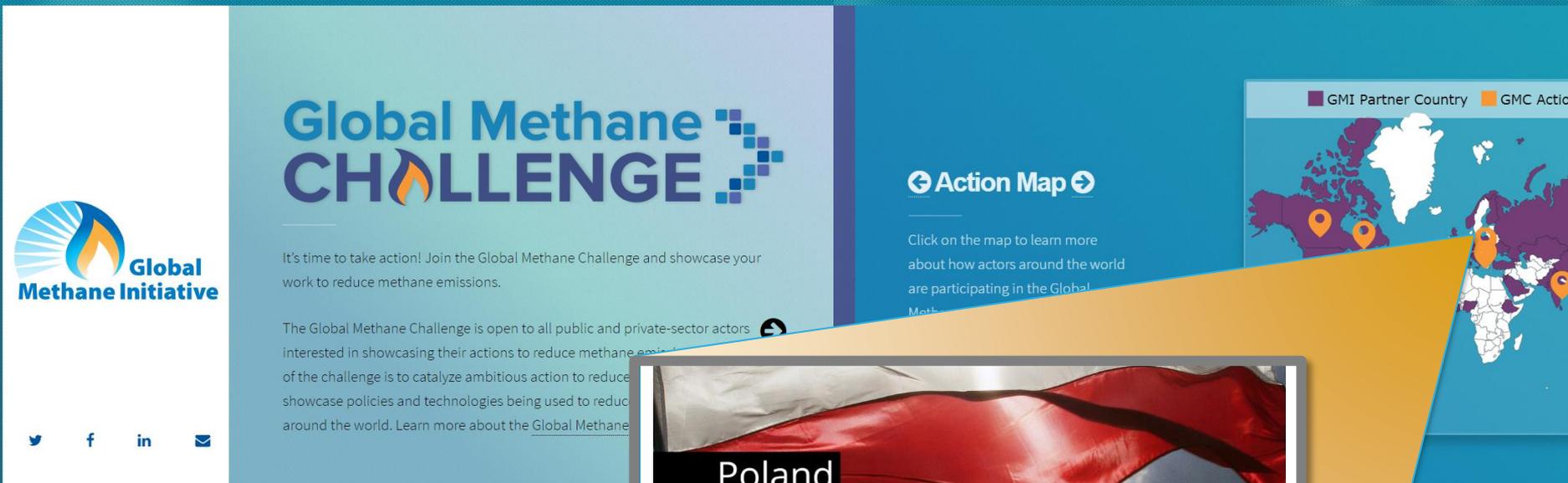
- Ventilation Air Methane oxidation
- Capture pre-mine drainage coal mine methane for recovery and usage (power generation, pipeline injection, boiler usage, etc.)
- Install gas collection systems



All Sectors

- Monitor methane emissions and create an emissions inventory
- Provide technical or financial support to a methane mitigation project
- Develop or promote implementation of sector-specific best practices

Visit globalmethane.org/challenge



Actions are highlighted on the website



Poland

Poland International Centre of Excellence on Coal Mine Methane

The United Nations Economic Commission for Europe (UNECE) member states produce 38% of the world's coal and generate 40% of coal mine methane (CMM)¹. As a member of UNECE, Poland committed to curbing CMM emissions through the inauguration of the International Centre of Excellence on Coal Mine Methane (ICE-CMM) in Katowice, Poland on June 8, 2017. The Centre is a non-profit entity established through collaborative efforts between the UNECE, its Group of Experts on CMM and the Global Methane Initiative (GMI). The Polish partners of the ICE-CMM include the Central Mining Institute from Katowice (GIG), Polish Oil and Gas Company (PGNiG), Polish Geological Institute National Research Institute (PIG PIB), and the Oil and Gas Institute National Research Institute (INiG PIB).

Operating within the organizational structure of the Chamber of the Natural Gas Industry², the principal objective of ICE-CMM is to actively support the Group of Experts on CMM in its capacity-building activities through dissemination of best practices for (1) economically viable methane abatement and utilization, (2) socially acceptable underground coal mine practices, and (3) environmentally responsible methane management³. The Centre is expected to contribute to further development and dissemination of the UNECE best practices for effective methane drainage and use in coal mines to reduce overall emissions from coal mining operations (see https://www.unece.org/fileadmin/DAM/energy/cmm/docs/BPG_2017.pdf).



Coal Mines Subcommittee



Coal mine methane sector activities focus on recovering methane that is released from coal seams as a result of mining activities

Coal Mines Subcommittee

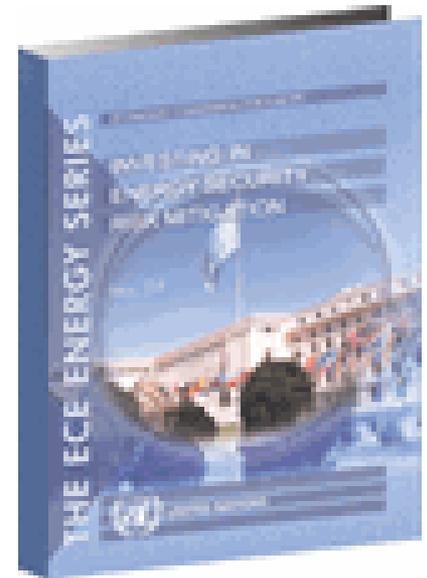


- Developed comprehensive profiles that characterize the coal and coal mine methane sectors of 37 countries (29 Partner countries)
 - Completed country-specific action plans for 10 Partner countries
 - Showcased 100+ project opportunities and success stories at Methane Expos in China, India, and Canada.
 - 40 project opportunities presented at the 2010 Expo in New Delhi
 - Hosted meetings and workshops in more than a dozen countries
 - Developed numerous technical resources and tools
- Coal Subcommittee Statement of Purpose and Action Plan:

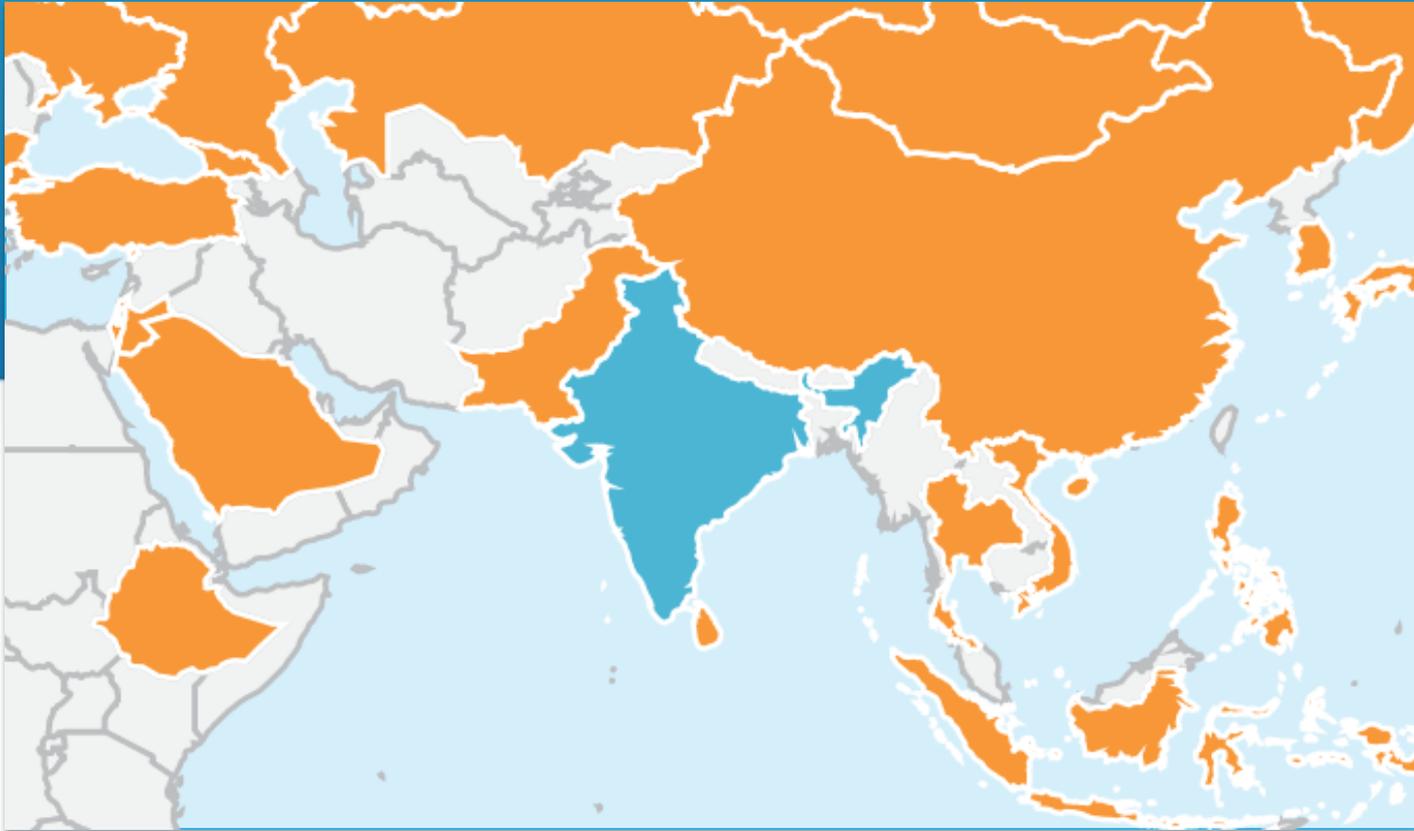
<http://www.globalmethane.org/sectors/index.aspx?sector=coal>

GMI Coal Mines Subcommittee: Collaboration with UNECE

- Best Practices Guidance for Effective Methane Drainage and Use in Coal Mines
 - Drafted by international CMM technical experts; peer reviewed
 - Updated in 2016
 - Collaborative project between GMI and UNECE Group of Experts on CMM
 - U.S. EPA financially supported outreach workshops organized by UNECE in China (Oct 2010), Kazakhstan (May 2011; Oct 2016), Ukraine (Sept 2011), and India (March 2017)
 - Guide can be found at:
<https://www.unece.org/energy/se/cmm.html>



GMI in India



Background

- The U.S. EPA and India's government agencies have a long and productive history of cooperation in the area of CMM/CBM resource development
- Informal efforts were initiated in 2001, culminating in the establishment of the CMM/CBM Clearinghouse in 2008, at CMPDI (HQ) in Ranchi (Jharkhand)
- The Clearinghouse has facilitated numerous efforts to promote CMM/CBM development in India, including workshops and conferences, training and site visits, and technical studies

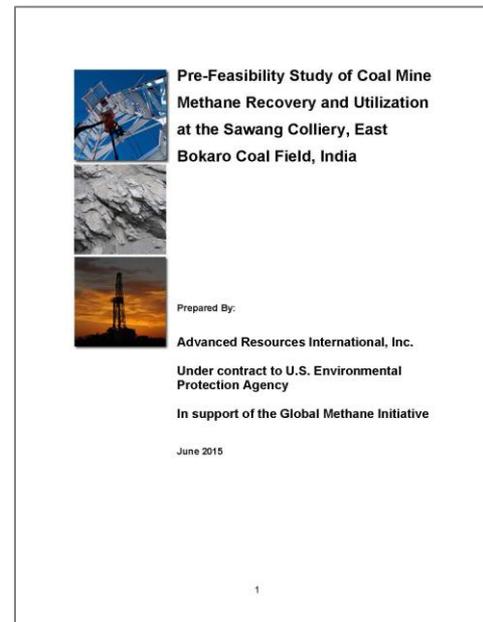
India CMM/CBM Clearinghouse

- Established in November 2008, with partner funding from U.S. EPA (25%) and Coal India, Ltd. (75%) under aegis of Ministry of Coal
- Non-profit and non-governmental organization with the aim to promote the development of CMM/CBM in India
- Intended to be the public face of the CMM/CBM industry in India through its communication and outreach efforts
- Initial point of contact for foreign and domestic investors



Technical and Economic Studies

- The Clearinghouse has supported three technical and economic pre-feasibility studies funded by the U.S. EPA:
 - Sawang Colliery, East Bokaro coalfield (2013)
 - Chinakuri Coal Mine, Raniganj coalfield (2015)
 - Pootkee-Bullinary Mine, Jharia coalfield (2019)



Workshops and Conferences

- November 2008: Following the inauguration of the Clearinghouse, a two-day workshop entitled “CMM Development in India: An Opportunity Area” was held in Ranchi
- March 2010: Supported the 2010 Methane to Markets Partnership Expo in Delhi, presented various prospect opportunities, and created working models of CMM/CBM operations
- November 2013: The India Clearinghouse hosted an International Workshop entitled “Development of Coal-Based Non-Conventional Resources in India”
- March 2017: CMPDI Hosted an International Workshop on “Best Practices in Methane Drainage and Use in Coal Mines” in conjunction with the UNECE



Training and Technology Transfer

- Since the establishment of the Clearinghouse in 2008, coal industry personnel have visited the U.S. to learn about a number of areas of CMM/CBM development, including:
 - CBM drilling and completions techniques
 - In-mine directional drilling
 - Development of CMM/CBM in active oil and gas fields
 - Legal and regulatory aspects of CMM/CBM development
 - End-use technologies for CMM/CBM
- Recently, a high-level delegation visited in-mine drilling operations at the Warrior Met Coal mine in Tuscaloosa, AL, as the geology and mine conditions are similar to the Moonidih mine of the Jharia Coalfield, an area actively being pursued for CMM development by CIL



Future Activities

- With the recent permission by the Government of India to Coal India Limited to explore and develop CBM from areas under coal mining leases held by CIL and its subsidiaries, the Clearinghouse will continue to serve as a catalyst for Indian CMM/CBM development
- Future activities will include:
 - Organizing in-house training and workshops for capacity building of Coal India Limited, Government officials, Industry personnel, and other stakeholders involved with CMM/CBM development
 - Organizing international seminars and technical workshops in India for exploring the existing opportunities in the development of CMM in India
 - Gathering the latest technical information on CMM/CBM development and enhancing international exchange and cooperation in CMM/CBM development
- As the first commercial CMM projects are developed, the U.S. EPA looks forward to continued cooperation with the India CMM/CBM Clearinghouse in association with CIL- CMPDI under aegis of MoC