

Coal Mines Subcommittee

2020 Updates and Plans for 2021 and Beyond

Coal Mines Subcommittee Co-Chairs

Ms. Volha Roshchanka, USA

Mr. Shekhar Saran, India

Mr. Huang Shengchu, China



GMI Steering Committee Meeting, 2 December 2020

Coal Mines Subcommittee Meetings

- **November 2019: Geneva, Switzerland**
 - Held In conjunction with UNECE Group of Experts on CMM
 - Focused on incentives for CMM and AMM
 - Co-chaired by China, India, USA
- **July 2020: Virtual Meeting**
 - Held in conjunction with UNECE Group of Experts on CMM
 - Focused on how COVID has impacted CMM mitigation around the world
 - Included discussion panel with presentations from China, India, Poland, USA

How has COVID impacted CMM projects in your country?	# of Responses
Energy market prices	6
Equipment supply	6
Equipment operations & maintenance	5
Coordination/cooperation with mine owner/operator	5
Gas availability	4
Carbon market prices	3
Staffing	3
Other	4
TOTAL	36

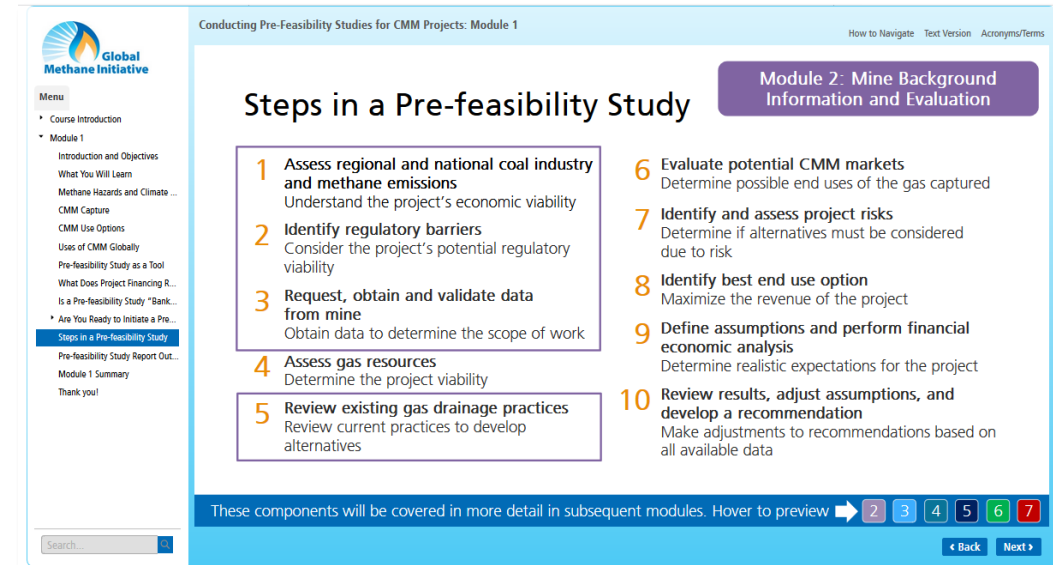
Featured Resources: Trainings and Research

CMM Project Development Online Training Course

- Introduces principles for assessing the potential of developing projects to capture and/or use CMM (3 out of 8 modules have been posted on the GMI website to date).
- Exploring the option to collaborate with China Coal Information Center (CCII) to release the training course in Chinese.

Research Publication

- Published a study estimating global CMM and AMM emissions using modelling analysis. The article is referenced in the [EU Methane Strategy](#).
 - Kholod, N., Evans, M., Pilcher, R.C., Roshchanka, V., Ruiz, F., Coté, M., Collings, R., 2020. Global methane emissions from coal mining to continue growing even with declining coal production. Journal of Cleaner Production. <https://doi.org/10.1016/j.jclepro.2020.120489>



The screenshot displays the 'Steps in a Pre-feasibility Study' module from the Global Methane Initiative training course. The interface includes a navigation menu on the left, a main content area with a list of 10 steps, and a footer with navigation controls. The steps are:

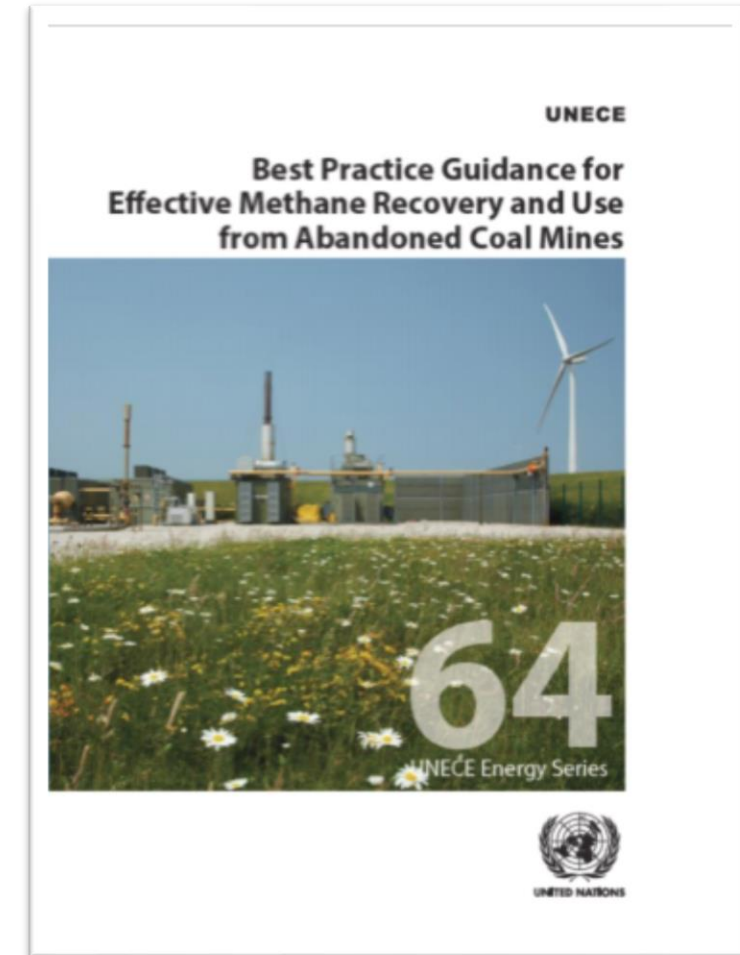
- 1 Assess regional and national coal industry and methane emissions
Understand the project's economic viability
- 2 Identify regulatory barriers
Consider the project's potential regulatory viability
- 3 Request, obtain and validate data from mine
Obtain data to determine the scope of work
- 4 Assess gas resources
Determine the project viability
- 5 Review existing gas drainage practices
Review current practices to develop alternatives
- 6 Evaluate potential CMM markets
Determine possible end uses of the gas captured
- 7 Identify and assess project risks
Determine if alternatives must be considered due to risk
- 8 Identify best end use option
Maximize the revenue of the project
- 9 Define assumptions and perform financial economic analysis
Determine realistic expectations for the project
- 10 Review results, adjust assumptions, and develop a recommendation
Make adjustments to recommendations based on all available data

At the bottom, a navigation bar indicates that components 2 through 7 will be covered in more detail in subsequent modules, with a 'Next' button.

Available at: <https://globalmethane.org/training/CoalMineTraining.html>

Featured Resources: AMM Best Practice Document

- **Best Practice Guidance for Effective Methane Recovery & Use from AMM**
 - Published under the auspices of UNECE
 - Identifies best practice for evaluating abandoned mine methane opportunities and implementing AMM recovery and use projects
 - Includes detailed case studies
 - Is available on UNECE's website at:
<https://www.unece.org/index.php?id=55101&L=0>

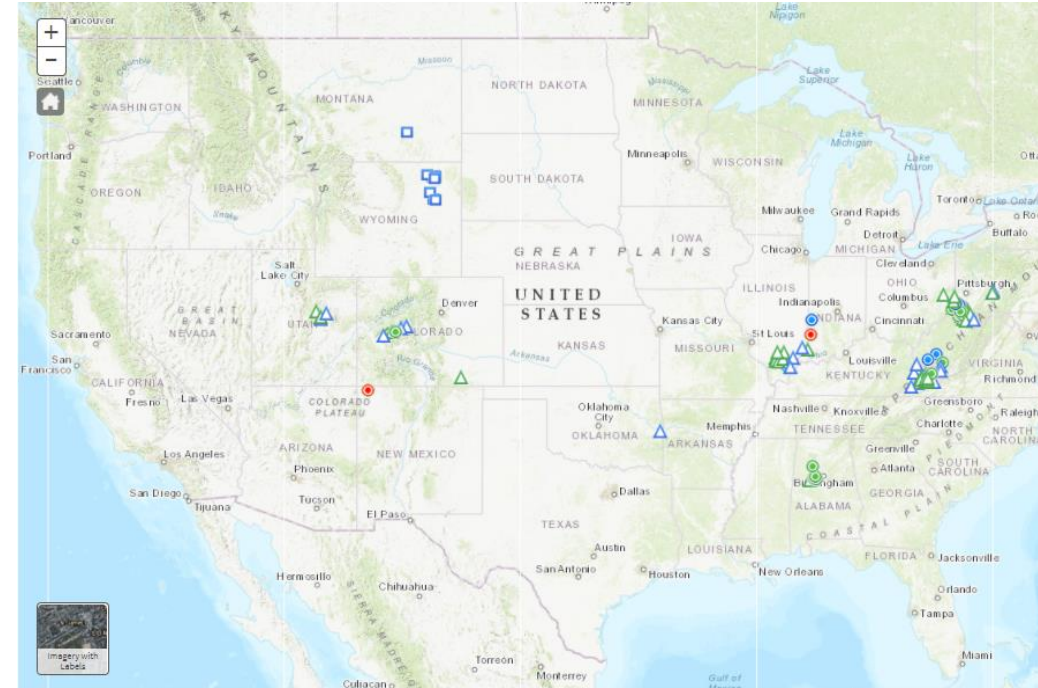


Recent Accomplishments in the United States

- **Updates to Resources:**
 - Online [map](#) of US CMM Opportunities
 - [Coal Mine Methane Recovery at Active and Abandoned U.S. Coal Mines: Current Projects and Opportunities](#) (in progress)
 - [U.S Coal Mine Methane Project Cash Flow Model](#) (in progress)
 - Case study document featuring flaring projects (in progress)
 - Primer on Greenhouse Gas Registries (in progress)

- **Webinars:**
 - Conducted a webinar on “[Ventilation Air Methane Projects in the United States: Barriers and Potential Opportunities](#)”

- **Website refresh** (in progress)



	Surface Mine	Underground Mine	Underground Non-Producing Mine	Abandoned Mine
No drainage No gas recovery	□	●	◇	△
With drainage No gas recovery	■	●	◇	△
With drainage With gas recovery	■	●	◇	△

Recent Accomplishments in China



19th International CBM/CMM Symposium

- Organized in Dec 2019 by the China Coal Information Institute and attended by over 150 participants.
- Provided an excellent forum for exchange of CMM development lessons learned and best practices in CMM capture and use.
- Subcommittee members presented on global perspectives and best practices for Abandoned Mine Methane Recovery and Use.
- U.S. and China representatives met and engaged on current technical and policy developments in CMM.



Yangquan Coal Group VAM Site Tour

- Yangquan Coal Group, one of the biggest coal mine groups in China, began to utilize CMM since 1950s. CMM has been utilized in many ways, such as power generation, household use, and liquefaction.
- In December 2019, U.S. EPA participated in a study tour organized by the Yangquan Coal Group the Shanxi Province.
 - Visited the Ventilation Air Methane (VAM)-to-Power project at Yangquan Coal Group's Mine #2 and a nearby CMM project.
 - The VAM-to-Power project uses 6 oxidizers and generates 15 megawatts (MW) of power.
 - The VAM-to-Power project is one of two operating worldwide, and the success and transferability of the project could lead to the implementation of additional projects with considerable green house gas (GHG) mitigation potential.



Recent Accomplishments in India

Bi-lateral United States- India meetings:

- The India Central Mine Planning & Design Institute's (CMPDI) CMM/CBM Clearinghouse welcomed a U.S. Embassy representative in January 2020.
- The meeting was chaired by Chairman-cum- Managing Director Shri Shekhar Saran.
- U.S. Consul General, Patricia Hoffman, extended her support for CMPDI's work.
- International Webinar on “CBM Resource-Reserve Assessment” organized by CMPDI on 29th Sept 2020 (4Hrs)



International Webinar on
CBM Resource-Reserve Assessment



India CBM/CMM Clearinghouse

- CMPDI is now the Principal Implementing Agency (PIA) for the development of CBM & CMM in Coal India Limited (CIL) & its Subsidiaries' Leasehold areas.
- A CMM drainage project at Moonidih UG Mine (BCCL), Jharia Cf has been planned for the recovery of methane from coal seams to enhance mines safety, gainful utilization of recovered methane gas, and coal production.
- Offer has been received in September 2020 from a consortium belongs to companies of USA & India in response to Global Tender floated for Selection of Technology Provider on concept to commissioning basis.
- Global Tenders have been published at <https://coalindiatenders.nic.in> for Selection of CBM Developer (CBMD) for Jharia CBM Block I and Raniganj CBM Block. Offer may be submitted till 28th December 2020.

2021 Priorities

- Move most CMM mitigation tools online, including
 - CMM 101
 - CMM prefeasibility training
 - AMM prefeasibility training
- Build capacity to implement methane policies and projects through trainings and outreach
- Update Subcommittee Action Plan
- Promote achievement of partner countries
- Awards and recognition of participating organizations

Coal Mines Subcommittee Perspective on the Future of GMI

- Extend GMI Charter for another 10 years
- Extend Global Methane Challenge for another two years
- GMI should support declaration of the UN Decade of Methane Management
- GMI priorities should be:
 - Develop recommendations on how countries can increase employment through mitigation, as countries aim to recover economies
 - Develop a policy tool-kit that help facilitate methane mitigation
 - Alliance with professional association(s), e.g., The Mining, Geological & Metallurgical Institute of India (MGMI)

Thank you!

**Co-Chairs, Coal Mines Subcommittee
Global Methane Initiative**