

# Prefeasibility Study Training by GMI

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# 3 Options to Evaluate the Technical and Economic Feasibility of a Coal Mine Methane (CMM) Project

	Option	Characteristics	Benefits	Limitations
<b>1</b>	<b>Desk Study</b> First order analysis based on limited data	<ul style="list-style-type: none"> <li>• Basic assumptions</li> <li>• Simple financial modeling</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminates projects with no clear chance of success early at low cost and effort</li> </ul>	<ul style="list-style-type: none"> <li>• Positive results are far from conclusive</li> </ul>
<b>2</b>	<b>Prefeasibility Study</b> More detailed analysis with site-specific information	<ul style="list-style-type: none"> <li>• More detailed review of gas resources</li> <li>• Review of gas drainage</li> <li>• Gas production forecast</li> <li>• More thorough financial analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Conclusions are more defensible than a desk study</li> <li>• Although relatively detailed, costs are still significantly less than a feasibility study</li> <li>• Supports further investigation through a full feasibility study</li> </ul>	<ul style="list-style-type: none"> <li>• Not an investment grade document</li> <li>• Dependent on data provided by 3<sup>rd</sup> party</li> </ul>
<b>3</b>	<b>Feasibility Study</b> Detailed analysis sufficient to support project financing	<ul style="list-style-type: none"> <li>• Thorough report investigating the economic and technical feasibility of project development</li> </ul>	<ul style="list-style-type: none"> <li>• “Investment grade” document for 3<sup>rd</sup> party finance</li> <li>• Some data obtained during course of study through original investigation</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> </ul>

# GMI Support for Feasibility and Prefeasibility Studies

- 1 Desk Study
- 2 Prefeasibility Study
- 3 Feasibility Study

EPA and GMI have directly or indirectly supported the development of about

50

CMM feasibility and prefeasibility studies

in

11 countries

- Identify potential projects while evaluating their technical and economic feasibility
- Initial focus on full feasibility studies
- Since 2011, shift to prefeasibility studies
  - More effective use of resources
  - Broader range of project types
  - More countries



[epa.gov/cmop/international-activities](https://epa.gov/cmop/international-activities)

EPA-supported prefeasibility studies prepared on behalf of the GMI Coal Mines Subcommittee



# What Were Some Lessons Learned?

- Gained valuable experience and insight by working with mine owner/operators and project developers to prepare prefeasibility study reports, but also in reviewing prefeasibility studies prepared by others
- Have found that preparers' definition of a prefeasibility study is exceptionally broad and sometimes does not meet general criteria for such studies
- Inadequate analysis and poor preparation may result in rejection of potentially feasible CMM projects



# Developing Two Online Training Courses for Prefeasibility Studies

## Course 1

### Prefeasibility Study Training for Methane Drainage and Use at Working Mines

## Course 2

### Prefeasibility Study Training for Methane Recovery and Use at Abandoned Mines

- Assist project developers, mining company management, and others with understanding:
  - process to initiate, complete and deliver a thorough and defensible prefeasibility study
  - technical, market and financial data and analyses appropriate for a prefeasibility study
- Self-directed, interactive, web-based training courses, freely available to the public on the GMI website
- Developed in English, but open to offers to translate into other languages, starting with Chinese

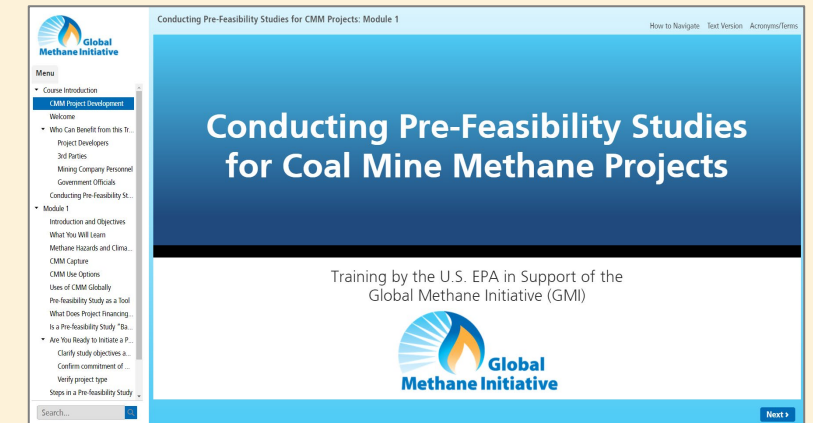
# Prefeasibility Study Training for Methane Drainage and Use at Working Mines

- Covers all aspects of a prefeasibility study: from CMM resource assessment to financial analysis
- Originated from a course delivered to the China International Center of Excellent in 2018
- Incorporates principles from UNECE Best Practice Guidance

Module	Topic
1	Introduction and Objectives
2	Mine Background Information and Evaluation
3	Resource Assessment
4	Improvements to Gas Drainage
5	Identifying Benefits of Improvements
6	Gas Production Forecast
7	Market Analysis, Risk Analysis, and Financial Analysis
8	GMI Pre-feasibility Study: Case Study – Liulong Mine, China

Will feature a case study as the 8<sup>th</sup> module

First 3 modules are available on GMI's website [globalmethane.org/training](http://globalmethane.org/training)



Full course to be available this spring!



# Prefeasibility Study Training for Methane Recovery and Use at Abandoned Mines

- Covers all aspects of a prefeasibility study: from Abandoned Mine Methane (AMM) resource assessment to financial analysis
- Incorporates principles from UNECE AMM Best Practice Guidance
- Complete course expected this summer

Module	Topic
1	Introduction and Objectives
2	Information and Data Acquisition
3	Resource Assessment
4	Gas Production Forecasts
5	Mine Closure Design
6	Market, Financial, and Risk Analysis
7	GMI Pre-feasibility Study

Will feature case studies in the 7<sup>th</sup> module

First modules expected to be posted to GMI website this spring



# Summary

- The goal of the GMI training courses is to introduce users to the principles for completing a thorough and technically sound study
- Students will identify:
  - **data needs** for technical and financial analyses
  - **methods** to assess methane resources
  - **criteria** to evaluate effectiveness of methane drainage and benefits to improvements to drainage (for working mines)
  - **options** and **benefits** of forecasting gas drainage from working and abandoned mines
  - **considerations** for evaluating markets and project risks
  - standard **metrics** for financial analyses

Please access existing training modules at:  
<https://www.globalmethane.org/training/coalminetraining.aspx>





# Thank You

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