GMI Steering Committee Meeting

Global Methane Initiative

26 September 2022

Welcome!

Cécile Siewe
GMI Steering Committee Chair
Environment and Climate Change Canada

Introductions and Country Updates

Partner Country introductions

- We will call on each country in alphabetical order
- Each country representative is invited to introduce themselves (name and affiliation) and provide an update on country actions (5 minutes total)

U.S. Country Update

Pamela M. Franklin, Ph.D.

Branch Chief, NonCO2 Programs Branch

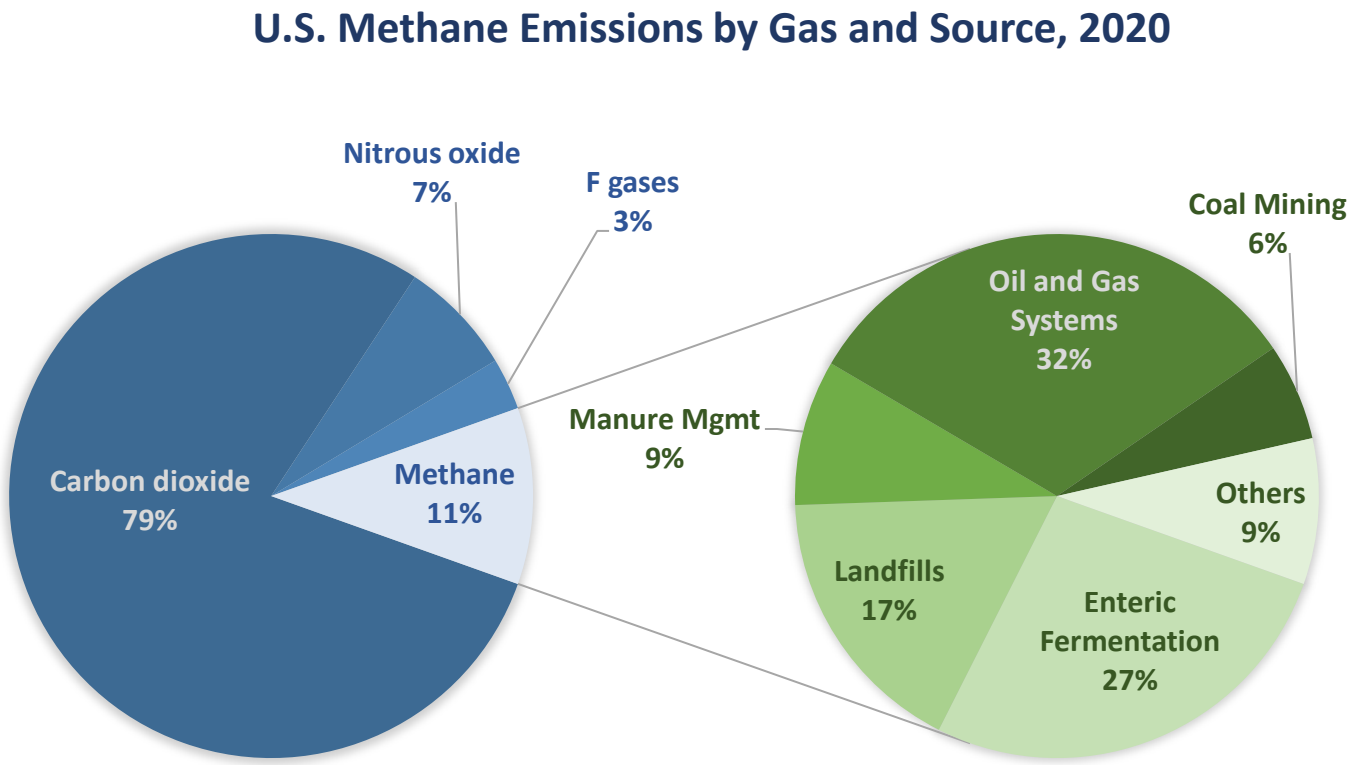
U.S. Environmental Protection Agency

Global Methane Initiative Steering Committee Meeting

September 26, 2022

U.S. Methane Emissions

- 11 percent of total U.S. greenhouse gas (GHG) emissions in 2020
- Key emissions sectors:
  - oil and gas
  - enteric fermentation
  - landfills
  - manure management
  - coal mining



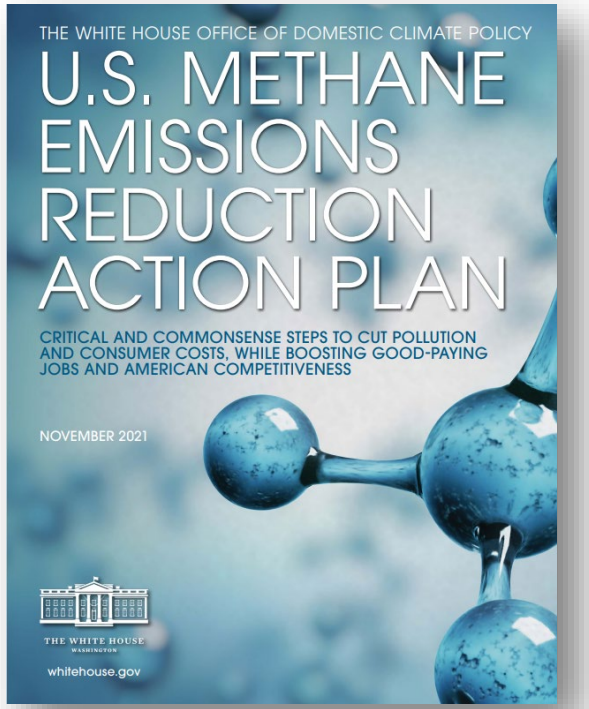
Improving U.S. Data:
Greenhouse Gas Reporting Program & Greenhouse Gas Inventory

- **EPA plays a lead role in developing and improving data on methane emissions to inform the public, support mitigation efforts, and inform policymaking**
- **Greenhouse Gas Reporting Program**
  - Mandatory annual reporting of GHG emissions from sectors across the economy, including oil and natural gas
  - In April 2022, EPA proposed significant amendments to specific provisions of the GHGRP to improve the quality of the data collected under the program.
  - EPA is also requesting comment on potential future revisions that would expand the GHGRP to several new source categories
- **GHG Inventory**
  - EPA holds an annual stakeholder process to discuss new data available to improve the GHG Inventory
  - Recent improvements to quantification of U.S. emissions from oil and gas systems:
    - Addition of an estimate for post-meter methane leakage
    - Incorporation of satellite-derived estimates for large well blowout events
    - Improved quantification of emissions from abandoned wells

U.S. Methane Emissions Reduction Action Plan (2021)

The *U.S. Methane Emissions Reduction Action Plan* redoubles efforts from across the government to dramatically cut U.S. methane emissions.

- Addresses methane emissions from all key sectors
- Documents both existing and planning activities across the U.S. government
- Includes incentive-based, voluntary partnership programs and regulatory actions
- Reinforces U.S. international leadership to address methane emissions on the global scale



Municipal Solid Waste Landfill Emissions Regulations

- In 1996 EPA established New Source Performance Standards (NSPS) and Emission Guidelines (EG) for MSW landfills. If landfills are above a certain size threshold and non-methane organic compounds (NMOC) emission rate, the landfill gas must be collected and flared (at a minimum).
- In 2016, EPA promulgated strengthened standards that lowered emission thresholds for installing/operating landfill gas collection systems.
- May 2021 final action established an MSW Landfills Federal Plan to implement the 2016 MSW Landfills EG for states that did not submit an approved plan to EPA.
  - EPA estimates 105 landfills are affected by the lowered threshold, with 846 landfills total anticipated to be controlling emissions in accordance with this rule by year 2025.
  - These landfills must collect and flare the gas at a minimum.
- 2021 White House Methane Action Plan sets target of 70% reduction for landfill gas collection and destruction

Oil & Gas Regulations

- **The Environmental Protection Agency** issued a proposal in November 2021 to reduce methane emissions from oil & gas sector
  - Requires states to reduce methane emissions from hundreds of thousands of existing sources;
  - Expands and strengthens standards issued in 2012 and 2016 for methane and VOCs from new, modified and reconstructed sources; and
  - Encourages the use of innovative methane detection technologies and other cutting-edge solutions
- **The Department of Interior** is taking actions to reduce methane emissions from oil and gas operations from venting and flaring on federal lands
- **The Department of Transportation** is addressing methane emissions from pipelines that transmit natural gas

Inflation Reduction Act of 2022:

Methane Emissions and Waste Reduction Incentive Program

This new law, signed into law by President Biden in August 2022, provides new grant and fee authorities to reduce methane emissions

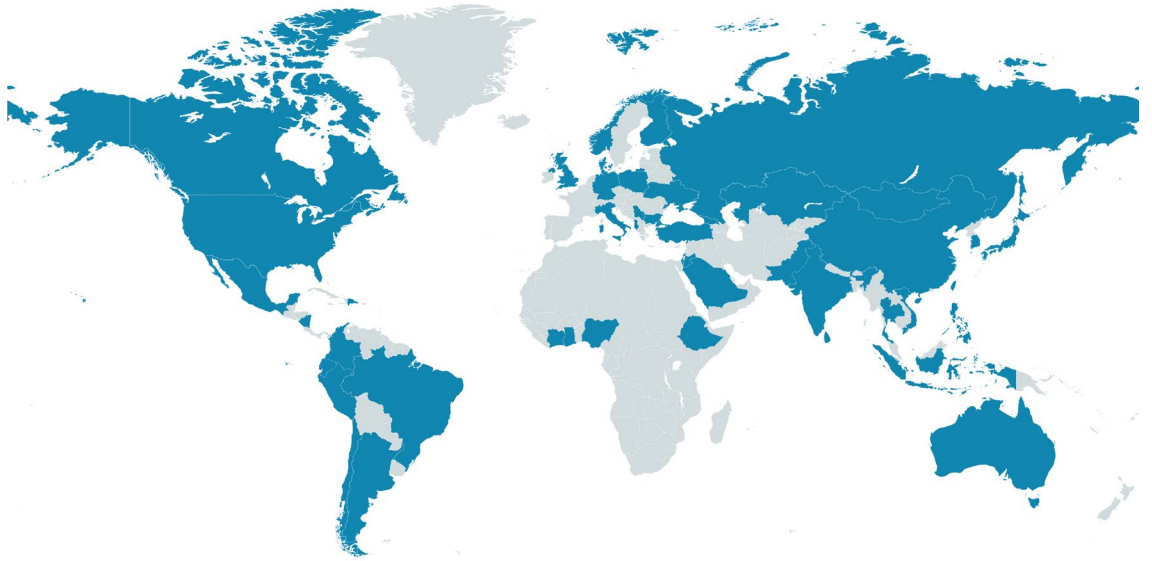
- **It establishes a waste emissions charge** for methane from applicable oil & gas facilities that report more than 25,000 metric tons of CO2 equivalent per year to the GHG Reporting Program and that exceed statutorily specified waste emissions thresholds.
  - Covers upstream and midstream facilities in the GHG Reporting Program
  - Fee starts at $900 per ton in 2024 and increases to $1,500 in 2026
  - Includes an exemption for facilities in compliance with regulations under 111(b) and (d)
  - EPA directed to complete rulemaking to revise GHG Reporting Program regulations for oil and natural gas facilities within 2 years
- **Allocates $1.55 billion to reduce methane emissions** through financial assistance (grants, rebates, contracts, loans, and other activities) and technical assistance
- **This law also provides separate $20 million fund to support methane monitoring**

Waste and Agriculture Updates

- New climate laws provide billions of dollars in tax credits, grants, loans and technical assistance for:
    - Capturing and utilizing landfill gas, diverting organic waste from landfills, and installing new technologies like biogas systems
    - Adopting farming practices that help combat climate change
    - Quantifying emissions and emissions reductions from agricultural activities

US Support for GMI

- US support for GMI includes hosting the secretariat and providing sector-specific technical support across all sectors
- GMI is a mechanism for US support for the Global Methane Pledge
- EPA with funding from Department of State provide technical support for developing tools, resources, policy analyses, capacity building, training and convening events



Agenda

- Introductions and Country Updates
- Discussions
  - Global Methane Moment
  - Draft Engagement Strategy
  - Draft High-Level Statement
- Secretariat and Subcommittee Co-Chair Updates
- Strategic Partner Update
- Global Methane Hub Introduction
- Wrap Up and Next Steps

Global Methane Moment Discussion

Tomás Carbonell
GMI Steering Committee Vice Chair
U.S. Environmental Protection Agency

Global Methane Moment Discussion and Questions

What can we do to further the conversation on methane mitigation?
Where can we, as an Initiative, make the biggest impact?

Evaluate GMI strengths and position with the methane community:

- GMI strengths are centered on **sector-specific technical expertise** across multiple sectors: understanding methane emissions and best practices and technologies for mitigating those emissions.

- GMI has developed **expertise in identifying barriers** to methane mitigation, whether they are technical, economic, or policy related.

- GMI has accomplished **capacity building** through developing numerous technical resources and tools:
  - site-specific analyses
  - national level and regional assessments,
  - best practice guidance documents
  - sharing that information through workshops and trainings

- GMI developed policy analyses (market and regulatory solutions to methane mitigation)

Global Methane Moment Discussion and Questions

How can GMI contribute to global actions on methane, including commitments to the Global Methane Pledge, and in relationship to other global efforts such as Oil & Gas Climate Initiative, Oil & Gas Methane Partnership, IMEO, etc.

New organizations focused on methane and or short-lived climate pollutants have joined the global stage.

Global Methane Hub Philanthropy	**International Methane Emissions Observatory (IMEO)** Part of UNEP, focused on methane data through the oil and gas sector

Other organizations all have overlap with GMI on methane mitigation activities and scope

Climate and Clean Air Coalition (CCAC)	**Green Climate Fund**
International Energy Agency (IEA)	**United Nations Economic Commission for Europe (UNECE)**
Multi-lateral banks (World Bank, European Bank for Reconstruction Development (EBRD) Asian Development Bank, etc)	

- GMI has successfully collaborated with CCAC on many Forum-like events (in 2016 in Washington DC and 2018 in Toronto)
- GMI has and is working closely with UNECE on coal mine methane for more than 10 years by co-locating GMI Subcommittee meetings and Group of Experts meetings and developing joint tools and resources

Global Methane Moment Discussion and Questions

- Incredible interest in our methane event in 2022 and we should continue the momentum and global attention on methane.
- The best for GMI to continue shining the spotlight on this topic is by hosting another premier event.
- Bringing together methane experts, policy makers, funders, and developers is essential to moving the needle forward on methane mitigation.
- Our Forums foster the development of these experts coming together to discuss how to break down these barriers and to learn from each other.

Global Methane Moment Discussion and Questions

GMI's Value Added

- If a country or municipality needs technical assistance or capacity building, what is the best way to proceed?
- Where is the best use of the assistance? Policy development? Or building capacity within a sector area? What has worked and what has not worked with your country?

Strategic Partners

- We don't want to duplicate action of other initiatives, therefore what's the best way to work with the other organizations?
- Is it to divide and conquer? For example, GMI has coal and wastewater expertise that's unique. Do we focus on these areas since many organizations are already focusing on oil and gas and agriculture?
- Is the Steering Committee interested in including the Global Methane Hub as a strategic partner?

Global Methane Forum in Geneva (2023)

- UNECE has offered to procure space at the UN Palais des Nations in Geneva in September 2023 in conjunction with their meetings to host a Forum
- Is the Steering Committee interested in hosting another similar event in 2023 in Geneva?
- Would we agree to partner with UNECE and CCAC?
- How can we strengthen the methane mitigation message in Geneva? What should be the focal theme or sector?

Draft Engagement Strategy Discussion

Vinod Tiwari
GMI Steering Committee Vice Chair
Ministry of Coal, India

Engagement Strategy Outline

I. Objectives

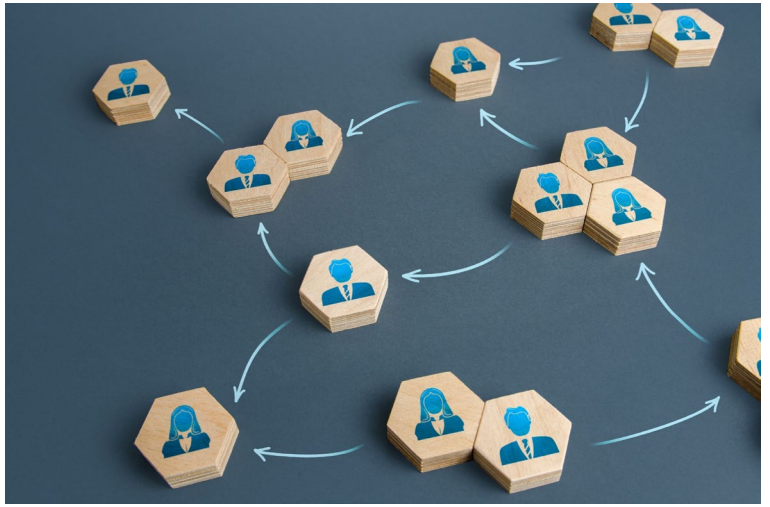
- Refine key messages to market GMI to delegates and stakeholders
- Strengthen the flow of information and cross-sector collaboration for internal stakeholders

II. GMI's Value Added

- Identify strengths, expertise, and role of GMI vis-á-vis other international organizations
- Identify the specific strengths, expertise, and role GMI can bring to stakeholder groups to address their needs

III. Refined Key Messages for GMI Stakeholders

- Messages for all stakeholders
- Messages for specific stakeholder groups



PLACEHOLDER: Engagement Strategy Discussion

Next Steps:

- Incorporate Steering Committee delegate feedback
- Share revised version for further comment

Draft High-Level Statement Discussion

Cécile Siewe
GMI Steering Committee Chair
Environment and Climate Change Canada

Draft High-Level Statement

- Joint statement by GMI and CCAC that:
  - Highlights urgency of acting on short-lived climate pollutants, including methane
  - Describes purpose of 2022 Forum and highlights topics discussed during event
  - Describes how GMI and CCAC will continue to collaborate to achieve ambitious global methane emissions reductions
- Plan to publicize the Statement during the Forum
- Feedback/suggestions?

GMI Secretariat Update

Monica Shimamura
GMI Secretariat Director

Steering Committee and GMI Partner Countries

Canada (Chair)

India (Vice Chair)

United States (Vice Chair)

Steering Committee Members

- China
- Colombia
- Ecuador
- Finland
- Ghana
- Indonesia
- Nigeria
- Saudi Arabia
- Serbia
- Turkey

Other GMI Partner Countries

- Albania
- Argentina
- Australia
- Brazil
- Bulgaria
- Chile
- Cote d'Ivoire
- Denmark
- Dominican Republic
- Ethiopia
- European Commission
- Georgia
- Germany
- Israel
- Italy
- Japan
- Jordan
- Kazakhstan
- Mexico
- Mongolia
- Nicaragua
- Norway
- Pakistan
- Peru
- Philippines
- Poland
- Republic of Korea
- Russia
- Sri Lanka
- Thailand
- Ukraine
- United Kingdom
- Vietnam

Global Methane Initiative

Highlights of Secretariat Activities

- Conducted intensive preparations for the Forum
  - Collaborating with CCAC to plan all aspects of the Forum
  - Securing a venue
  - Developing a robust agenda
  - Establishing a relationship with the Global Methane Hub
- Hosted a Steering Leadership meeting on 14 September
- Updated the Steering Committee Engagement Strategy
- Added tools and resources on the GMI website, including a new measurement, reporting, and verification (MRV) area

Forum Highlights

- Generated incredible interest!
  - Attendees registered from 91 countries and more than 500 organizations (virtual and in-person)
- 6 high-level plenary sessions on global efforts to reduce emissions from methane and other short-lived climate pollutants
- 36 technical sessions bringing together practitioners, policymakers and technical experts
- 3 site visits to an anaerobic digester, landfill, and wastewater facility

Oil & Gas Subcommittee Updates

James Diamond

Environment and Climate Change Canada

Coal Subcommittee Updates

Chiranjib Patra

Coal Mines Subcommittee Co-Chair

Update on New Training Resources

REPORT

Prepared new report for UNECE: Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation.

ONLINE TRAINING

Conducting Pre-Feasibility Studies for CMM Projects: This eight-module course is now available. Six of the modules have been translated into Chinese.

Conducting Pre-Feasibility Studies for Abandoned Mine Methane (AMM) Projects: This first five modules of this seven-module course are now available.

Basics of Coal Mine Methane Training is available.

GMI Coal Mines Subcommittee Accomplishments

- In India, a 25 km^2 area in the Jharia Coalfields in the state of Jharkhand has been identified for extraction of coalbed methane (CBM) prior to coal mining, and work has already started.
- In China, several new CMM-fueled power plants are under construction in the Shanxi, Shaanxi, and Guizhou provinces.
- In the United States, new ventilation air methane (VAM) destruction and abandoned mine methane (AMM) flare projects have come online, supported by the offset credit price of the California carbon market ($18/tCO2e).
- The Subcommittee is continuing to make efforts to expand membership and to identify sector-specific, regional, and informal organizations to partner with.

Upcoming efforts: United States - India

- A United States- India exchange on inventor; efforts to support coal sector emission information in India.
- Central Mine Planning and Design Institute (CMPDI) will work closely with U.S. EPA's team.

Biogas Subcommittee Updates

Nick Elger

U.S. Environmental Protection Agency

Strategic Partner Update: World Bank

World Bank

Introduction to the Global Methane Hub

Patty Rhee
Chief Partnerships Officer
Global Methane Hub

Looking Forward in 2023

26-30 Sept	Global Methane Forum
January 2023	Steering Leadership Meeting
Spring 2023	Steering Committee Meeting
September 2023	Global Methane Forum with UNECE

Thank You!

Next Steps:

- Host Global Methane, Climate and Clean Air Forum
- Finalize Steering Committee Engagement Strategy
- Plan 2023 Steering Committee Calendar

Global Methane Initiative

globalmethane.org

Appendix

Examples

Tools and Resources

Existing GMI Oil & Gas Resources

- *Best Practice Guidance for Effective Methane Management in the Oil and Gas Sector: Monitoring, Reporting and Verification and Mitigation (UNECE and GMI, 2019)*
  - Guidance and case studies for facility owners, operators and government policymakers.

- *Identifying and Evaluating Opportunities for Greenhouse Gas Mitigation & Operational Efficiency Improvement at Oil and Gas Facilities* (GMI 2020)
  - Introductory guidance on identifying, evaluating, and advancing cost-effective, high-impact opportunities to manage greenhouse gas (GHG) emissions and energy use at O&G facilities.

- *Under Development*: Online how-to training resources
  - Design and Implement a Leak Detection and Repair (LDAR) Program
  - Identify and Develop Methane Mitigation Projects

Capacity Building

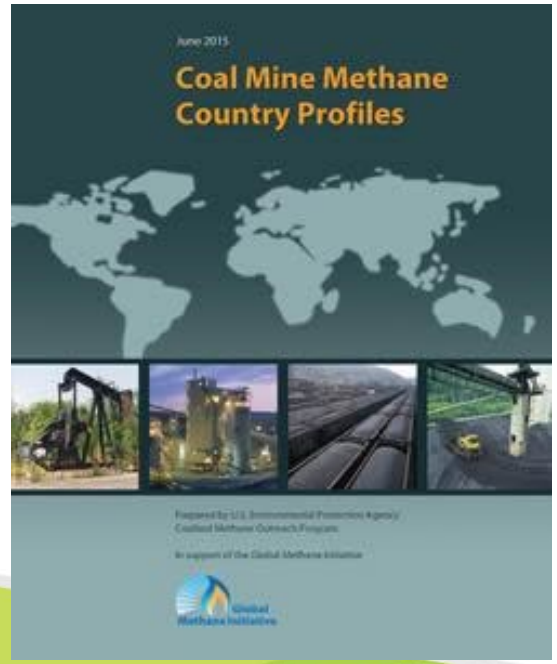
GMI 2020-2021 technical webinar series on **Methane Solutions: Policy and Technology**

- Mitigation technologies to reduce methane emissions
- Marginal abatement cost curves for methane emission abatement technologies
- Cost effective leak detection and repair programs
- Improved Collection and Verification of Methane Emissions Data for Effective Mitigation
- Materials and recordings of past webinars can be accessed on GMI's events page

GMI Tools for Coal Mine Sector

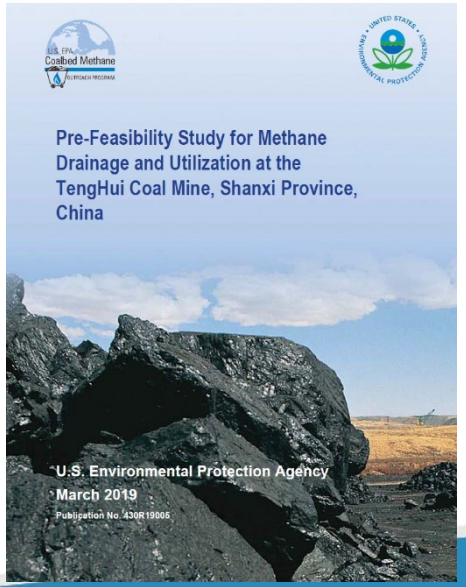
1. Gather background Information:

- CMM Country Profiles:

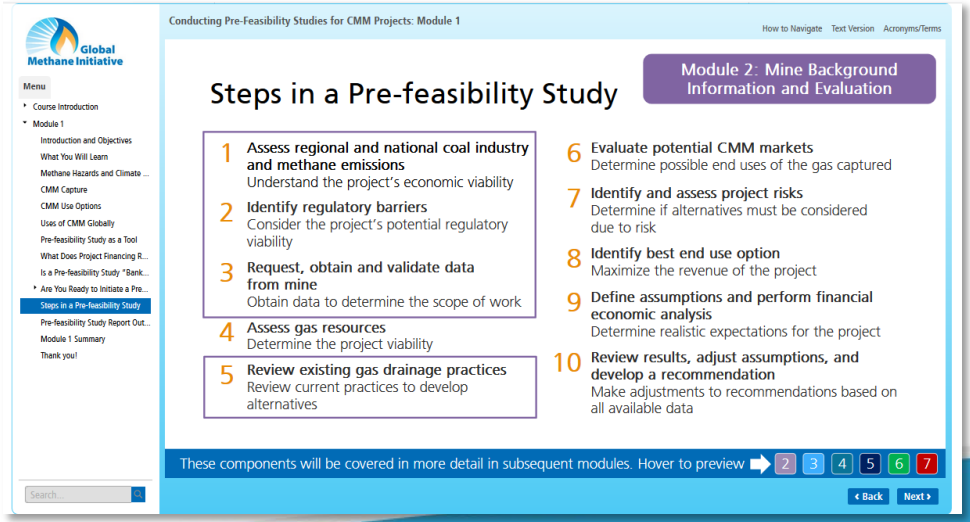


2. Identify project opportunities

- Prefeasibility and feasibility studies:
  - Over 50 studies in 11 GMI Partner countries



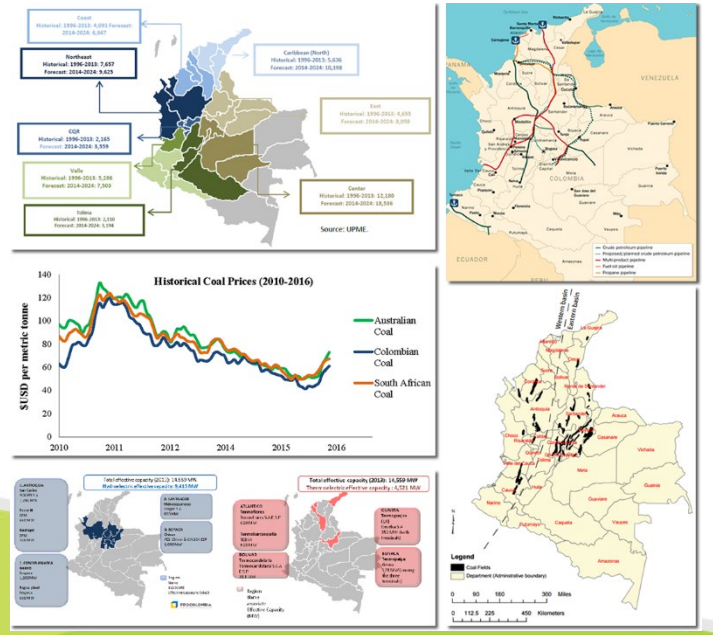
3. Evaluate CMM Resources: Training on how to conduct pre-feasibility studies at active and abandoned coal mines



GMI Tools for Coal Mine Sector (2)

4. Assessing the Market for CMM:

- CMM market studies for select countries



5. Analyzing the Cash Flows:

- CMM Cash Flow Model

6. Developing and Operating the Project:

- CMM Mitigation and Utilization Technologies Database
- CMM Project List

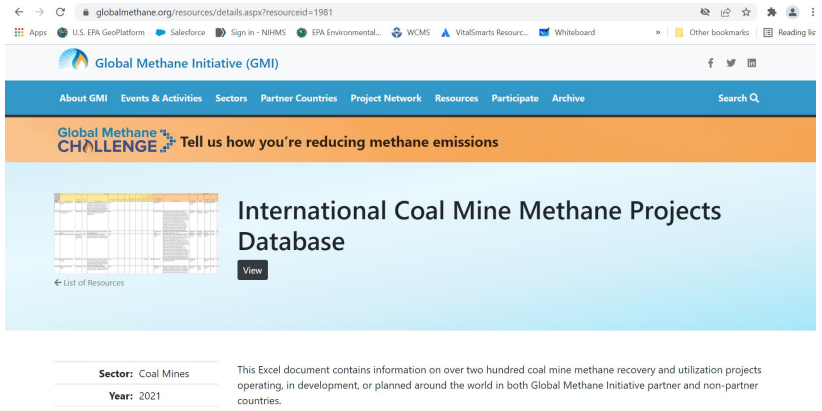
Coal Mine Methane Mitigation and Utilization Technologies and Project Profiles

Methane Combustion

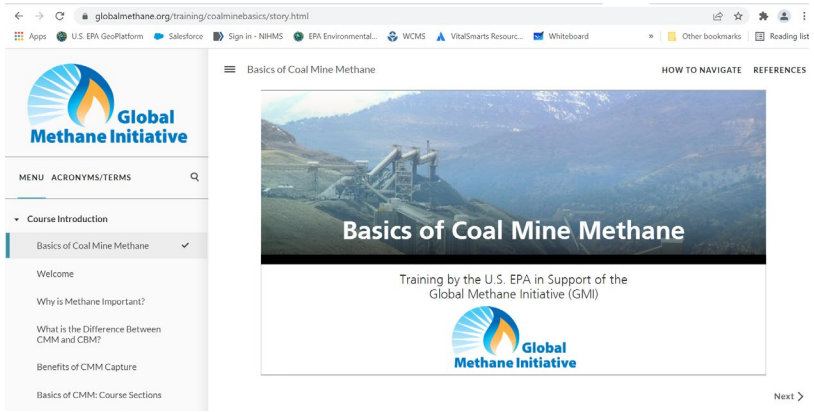
Gas Engines	
COMPANY	DESCRIPTION
Mines often vent medium quality gob gas instead of using it, because gob gas requires enrichment and treatment prior to pipeline injection. However, fuel for power generators does not require pipeline quality gas. Generally, IC engines can be adopted to generate electricity using coal mine gas with a methane concentration as low as 25%. Regulations in most countries require a minimum of 25% CH_4 concentration for utilization and some require 30% CH_4. While all internal combustion engines powered by CMM are capable of producing electricity, several also have the capability for waste heat recovery and co-generation. There has been considerable consolidation among engine manufacturers in recent years and the list below in some cases includes different brands produced by the same manufacturer.	
Caterpillar http://www.cat.com/power-generation 888-614-4328 toll free in United States and Canada +1 (309) 675-2337 International http://www.cat.com/en_US/support/contact-us.html	Caterpillar has introduced a range of larger, more efficient gas generator sets that can be fueled by CMM, landfill methane, or natural gas. The CMM fueled CAT ™ G3520C Gas Engine produces 2077 kW with an efficiency of about 40% and NOx ratings as low as 0.5 g/bhp-hr. Minimum methane concentration for gas engines may be as low as 25%. Large installed base of CMM power generation, mainly in Australia and China. http://www.cat.com/power-generation

GMI Tools for Coal Mine Sector (3)

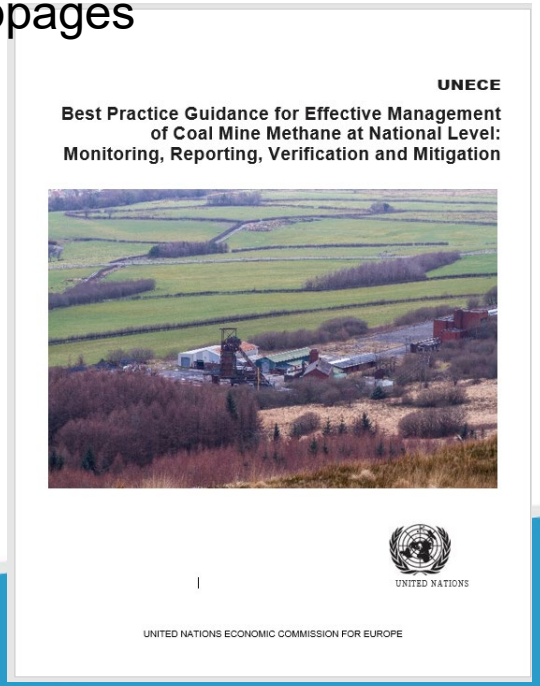
7. International Coal Mine Methane Projects Database: best available source of information on operational and former/future CMM projects globally.



8. New "Coal Mine Methane Basics" training that summarizes potential mitigation options



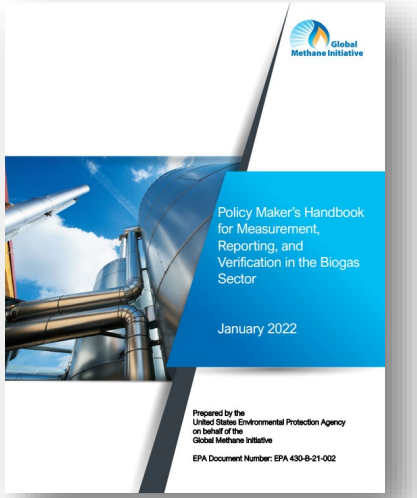
9. New Report on Best Practice Guidance for Monitoring, Reporting, and Verification for Coal Mine Methane is available on UNECE and GMI webpages



Biogas Sector (Landfills and Agriculture)

EPA, on behalf of the Global Methane Initiative, is developing tools and resources to support methane mitigation across the entire biogas sector.

Policy Maker's Handbook for Measurement, Reporting, and Verification in the Biogas Sector. Includes the agriculture, municipal solid waste, and wastewater sectors.



Biogas Toolkit

- Solid Waste Emissions Estimation tool (SWEET)
- Landfill Gas (LFG) Screening tool
- Anaerobic Digestion (AD) Screening tool, handbook, and operator guidebook
- Risk analysis checklist for AD projects
- OrganEcs cost estimating tool for managing source-separated organic waste