



# Coal Mine Methane: A Global Resource for Sustainable Development

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&  
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**Coal Mine Methane**

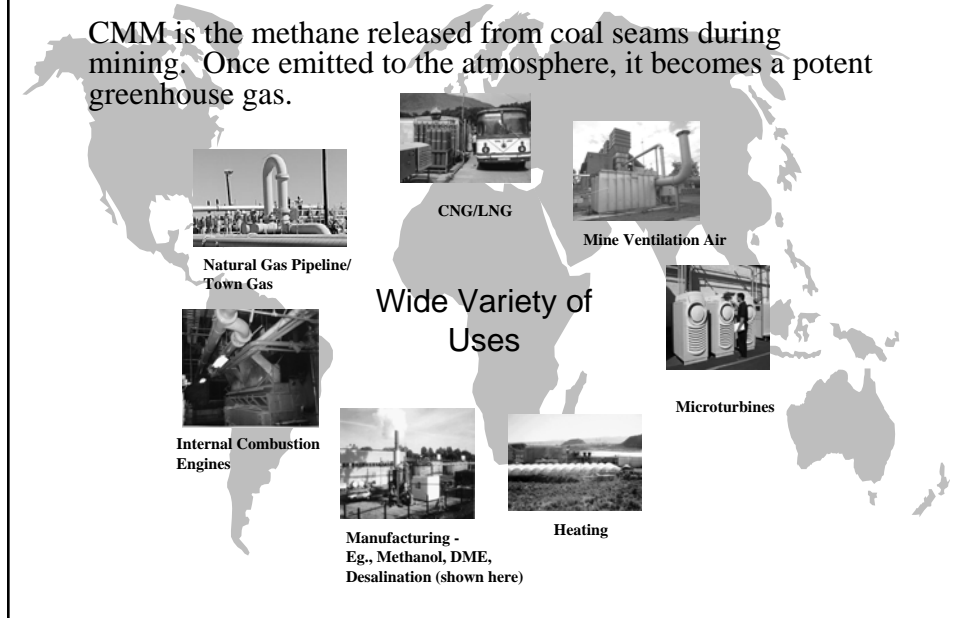


## Outline

- Introduction to coal mine methane
  - What is coal mine methane (CMM) and why is it an important issue?
  - Technical options for utilizing CMM
  - Project economics
- UNECE Activities

## What is Coal Mine Methane?

CMM is the methane released from coal seams during mining. Once emitted to the atmosphere, it becomes a potent greenhouse gas.



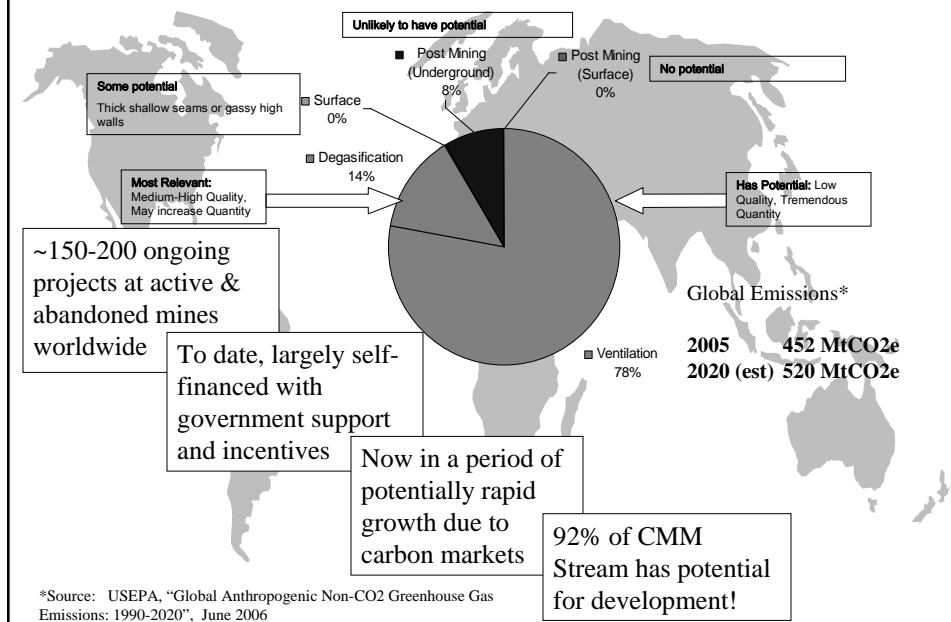
## Benefits of CMM Capture and Utilization

- Improved mine safety and productivity
- Reduced greenhouse gas emissions
- Productive use of an otherwise wasted energy resource
- Additional revenue centre
- Skilled job creation
- Positive corporate image

## Why Is This an Important Issue for ECE Member Countries?

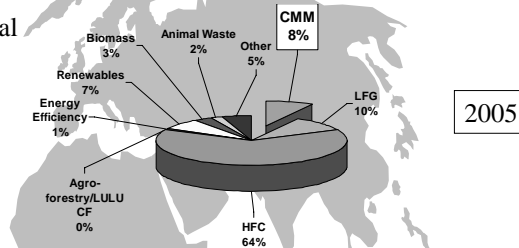
- Environmental
  - Region accounts for 40% of global CMM emissions
- Labour Safety
  - History of methane outbursts and explosions resulting in injury and death
- Public Safety
  - Methane can migrate into enclosed structures through subsurface pathways
- Commercial
  - Effective management of CMM increases mine productivity and profitability
  - Revenue stream through commercial markets (e.g., electric power or natural gas sales to the grid) and carbon markets
- Public policy
  - Opportunity for technology and knowledge transfer
  - Supports sustainable development and promotes energy security

## Do CMM Project Make Economic Sense?



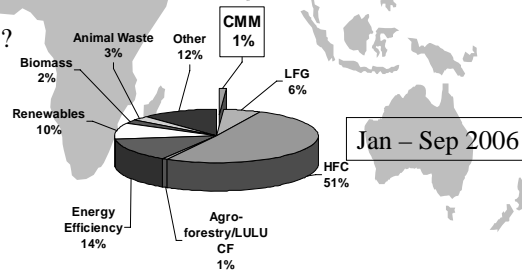
# CMM and the Carbon Markets

- Large carbon revenue potential
- World Bank report - buyers believe CMM assets able to deliver more predictable volumes
- Technologies commercially proven

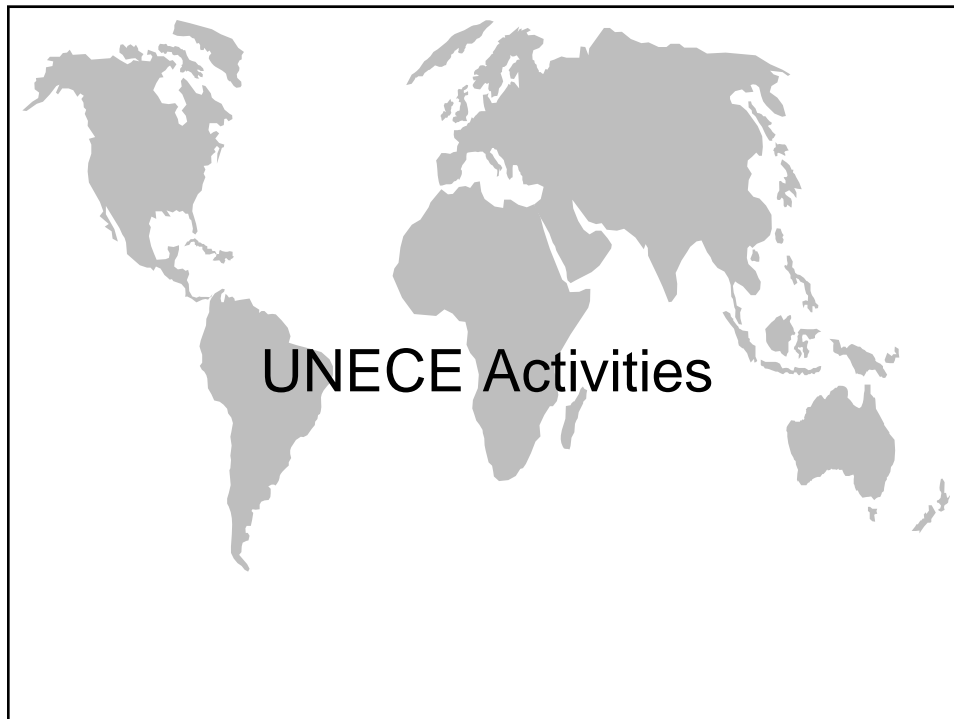


## So Why only 1% of Carbon Volumes?

- Regulatory frameworks developing
- Reliability of gas flows
- Indecision by project hosts
- Limited resources - priority for host mines is coal production



\*World Bank, "State and Trends of the Carbon Market - Update January 1 - September 30, 2006"



## UNECE Ad Hoc Group of Experts on CMM

- Established - December 2004
- Next meeting: 7-9 March 2007, Geneva
- Bureau membership
  - Germany, Kazakhstan, Poland, Russian Federation, Ukraine
    - Government - 1 (+1 vacancy formerly held by US)
    - Private sector - 2
    - Quasi-governmental - 2
    - NGO - 2
- General membership
  - ECE and non-ECE member countries
  - Other international organizations - UNDP, ILO
  - Private sector - mining industry, finance, project development, consulting
  - NGOs
- Task Force on Economic Benefits of Improving Mine Safety through Extraction and Use of CMM

## Programme of Work

- Guided by results of a questionnaire distributed to members of the AHGE in 1st Quarter 2006
  - 83 Responses
    - 26 countries
    - 2 international organizations
    - Governments, private sector, NGOs, research institutes, and international organizations
- Responses establish priorities for the Group
  - Mine safety
  - Uniformity of terminology
  - Identify technical options
  - Project finance
- To be effective, AHGE on CMM will concentrate on limited set of issues with achievable outcomes

## Tasks

- Mine Safety
  - Focus on developing best practices and strong policy/regulatory frameworks for upstream mine degasification
  - Concept paper submitted to UNDESA under the 6th Tranche of the UN Development Account to support this effort
- Standardization of terminology
  - Terminology and standards vary by country which is confusing for investors and project developers
  - Standardization will enhance efforts to develop projects
- Clarify supply of low-quality CMM and identify technical options for use
  - A significant share of the CMM produced worldwide, especially in developing countries and economies in transition is believed to be below the 25% - 30% threshold often quoted by manufacturers for efficient and safe combustion

## Tasks

- Project finance (Extra-budgetary project)
  - Assist projects with development of investment grade documents and presentation before EE21 and other investment funds
  - Regional workshops and information dissemination
- Other
  - Category II paper for Environment for Europe ministerial in Belgrade, October 2007
  - Support objectives and activities of the Methane to Markets Partnership

## Summary

- CMM projects offer excellent opportunity to generate revenue while making a positive environmental and social impact.
- Emission reductions are relatively small compared to some other options like CCS but are cost-effective contributing to a portfolio of carbon mitigation projects throughout the coal supply chain
- AHGE has developed a programme of work focusing on limited set of issues for which real and achievable outcomes can be delivered and which bring value added to UN member countries and the global coal industry

## Thank You!



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