



# European Commission activities in CMM and CBM

Eero Ailio  
External Relations  
Coal & Oil Policy

Directorate-General  
for Energy  
and Transport

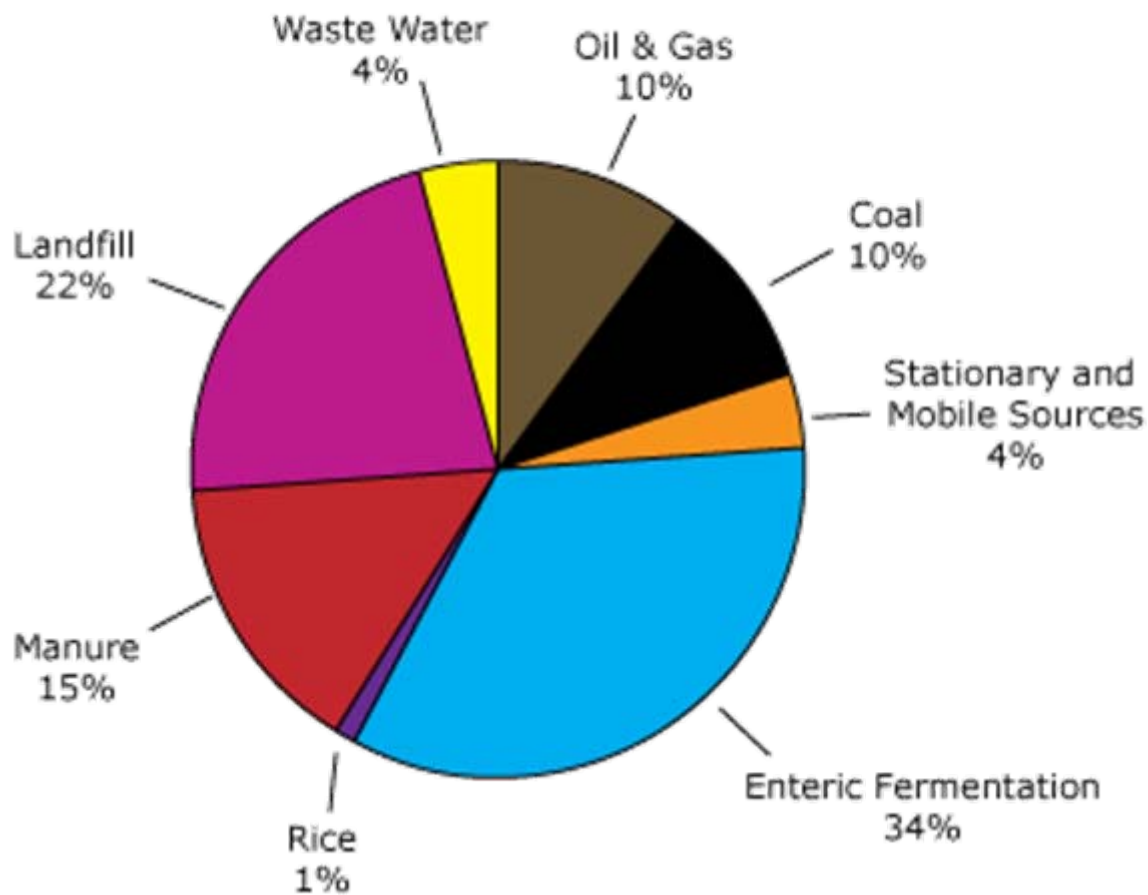


# Energy & climate objectives

- European Climate change and Energy Policy – European Climate Change Programme
- UNFCCC approved by Council Decision 94/69/EC
- Ratification of the Kyoto Protocol – Council Decision 2002/358/EC – 8 % CO<sub>2</sub> reduction obligation by 2012 (vs 1990)
- To limit global warming to max 2 C° above pre-industrial level
- GHG: -20% (CPH -30%), efficiency +20%, RES: +20% by 2020
- Achieve the stabilisation of GHG concentrations in the atmosphere by reducing GHG emissions
- Reduction of Methane emissions — GHP is 21 times higher than that of CO<sub>2</sub>

# ● Sources of methane in EU (Source: EPA)

Countries of the European Union 2005  
Anthropogenic Methane Emissions



## Activity map

- Membership in Methane to Markets (M2M) Partnership since September 2007
- Represented in the working groups on the coal sector and on oil and gas operations
- Focus on supporting projects in third countries to further develop and demonstrate CMM and CBM technologies
- Financing projects through three channels: ENRTP, 7FWP and CSRF

# ● Three EC financing instruments

- Thematic Programme for Environment and Sustainable Management of Natural Resources (ENRTP)
  - » A) integrate environmental protection requirements into the EC's development and other external policies,
  - » B) promote EC's environmental and energy policies abroad in the common interest of the EC and partner countries and regions.
- Framework Programme for Research (FWP)
  - » Focus on Research and Development in different thematic areas
  - » Theme 5: Energy
  - » International cooperation
- Research Fund for Coal and Steel
  - » Mainly coal R&D but some overlaps with methane issues

## CMM projects: ENRTP

- Projects under EU Thematic Programme for the Environment and sustainable management of Natural Resources, including energy ( ENRTP ) in period 2007 – 2010
- CMM project in Ukraine (2008-11)
- Preparation of other projects is possible – eligibility for projects on methane emission reduction from coal mines

## CMM projects in FP 7 Energy 2007 5&6.2.5.

- Call for proposals: “Extending the value chain for GHG emissions other than CO<sub>2</sub> with coal production and use”
- Focus on developing a viable strategy to recover methane and use it as an energy source in countries with large coal deposits. Objectives:
- Development of generic decision guidance for optimal use of CMM methods for economically interesting schemes for potential investors
- Analysis of legal/ administrative situation (PL,CZ,RU,UA,RO,KZ and UK).
- Development and operation of test units for new technologies like VAM and liquefaction ( two projects sites in Russia and Ukraine selected)
- Analysis of emission reduction potential from CMM utilisation
- Collaborative project (CoMeth) coordinated by Fraunhofer Gesellschaft e.V. – (Nov2008->)

## CMM projects in FP 7 Energy 2008 5 & 6.2.1.

- Research Call WP 2008 “ Extending the value chain for GHG emissions other than CO2”
- Content: to develop strategies and technologies to extract methane in a controlled way – verify the exploitation for energy usage
- Challenge: low awareness affects response rate



# Research Fund for Coal and Steel projects

- COALSWAD Project: “ Investigation of adsorption and swelling behaviour of coal to determine the feasibility of CO<sub>2</sub> sequestration and CH<sub>4</sub> production enhancement
- Objective: estimation of CO<sub>2</sub> sequestration capacity and CH<sub>4</sub> production rate in coal – contract in process
- Related project HUGE: “ Hydrogen oriented underground coal gasification for Europe (-2010, Poland coordinator)
- Objective: underground gasification of coal in a dynamic geo-reactor and CBM usage and CO<sub>2</sub> sequestration in coal deposits  
Coordinator GIG Poland

# EU- China project on CMM

- Project under EU-China Energy and Environment Programme – “Feasibility study of CBM in China”
- Content: exploration of CBM resources in China, the available extraction technologies, technical barriers and economic assessment of CBM resources in China
- Completed in March 2008
- Report at <http://www.eep.org.cn/>



## Summary

- Cooperation in implementation of methane recovery technology in Eastern Europe, China and India
- Regular calls for proposals under EC 7th Research Framework Programme (FP7) to include methane topics
- Most recent call opened in July 2009 (closure in October)
- Possible projects under EU Thematic Programme for the environment and sustainable management of natural resources, including energy period 2007- 2010 - ENTRP- for example in Eastern Europe and Asia

## Potential future activities

- Joint initiatives on reduction and use of methane as part of the energy dialogues and bilateral consultations with coal countries such as Russia, India, Ukraine.
- Further activities under the EU-China Action Plan on Clean Coal and the EU-China Energy and Environment Programme
- Diversification of inputs to Methane To Markets Partnership

# ● Reserve slides



# Barriers for the use of CMM

- Insufficient knowledge about possibilities and concepts for energetic use of CMM
- Changing gas composition
- The fluctuant and not predictable gas quality and amount
- Missing economic options for the energetic use of CMM gases with high methane content and low methane content
- Country and site specific infrastructural, regulatory and administrative conditions
- Different economic conditions hindering the technology transfer of Western European technology and concepts