Methane to Markets

An International Framework to Advance the Recovery and Use of Methane as a Clean Energy Source

Jeremy Eppel, Defra
Ing. Jorge Hilbert, INTA

Co-Chairs Methane to Markets Agriculture Subcommitee

14 May 2007

Methane to Markets

Overview

- M2M Snapshot
- Why focus on methane?
- M2M Structure and Activities
- Agriculture Sector
- Objectives of this Workshop and Subcommittee meeting

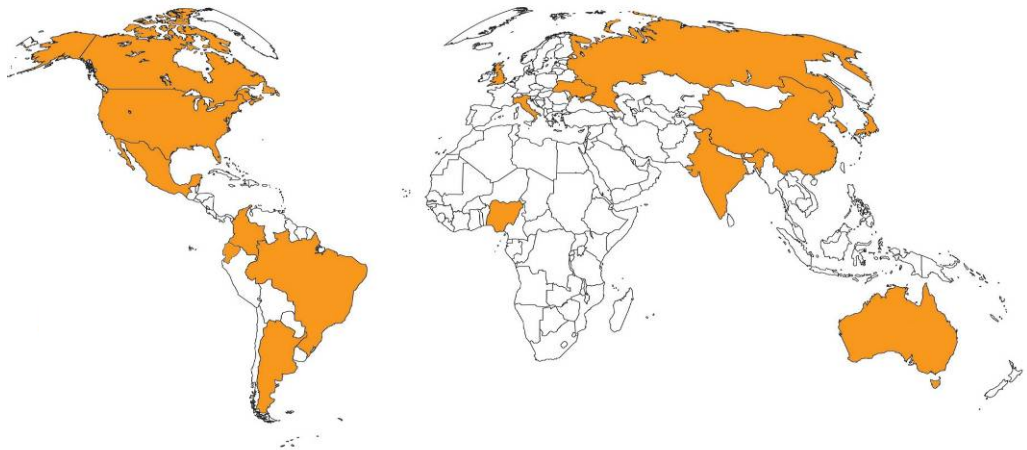
Methane to Markets

Methane to Markets Partnership Overview

- Advances recovery and use of methane as a valuable clean energy source and encourages development of ***cost-effective*** methane recovery and use projects

- 20 Partner Countries

Argentina	**Japan**
Australia	**Korea**
Brazil	**Mexico**
Canada	**Nigeria**
Colombia	**Poland**
China	**Russia**
Ecuador	**Ukraine**
Germany	**United Kingdom**
India	**United States**
Italy	**Vietnam**



- Private companies, multilateral development banks and other relevant organizations participate by joining the ***Project Network***
  - *over 500 organizations now participating*

Cost-Effective Projects Recover and Use Methane

Coal Mines

Oil and Gas Systems

Landfills

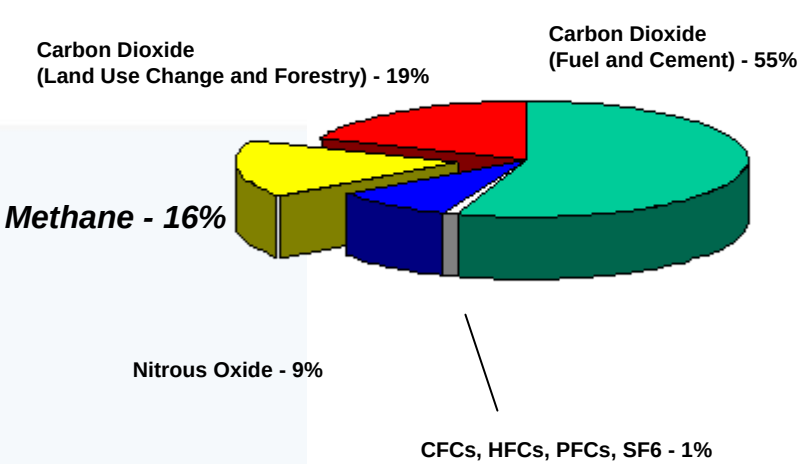
Livestock Waste

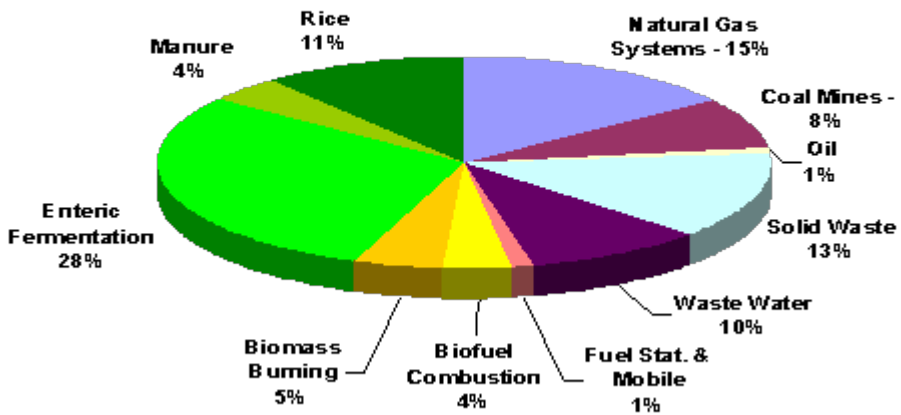
Methane to Markets

Why focus on Methane?

- A potent greenhouse gas (GHG) with 100-year global warming potential of 23; atmospheric lifetime of ~12 years
- The 2nd most important GHG accounting for ~18% of total climate forcing
- A primary constituent of natural gas and a valuable, clean-burning energy source

Global GHG Emissions in 2000
40,702 million tonnes carbon dioxide equivalent ($MtCO_2e$)





Methane to Markets

Significant Benefits of Methane Recovery and Use Projects

BENEFITS OF METHANE PROJECTS

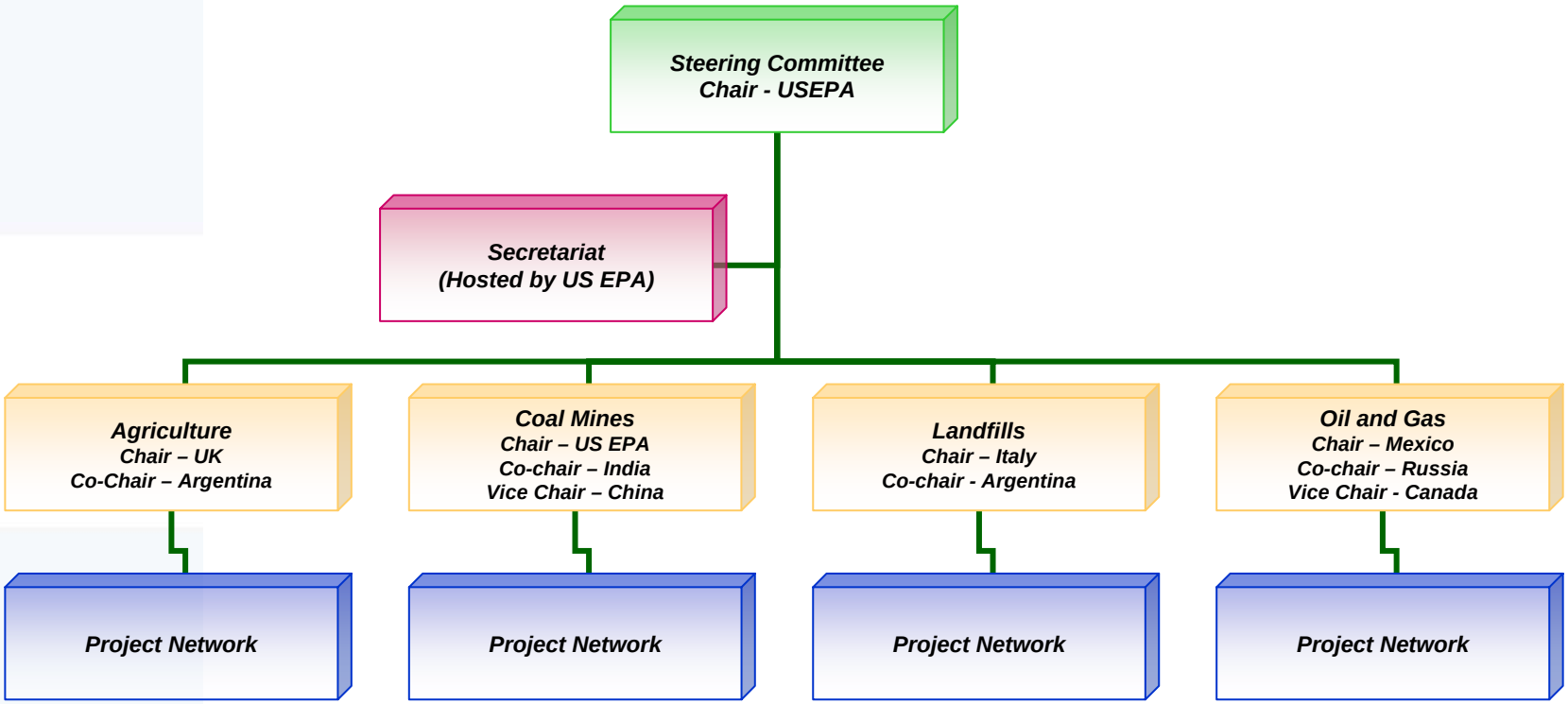
- Reduced greenhouse gas emissions
- Increases energy efficiency at oil and gas facilities
- Reduced waste of a valuable fuel and important local energy source and
- Improved industrial safety and productivity
- Improved air quality, water quality and reduced odors
- Economic growth and energy security

BUT BARRIERS EXIST…

- Lack of awareness of emission levels and value of lost fuel
- Lack of information on and training in available technologies and management practices
- Traditional industry practices
- Regulatory and legal issues
- Limited methane markets and infrastructure
- Uncertain investment climate

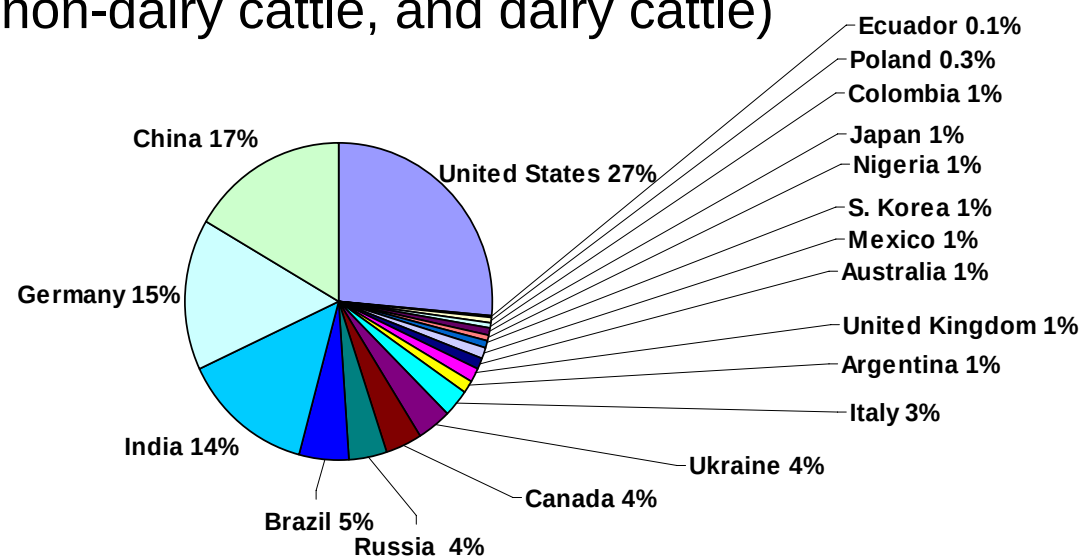
Methane to Markets

M2M Organization and Structure



Global Emissions from Agriculture (Animal Waste)

- Methane is produced and emitted during the anaerobic decomposition of organic material in livestock manure
- Globally, livestock manure contributes ~70 MMTCE of methane emissions
- Three groups of animals account for >80% of total emissions (swine, non-dairy cattle, and dairy cattle)
- M2M Countries represent 62.4% of global emissions from the Manure Management sector



Methane to Markets

M2M Focus on Agriculture

- When M2M launched, AD was not included– instead a Taskforce was created to investigate whether it should be added as a 4th Sub-Committee
- Taskforce recommended including Agriculture at the November 2005 M2M Partnership meeting in Buenos Aires
  - UK and Argentina nominated as co-chairs
- First Sub-Committee meeting and M2M AD workshop hosted by Defra in November 2006 in Berkshire, UK
  - Workshop report now available
  - Action Plan completed and updated

Methane to Markets

Agriculture Action Plan

- Promote economically viable anaerobic digestion of animal wastes through identifying and overcoming barriers to project development.
- The Action plan was developed over the last year and identifies actions to overcome barriers in the following themes
  - Human Resources
  - Technology
  - Finance and Economics
  - Policy Constraints
  - Outreach and Education
  - Project Identification and Development

Methane to Markets

Action Plan (continued)

- Key Activities
  - Develop country profiles for each M2M country
  - Advertise conferences, training opportunities on the M2M website
  - Share information on proven technologies
  - Address finance issues through workshops
  - Identify case studies and examples of best practice
  - Develop M2M standards for calculating baseline methane/ GHG emissions from AD projects
  - Each country to recruit members to the Project Network
  - Consider additional regional and country outreach activities.
  - Each country to identify and promote projects/investment opportunities

M2M Partnership Expo – 30 Oct 2007

Hosted by China's National Development and Reform Commission and U.S. EPA, the Expo will:

- Highlight methane captu and use technologies ar services in a trade show format
- Showcase project opportunities to potentia investors
- Parallel sector tracks covering technical, polic financing, and regulator issues related to project development.

Beijing, China

30 October – 1 November 2007

For more information go to: www.methanetomarkets.org/expo

Methane to Markets

Objectives of this Workshop and Sub-Committee Meeting

- Regional outreach to AD community in Latin America
- Share lessons learned from projects and technologies that are being implemented in Latin America and internationally
- Identify challenges and solutions to grow the AD sector in cold and temperate climates
- Promote greater focus on practical implementation of AD projects in agriculture
- Prepare for M2M Partnership Expo, Beijing 2007 and focus Sub-Committee's efforts on next steps.

Structure of the workshop

- **Session 1-** "*Use of anaerobic digestion to treat and capture methane from agricultural residues: farmers' and regulators' perspectives*"
  - *"Opportunities and problems as seen from the production sector"*
  - *"Regulatory and practical requirements and implementation plans at the national and provincial level"*
- **Session 2-** "*Challenges and solutions to implementing anaerobic digestion in cold and temperate climates*"
  - *"International experiences in using anaerobic digestion in the agricultural sector"*
  - *"Regional experiences in using anaerobic digestion at the production scale in the agricultural sector"*
  - *"National experiences in using anaerobic digestion at the production scale in the agricultural sector"*
- **Session 3** - *Technical assistance at national level*
- **Session 4-** *Financing anaerobic digestion projects*
- **Session 5-**"*Field Trip to the national research centre of INTA (CNIA), Castelar*"
- **Session 6-** *Using anaerobic digestion in the Agro-industrial sector*
- **Session 7-** *Workshop session on technology and knowledge co-operation*
- **Session 8-** *Presentation of projects to be implemented.*
- **Conclusions and Recommendations**