



Methane to Markets

Agriculture Subcommittee Report to Steering Committee

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Overview

- Sector Action Plan Summary
- Activities since the 2006 Rome Meeting
 - Recent Subcommittee meetings
 - Partnership Expo Involvement/Marketing Efforts
 - Selected Subcommittee Achievements
 - Activities by Country
- Issues for Consideration/Decision by the Steering Committee
- Next Steps and Conclusions

Background and Sector Action Plan Overview

- Sources of methane in the agriculture sector include:
 - Livestock manure management
 - Livestock enteric fermentation
 - Rice cultivation
 - Agricultural waste burning
- The Agriculture Subcommittee has focused on methane from livestock manure management.
- Livestock manure management offers the most viable, short-term opportunities for methane recovery and utilization.
- These opportunities can be realized using currently available technology and offer benefits in terms of improved environmental quality.

Background and Sector Action Plan Overview (continued)

- The key obstacles to project development in this sector can be categorized into the following 6 key themes:
 - National capacity
 - Technology
 - Financial and Economic
 - Policy
 - Awareness
 - Project Identification and Development
- The Action Plan currently includes types of activities that can overcome these obstacles, as presented in the following table.

Background and Sector Action Plan Overview (continued)

Obstacle to Project Development	Examples of Current Action Plan Items to Address Obstacles
National capacity	<ul style="list-style-type: none"> ▪ Promote capacity building in governments ▪ Provide AD experts in the Ag Country Profiles
Technology	<ul style="list-style-type: none"> ▪ Support technology demonstrations ▪ Bring together technology developers in the Project Network
Financial and Economic	<ul style="list-style-type: none"> ▪ Each country to identify and support investment opportunities ▪ Include possible financiers in the Project Network
Policy	<ul style="list-style-type: none"> ▪ Share lessons learned from policy development ▪ Analyze differences in policy portions of Country Profiles
Awareness	<ul style="list-style-type: none"> ▪ Keep up-to-date information on the M2M Web site ▪ Hold international seminars on ag methane recovery and use
Project Identification and Development	<ul style="list-style-type: none"> ▪ Track on-going projects in the M2M project database ▪ Present projects at the Expo

Subcommittee Achievements since December 2006

- **Subcommittee Meeting and Workshop on Strategies and Challenges to Implement Anaerobic Digestion Systems in Agriculture – 14 to 16 May 2007, Buenos Aires, Argentina**
 - 15 attendees at the Subcommittee Meeting
 - Approximately 90 participants in the Workshop
 - Countries represented: Argentina, Brazil, Canada, Italy, Mexico, United Kingdom, United States
 - Subcommittee meeting participants provided input on the Expo agenda and next steps for the Subcommittee
 - Workshop attendees shared anaerobic digestion information and participated in a field trip to a research farm



Subcommittee Achievements since December 2006 (continued)

- **Activities to support M2M Expo**
 - Convened small working group to focus on preparing for the Expo (e.g., develop sector-specific agenda, identify session topics and speakers).
 - Outreach to attendees from the industry sector, including Project Network members as well as equipment vendors.
 - Development of project posters and flyers to be presented at the Expo.



Example Activities by Country

- **Canada**
 - **Awareness**
 - Canadian farmers are well aware of the environmental and long-term economic benefits of biodigestion of animal wastes, however start-up costs and a poor availability of proven technology has limited its adoption.
 - **National capacity**
 - Although AD is growing in Canada, there are still fewer than a dozen farms equipped with this technology.
 - **Technology**
 - Low and high temperature AD are presently in operation across the country.
 - **Financial/Economic**
 - The Government of Canada spent \$1.3 million between 2002 and 2008 as seed money to establish the ECoAMu (Energy Co-generation from Agricultural and Municipal Wastes) program.
 - **Project identification and development**
 - ECoAMU project and a project to quantify fugitive emissions from biodigesters are underway.
 - **Policy**
 - The Government of Canada continues to support research and development of biodigestion for energy production.

Example Activities by Country (continued)

- **Poland**
 - **Awareness**
 - Awareness of the possibility of methane production in the agriculture sector is quite low.
 - **National capacity**
 - Poland has 3,040,558 Big Units of animals. Each BU can produce 0.7 m³ of methane per day so total daily production can be estimated on 21,283,906 m³ of methane per day.
 - **Technology**
 - There are many companies which offer technology of methane production but mostly in other sectors. Those technologies could be easy used in the agriculture sector. There is one methane production plant in agriculture sector.
 - **Financial/Economic**
 - There are insufficient economic mechanisms (especially taxes) to gain adequate financial benefits in comparison to investment costs for renewable energy sources.
 - **Project identification and development**
 - Research at the moment focuses significantly on market issues relating to economic potential for methane recovery systems.
 - **Policy**
 - Poland is determined to keep action to prevent climate change high on the international agenda. Climate change is a key priority for national policy.

Example Activities by Country (continued)

■ Mexico

— Awareness

- Conducted workshop on AD design, installation and operation in swine farms.
- Conduct presentation at the Mexican National Swine Conference to promote and create awareness of M2M efforts to date.

— National capacity

- Conduct technical workshops aimed at swine producers and research/education institutions.
- Develop national technical standards and a certification system for AD design and installation.

— Technology

- Assess two different AD technologies: covered lagoons and modular covers.

— Financial/Economic

- Link credit and financial institutions, companies and agriculture producers in FIRCO's biodigester development plans.

— Project identification and development

- Identified 14 farms where methane capture and use projects could be developed; the farms will be exhibited at the "Methane to Markets Partnership Expo" in Beijing.
- Identify and develop a significant number of projects in the next 5 years; FIRCO plans to support the development of 50 biodigesters in 2008.

— Policy

- Develop a Voluntary Mexican Norm (NMX) that will provide incentives to swine farms to use manure management best practices, including the use of AD.

Example Activities by Country (continued)

■ **United Kingdom**

– **Awareness**

- The Government is working with stakeholders to increase awareness of AD.
- Government Ministers highlight the important role which AD can play in meeting climate change, renewable energy, waste management and rural development goals.

– **National capacity**

- The Government is promoting AD through the Waste and Resources Action Programme (WRAP) and the Carbon Trust.

– **Technology**

- A number of projects funded by the Government aimed at optimisation of AD systems and minimising their environmental impacts are underway or have been completed.

– **Financial/Economic**

- In May 2007, the Government proposed that AD receive additional support under the market support mechanism for renewable energy technologies.
- The Rural Development Programme for England 2007-2013 will provide more AD funding.

– **Project identification and development**

- Two new agricultural AD plants are being constructed under the Bio-Energy Capital Grants Scheme, worth £565k.
- The Government currently has over 70 Clean Development Mechanism (CDM) projects involving methane registered, including in Mexico, Brazil, Philippines and India.

– **Policy**

- The Government published the UK Biomass Strategy in May 2007.
- In September 2007, a workshop brought together representatives of key stakeholder groups with an interest in AD.
- A Government standard for digestate will help to determine when the material has been fully recovered and can be used as a product.

Example Activities by Country (continued)

- **United States**
 - **Awareness**
 - The U.S. EPA's AgSTAR program provides outreach information to the public to promote awareness of AD.
 - The U.S. EPA promotes AD in its role of Administrative Support Group for the Methane to Markets Partnership.
 - **National capacity**
 - The government supports AD through the AgSTAR program.
 - **Technology**
 - The government provided technical support to 5 methane recovery projects in China, Vietnam, and Thailand. Another 12 projects are in the planning stages.
 - **Financial/Economic**
 - The U.S. Farm Bill increased funding of U.S. AD projects.
 - The U.S. also provided grants for international AD projects in Colombia, India, China, Vietnam, Korea, and Mexico.
 - **Project identification and development**
 - The AgSTAR Program identifies and promotes development of digesters in the U.S., there are currently approximately 130-135 digesters. Approximately 5 more digesters are expected to be developed in 2007.
 - The U.S. assisted with the development of 5 demonstration projects on swine farms in Mexico.
 - **Policy**
 - The state of California is in the process of developing a mandatory program for GHG reductions, other states may follow the lead.

Issues for Consideration/Decision by the Steering Committee

- **Currently, the Agriculture Subcommittee focuses on promoting economically viable anaerobic digestion of livestock manure waste.**
 - **The Subcommittee would like to formally include anaerobic digestion of food waste and slaughterhouse waste in the scope of the program.**

- **The Agriculture Subcommittee acknowledges that livestock enteric fermentation is the largest source of methane emissions from the sector.**
 - **However, more research is required to determine the most effective way to reduce these emissions.**
 - **The Subcommittee does not therefore plan to incorporate this source into the scope of the Subcommittee work.**

Next Steps

- **Next Subcommittee Meeting**
 - Spring 2008
 - Possibly in Mexico City, Mexico

- **Next Steps**
 - **The Subcommittee will update the Action Plan to reflect country priorities and the charge from the Steering Committee.**
 - **The Subcommittee is developing a document to summarize the current methodologies used to evaluate environmental performance of anaerobic digesters. This document may provide a basis for developing a draft methods report for review and comment by selected international experts.**
 - **The Subcommittee is also creating a document to outline a framework to better estimate methane leakage rates from various anaerobic digester systems to improve upon the leakage rate estimates provided by IPCC.**