

Agriculture Subcommittee Progress Report

**1st Steering Committee Meeting
12-13 October 2011**

Krakow, Poland

Chairs Anil Dhussa, MNRE (India)
Jorge Hilbert, INTA (Argentina)



Overview

- Activities since March 2010
 - Venice Highlights
 - Webinar Highlights
 - International AD database
- Next Steps

Subcommittee Activities Since March 2010

- Venice Meeting Highlights (Nov 2010)
 - Subcommittee Leadership Discussed
 - The subcommittee is seeking another co-chair
 - Resource Assessments
 - EPA provided an overview of the status of the RAs
 - Ecuador presented results of the Ecuador RA
 - Possible Future Work
 - EPA presented an overview of the purpose of the international AD database
 - EPA provided a demonstration of a simple excel tool that was developed to help plan AD systems

Subcommittee Activities Since March 2010

- Webinar Highlights (June 2011)
 - Subcommittee Leadership Discussed
 - Delegates were to work with their respective governments to determine if they could fill the position
 - Topics for the Krakow Meeting
 - Suggestions were to be provided to the ASG
 - Partner Action Plan
 - Delegates provided comments to the ASG in June 2011
 - Method to Encourage Participation
 - Delegates should encourage private sector participation
 - International AD Database
 - EPA presented an update on progress

Subcommittee Activities Since March 2010 *(continued)*

- International Database
 - U.S. EPA has continued work on this task
 - U.S. EPA developed the framework and a template and glossary
 - Delegates will provide country-specific input using the template

Next Steps

- Next Subcommittee Meeting
 - May or June 2012
 - Possibly a webinar
- Next Steps
 - Agriculture Subcommittee delegates will look for opportunities to implement the international guidance
 - U.S. EPA and delegates will continue the development of the international AD database

Appendix:

Example Activities by Country

- **Argentina**
 - AD projects are being conducted at the Instituto Nacional de Tecnología Agropecuaria (INTA) Research Center.
 - INTA has also created a new bioenergy program, under which AD will be supported as a bioenergy source.
 - U.S. EPA has collaborated with INTA to develop a country assessment.
 - Several new projects were set up in the agricultural and agroindustrial sector
 - There is a development of a M2M Argentina partnership organizing different institutions and private sector.

- **Australia**
 - The Australian Government has pledged to use 20 percent renewable energy by the year 2020 and is in the process of establishing a mandatory GHG trading scheme.
 - The Australian government and industry research organizations have invested approximately \$2 million towards the research and development of methane capture and use technology in the Australian intensive livestock industries.

- **Canada**
 - Canada currently has approximately 40 operating or soon to be operating AD systems.
 - Several provinces have adopted policies to increase the use of renewable energy and decrease GHG emissions.
 - Canadian scientists have conducted research on field measurements of agricultural methane emissions using infrared technology. These experiments include some farms that have AD systems in place.

Appendix: Example Activities by Country (continued)

■ China

- In 2009, the federal government granted \$8 billion RMB for biogas development.
- Chinese Ministry of Agriculture is partnering with EPA on a number of initiatives to expand improved village- scale digesters and technical training in rural areas.
- A market assessment of methane recovery and use opportunities in the livestock and agro-industrial waste sector was completed and shows that the most potential for projects and methane reduction is in the southeastern region particularly in medium to large farms in Hunan.
- The World Bank has provided funding to develop affordable pollution control methods for livestock waste management. This now includes a demonstration projects in Guangzhou and Shanghai.

■ Colombia

- Country resource assessment completed.
- U.S. EPA provided funding for a pre-feasibility study for a slaughterhouse facility and processing plant.

■ India

- Currently, 4 million household AD systems utilize the biogas produced from cattle manure.
- There are also approximately 2,000 larger scale biogas systems in operation at large farms. Some of these plants use commingled waste streams including manure and food waste or slaughterhouse waste.
- Indian authorities are working with the United States to expand the Indian AgSTAR program from the dairy sector to distillery and winery sectors.

Appendix: Example Activities by Country (continued)

■ Mexico

- There are currently ~450 AD systems in Mexico that include ~90 AD projects registered under the Kyoto Protocol's Clean Development Mechanism (CDM).
- SEMARNAT has corroborated with the U.S. to develop a series of commercial-scale demonstration farms at various swine farms to raise awareness and technical capability within Mexico.
- US EPA is assisting SEMARNAT to implement the next phase to advance the capability of the Mexican anaerobic digester industry.

■ Philippines

- The Philippines Department of Science and Technology (DOST) is working to build capacity for AD development.
- DOST has worked with GMI and the World Bank to develop a series of training programs. The topics have included digester design, digester financing, digester operation and performance, and hands-on digester construction and installation.
- The Land Bank of the Philippines supports the development of small scale AD projects by administering CDM Program of Activities (PoA).

Appendix: Example Activities by Country (continued)

■ Thailand

- The swine sector has the greatest potential for AD development because cattle farms are small and generally pasture based.
- At large and medium scale swine farms, there is the potential to produce 2.2 million tons of CO₂ equivalents of methane each year in Thailand.
- Currently 600,000 tons of CO₂ equivalents of methane are captured from swine waste; the goal is to capture 2 million tons by the year 2012.
- In 2008, Thailand began working with M2M to reduce methane from swine farms in three provinces located near Bangkok.

■ United Kingdom

- U.K. Government along with stakeholders developed an AD Implementation plan in March 2010 and an AD Strategy in June 2011.
- Financial incentives for renewable energy including biogas include:
 - Renewable Obligation Certificates (ROCs) for large scale electricity
 - A feed-in tariff for electricity up to 5MW – April 2010
 - A renewable heat incentive – April 2011
- Standards for digestate (BSI PAS110) were developed in 2010.
- Financial support for AD projects and research is available through U.K. grant programs, including:
 - Bio-energy Capital Grants Scheme,
 - Rural Development Programme for England, and
 - WRAP's Organics Capital Grant Programme.
- AD advice portal launched in September 2009:
 - <http://www.biogas-info.co.uk/>

Appendix: Example Activities by Country (continued)

■ United States

- The AgSTAR Program develops awareness of AD systems in the U.S. and provides technical support to system developers and operators. EPA has been supporting the domestic biogas use programs through its AgSTAR program for more than 15 years.
- There are approximately 150 AD systems operating in the United States, mostly at dairy operations. These AD systems produce the equivalent of about 300 million kilowatt hours of electricity per year.
- The U.S. Farm Bill is the largest project financing system for AD systems, with \$2 million available for AD systems.
- Research is also being conducted by the U.S. Department of Agriculture (USDA) into nutrient removal from waste streams through digestion, co-digestion of various waste streams, and energy use from AD systems.
- Internationally, EPA has provided grant money for projects related to M2M.

■ Vietnam

- The World Bank has provided funding to develop affordable pollution control methods for livestock waste management, while EPA has provided technical assistance necessary to implement these projects.
- Through the deployment of AD technologies, the program mitigates water pollution from confined swine production and promotes institutional capacity building and policy development and implementation. In addition, the program includes support for pollution reduction quantification.