



## METHANE TO MARKETS PARTNERSHIP AGRICULTURE SUBCOMMITTEE MEETING

### Methane to Markets

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Fifth Session of the Agriculture Subcommittee  
Monterrey, Mexico  
29 January 2009

### Meeting Minutes

#### Summary

- 1 The fifth session of the Methane to Markets (M2M) Agriculture Subcommittee was conducted on 29 January 2009 in Monterrey, Mexico in conjunction with a Steering Committee meeting, a site visit to Ana Margarita swine farm and anaerobic digester, a technical workshop, and meetings of the other M2M sectors. The event was hosted by Mexico's Secretariat of Environment and Natural Resources (SEMARNAT). The workshop proceedings are posted on the M2M Web site at: <http://www.methanetomarkets.org/events/2009/all/all-27jan09-agTech.htm>.
- 2 The meeting's main objective was to determine the future work of the Agriculture Subcommittee based on the input of the participants. Key discussion topics included:
  - Partner country updates
  - Country profiles and strategic plans
  - Development of international guidance to characterize the environmental performance of anaerobic digestion (AD) systems
  - Development of an improved methodology for characterizing leakage rates from AD systems
  - Inclusion of sources of agricultural methane beyond manure, including enteric fermentation and rice cultivation, into the work of the Partnership
  - Partnership-wide accomplishments report
  - Preparations for the Partnership Expo
- 3 The Subcommittee meeting agenda is posted online on the M2M Web site at: [http://www.methanetomarkets.org/events/2009/all/docs/all27jan09\\_agenda.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all27jan09_agenda.pdf).

#### Welcome and Introductions

- 4 Mr. Jeremy Eppel of the U.K. Department for Environment, Food and Rural Affairs (DEFRA) (U.K. representative and Agriculture Subcommittee Co-chair) and Mr. Jorge Hilbert of the Instituto Nacional de Tecnología Agropecuaria (INTA) (Argentina representative and Agriculture Subcommittee Co-chair) welcomed meeting attendees on behalf of the M2M Agriculture Subcommittee.
- 5 The meeting participants provided brief introductions; the meeting was attended by M2M Partner country delegates, Project Network members, ASG personnel, and other interested observers. A list of meeting participants is presented in Annex 1.

- 6 Ms. Cortney Itle of ERG (Administrative Support Group [ASG] contractor) provided a brief overview of the minutes of the last Agriculture Subcommittee meeting in Morelia, Mexico. In Morelia, the Subcommittee discussed a number of items that are still in progress and included in the agenda of the Monterrey meeting. In addition, the Subcommittee decided at the Morelia meeting to move forward with the inclusion of agro-industrial waste into the work of the Partnership by focusing the Monterrey technical workshop on anaerobic digestion of agro-industrial waste.
- 7 Mr. Eppel asked Subcommittee members to complete country profile and strategic plans and submit them to the ASG by 16 March 2009. Templates for the agriculture country profile and strategic plan are located online at:  
[http://www.methanetomarkets.org/resources/ag/docs/ag\\_profile\\_template.doc](http://www.methanetomarkets.org/resources/ag/docs/ag_profile_template.doc)

### **Brief Statements and Updates from Country Representatives**

#### ***Argentina***

- 8 Mr. Hilbert reviewed the recent activities in Argentina related to the work of the Agriculture Subcommittee; his presentation is available online at:  
<http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/Argentina.pdf>.
- 9 Mr. Hilbert stated that more than 10 AD projects have been created in Argentina over the past year, and Argentina is in the process of developing its own M2M Program. The Argentina Secretary of Agriculture designated Mr. Miguel Iribarren as the AD contact person for the organization.
- 10 In addition, INTA created a new national bioenergy program, under which AD will be supported as a bioenergy source. INTA is supporting multiple demonstration and research projects and has conducted workshops throughout Argentina. INTA is collaborating with the U.S. Environmental Protection Agency (EPA) to develop a country resource assessment study. A web page regarding bioenergy with direct link to M2M has been created at:  
<http://www.inta.gov.ar/info/bioenergia/bio.htm>.

#### ***Australia***

- 11 Mr. Derek Yip from the Australian Department of Resources Energy and Tourism, Minerals Development, provided an overview on the status of M2M related projects in agriculture in Australia. Mr. Yip stated that the research and development of methane capture and use technology in the Australian intensive livestock industries continues to be a focus of the Australian M2M Program. Current projects under the program include:
  - The West Pork Piggery in Western Australia,
  - The Grantham Piggery in Queensland,
  - Feedlots in Queensland, and
  - The Leslie Dairy Farms and Bears Lagoons in Victoria.
- 12 The Steering Committee of the Australian M2M Program met in November 2008 and is scheduled to meet again in March 2009. Current funding for the program will run out in the first half of 2009 and the Steering Committee is seeking new sources of funding to allow for Australia's continued participation in the international M2M Partnership.

- 13 The Australian government is moving towards the implementation in 2010 of a Carbon Pollution Reduction Scheme that includes emissions trading. The Scheme may enhance the commercial benefits of methane capture and use in agriculture by imposing a carbon cost on the sector. However, methane emissions from agriculture may be excluded from the Scheme initially. The government will consult with the agriculture sector in a working group to help policy makers reach a decision in 2013 regarding the coverage of agriculture emissions under the Scheme by 2015.

### *Canada*

- 14 Mr. Tim Martin of Agriculture Canada stated that the challenges to AD development in Canada include legislative and policy barriers to power grid access. Mr. Martin explained that there are currently no significant renewable energy incentives from the federal government that impact AD adoption in the agriculture or food sectors; the electricity grid in Canada is under the control of 10 provinces, and legislation and policy vary greatly in terms of:
- Percentage of electricity from renewable sources
  - Commitment to the promotion of renewable sources
  - Access to the grid by small electric producers
  - Electricity pricing and premiums paid for renewable energy
  - Programs to help with feasibility studies and capital costs
  - Greenhouse gas offset trading
- 15 Mr. Martin stated that Canada currently operates 16 AD systems utilizing farm and food industry waste. An additional 16 digesters are under construction in Ontario. All current systems are equipped with generators and use heat or electricity onsite.
- 16 The Ontario Ministry of Agriculture, Food and Rural Development started a new blog on biogas, with local and international information, located online at: <http://www.gobiogas.blogspot.com>.
- 17 Mr. Martin noted that an upcoming conference is being held in Canada, called Canadian Farm and Food Biogas Conference and Exhibition, from March 10 through 13, 2009, in London, Ontario.
- 18 Mr. Eppel asked if there is any chance of Canada passing national-level legislation on renewable energy. Mr. Martin replied that a possible new regulation proposes a one-cent-per-kilowatt-hour incentive for renewable energy.

### *Chile*

- 19 Mr. José Miguel Arriaza Hinojosa from the Comisión Nacional de Energía discussed the M2M agriculture activities in Chile. Mr. Arriaza stated that Chile was working to prepare a country profile. Some facilities in Chile have AD and capture and use methane; however, there are barriers to the development of AD. The government has supported the development of one AD demonstration project and hopes to replicate it throughout Chile.
- 20 Mr. Eppel noted that Chile was just voted into the Partnership at the previous day's Steering Committee meeting, so he welcomed the Chilean representatives into the Agriculture Subcommittee. He noted that Chile should develop a country profile and strategic plan, but they should not feel obligated to meet the March deadline since they are new members.

21 Mr. Hilbert also welcomed Chile to the Partnership and noted that he has worked with AD in Chile in the past, and he is looking forward to future collaboration in the Agriculture Subcommittee.

### *Germany*

22 Ms. Elisabeth-Maria Huba of IBBK (Project Network member) provided a brief overview of the AD situation in Germany. Ms. Huba stated that at the end of the year 2008, 4,891 AD plants were in operation in Germany, 3,711 of which use agricultural waste or energy crops, 1,100 of which are sewage sludge biogas plants, and 80 of which are fed with food waste. All landfills are obliged to have methane capture; open air waste disposal was phased out by law so the number of AD projects in this sector is currently decreasing whereas AD projects for industrial and municipal waste are increasing. Agricultural based AD projects prevented emissions of 3.4 million tonnes of carbon dioxide in 2006 and 6 million tonnes of carbon dioxide in 2007.

23 Germany has had much success with the adoption of AD. Ms. Huba believes that this is due to the strong promotion of AD by the government and other organizations. A new renewable energy law in Germany provides a strict division between agricultural biogas and non-agricultural biogas.

24 Ms. Huba noted that IBBK is organizing an international biogas training workshop and international study tour in April 2009.

25 Mr. Eppel noted with regret that the German government did not participate in the Agriculture Sub-Committee but he welcomed Germany project network members' participation.

### *Mexico*

26 Mr. Luis Alberto Lopez Carbajal from SEMARNAT (Mexico representative) presented the Mexican activities related to AD in agriculture; the presentation is available on the M2M Web site at: <http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/Mexico.pdf>.

27 Mr. Lopez Carbajal stated that Mexico had updated the M2M country profile for agriculture, which is also available on the M2M Web site at: [http://www.methanetomarkets.org/resources/ag/docs/mexico\\_profile.pdf](http://www.methanetomarkets.org/resources/ag/docs/mexico_profile.pdf).

28 Mr. Lopez Carbajal stated that SEMARNAT currently operates five AD demonstration projects and plans to construct three more systems on small farms. SEMARNAT has worked to develop engineering specifications for AD systems with the help of other organizations including the U.S. EPA, the Mexican Secretariat of Agriculture (SAGARPA), the Mexican Institute for Investigation in Forestry and Agriculture (INIFAP), and SAGARPA's Shared Risk Trust Fund (FIRCO).

29 Mexico developed a national strategy for climate change in 2007. In 2008, the Special Program of Climate Change was created and specific goals were established by sector for the year 2012. For the agricultural sector, the goals include reducing GHGs and generating renewable energy through AD of livestock waste.

30 Mexican data collection efforts have helped to define the areas with most potential for the implementation of AD. SAGARPA has developed detailed information on the potential methane production in units of pigs and dairy cows. The Mexican Confederation of Pig Producers is

supporting the update of a software program designed to estimate methane emissions from swine, called PIGMEX. The updated PIGMEX program should be available in June 2009.

- 31 Mr. Carbajal acknowledged that several actions must be taken to further the development of AD in Mexico, including:
- National and local capacity building
  - Increasing awareness and exchanging information
  - Increasing training and development of personnel
  - Including AD and other agricultural sources aside from manure
  - Developing demonstration projects
  - Promoting private investments
- 32 Mr. Carbajal noted that there is increasing awareness in Mexico of the environmental impact of products, such as a recent effort to develop environmental certification programs to distinguish products that are more environmentally friendly, including low carbon beef.
- 33 Mr. Octavio Montúfar Avilez of SAGARPA added that approximately 450 AD systems currently exist in Mexico, of which 350 are operating and 100 are generating heat or electricity. There are potentially 4,000 more possible projects on swine farms in Mexico. Fifteen training workshops were held last year that reached about 40 to 50 farmers, but more training and demonstration projects are necessary, which will require more funding. In addition, Mr. Avilez noted that SAGARPA-FIRCO is partnering with SEMARNAT to support the development of AD projects, though the “Development of Technical Systems to Promote Bio-Digesters Design and Construction in Mexico”. This project aims to develop technical specifications, certification of technology providers, and human resources for AD. The team is working with the U.S. EPA to train SAGARPA-FIRCO professionals to develop AD demonstration projects. FIRCO is also working with the World Bank to begin a new sustainable rural development project to construct 300 demonstration AD units and to study the possibility of a programmatic CDM project.
- 34 Mr. Hilbert thanked SEMARNAT for hosting the M2M meeting and for coordinating the site visit. Mr. Eppel thanked Jose Luis Tamez for allowing the Subcommittee to visit his farm and for providing a very informative and interesting tour.
- 35 Mr. Eppel asked if demand in Mexico for the environmental certification programs is very high. Mr. Carbajal replied that beef is exported from Mexico, and there is international demand for environmentally friendly products. Mr. Carbajal also noted that more research is needed before the environmental certification programs are fully developed.

### *Philippines*

- 36 Ms. Emelita Asuncion Dimapilis of the Department of Science and Technology presented a brief update of the agricultural M2M activities in the Philippines, which is available on the M2M Web site at: <http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/Mexico.pdf>.
- 37 Currently, agriculture comprises 33 percent of the Philippines’ methane emissions. Ms. Dimapilis noted that some AD projects are currently operating in the Philippines, including 10 projects that are registered with the Clean Development Mechanism (CDM). The most promising industries for future AD projects include swine farming, slaughterhouses, alcohol distilleries, coconut processing, and pineapple processing.

- 38 Ms. Dimapilis noted that barriers to AD in the Philippines include lack of incentives, insufficient funding, poor public image of AD technology, and lack of information. The Philippines government developed some initiatives to promote the adoption of AD, including creating a biogas Web site, providing technical assistance to small-scale projects, and developing the Renewable Energy Act of 2008. In the future, the Philippines government hopes to develop demonstration projects and build national capacity to promote AD projects.

### ***Thailand***

- 39 Dr. Arux Chaiyakul from the Department of Livestock Development (DLD) within the Ministry of Agriculture and Cooperatives represented Thailand. Dr. Chaiyakul's background is in veterinary science, and he currently develops AD projects with the World Bank. Dr. Chaiyakul's presentation is available on the M2M Web site at:  
<http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/Thailand.pdf>.
- 40 In Thailand, the swine sector emits the greatest amount of methane from livestock and offers the greatest potential for AD development. The DLD implemented the Livestock Waste Management in East Asia (LWMEA) Project, which aims to reduce swine waste pollution from the Gulf of Thailand and the South China Sea by imposing controls on swine waste in China, Vietnam, and Thailand. The LWMEA Project is funded by the World Bank through the year 2010, and aims to:
- Provide appropriate AD technology and demonstrations of this technology
  - Raise awareness of the environmental impacts of swine farming and the option of AD
  - Develop policy to regulate the environmental impacts of swine farming and encourage adoption of AD
  - Develop a decision tool for stakeholders
  - Manage excess nutrients from swine farms
- 41 Dr. Chaiyakul noted that the barriers for the LWMEA Project in Thailand include lack of environmental awareness, high costs of wastewater treatment systems, lack of government incentives and regulations, and inadequate data. Currently in Thailand, only four large swine farms are applying to the CDM program. However, there is potential for more CDM projects if multiple small and medium farms combine to be part of bundled CDM projects. Farms that are part of bundled projects must all have the same technology and implement and finish the adoption of the technology in the same time period.

### ***United Kingdom***

- 42 Mr. Eppel stated that the United Kingdom (U.K.) is actively supporting the development of AD, as the use of AD supports many of the key policy objectives of the U.K. government, including using renewable energy, reducing GHG emissions, reducing landfill waste, and managing diffuse water pollution from agriculture. Mr. Eppel's presentation is available on the M2M Web site at:  
[http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/United\\_Kingdom.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/United_Kingdom.pdf).
- 43 Mr. Eppel noted that senior personnel from the agriculture and biogas industries, supermarkets, water and energy companies, waste and food sectors, non-governmental organizations (NGOs), regional development agencies, and local government and regulators met with Defra Ministers in December 2008. The purpose of the meeting was to develop a vision statement to define shared goals for AD and create an implementation plan describing how the various parties will work together to meet the goals. A Task Group to do that would shortly be established.

- 44 In addition, the U.K. Climate Change Act of 2008 was developed with the goals of strengthening the international and domestic policy framework. The Act has provisions to:
- Reduce GHGs by 26 percent by 2026 and by 80 percent by 2050
  - Set five-year carbon budgets with annual progress reporting to Parliament
  - Establish a new independent Committee on Climate Change to advise the government on carbon budgets and strategies
  - Allow for faster adoption of emission trading schemes
  - Require government reporting on climate change.
- 45 The U.K. government also developed an Energy Act of 2008, which provides the authority to introduce “banded” Renewables Obligation Certificates (ROCs), providing financial incentives for using renewable energy. Electricity suppliers need to obtain a portion of their electricity from renewable sources, which entitles them to ROCs. AD receives twice as many ROCs as some other renewable energy sources, making it a more economically attractive renewable energy source.
- 46 Mr. Eppel explained that financial support is available for AD projects and research through new U.K. grant programs, including the Bio-energy Capital Grants Scheme, the Rural Development Program for England, and the Waste Resources and Actions Program’s Organics Capital Grant Program. Additionally, the U.K. government is providing funding for three to six projects that demonstrate different benefits of AD.

### *United States*

- 47 Mr. Chris Voell from U.S. EPA noted that the United States is composed of 50 states and that the country encounters the same problems as Canada in regard to regulations that vary by state/province. This situation creates a hurdle to the development of national-level energy regulations.
- 48 Mr. Voell stated approximately 150 AD systems operate in the United States, mostly at dairy operations. Approximately 20 new systems have been implemented per year over the past several years. Mr. Voell explained that the U.S. Farm Bill is the largest project financing system for U.S. AD systems. The Farm Bill has been funded for the next five years with \$US 60 million available each year for renewable energy production.
- 49 U.S. EPA is currently developing national GHG regulations, which will require U.S. entities—including agricultural systems—with large GHG emissions to report their emissions to the U.S. EPA.
- 50 Mr. Voell noted that beneficial uses are being discovered for AD byproducts. For example, a market is developing in the United States for manure fibers present in AD digestate. These fibers could be used for animal bedding or to replace peat moss in gardening applications.
- 51 In 2008, various organizations representing the U.S. dairy industry conducted a Sustainability Summit sponsored by Dairy Management Incorporated, the International Dairy Foods Association, and the National Milk Producers Federation (NMPF). The Summit’s goals were to discuss reducing the carbon footprint of the dairy industry while increasing business value. Participants included Wal-Mart, Dean Foods, Land O Lakes, Monsanto, Waste Management, Organic Valley, and Sustainable Conversation. More information is available at: <http://www.wdexpo.org/2008/06/28/ground-breaking-dairy-sustainability-summit>.

52 U.S. EPA has provided grant money for international projects related to M2M and recently issued a new grant solicitation, making US\$ 7 million available for broad projects that can be adopted by other countries. Grant proposals are due to the U.S. EPA by March 5, 2009.

### ***Vietnam***

53 Dr. Lahn Nguyen from the Institute of Strategy and Policy on Natural Resources and Environment in Vietnam presented a summary of the M2M-related activities. The presentation is available on the M2M Web site at: <http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/Vietnam.pdf>.

54 Dr. Nguyen stated that animal production accounts for 23 percent of the total agricultural sector in Vietnam. Most farms are small to medium sized. Currently, only 7 percent of farms in Vietnam are taking measures to manage waste. Approximately 50 percent of manure produced is processed by aerobic treatment and used as fertilizer. The remaining manure is either used in biogas systems or released into the environment without treatment. Currently 100,000 biogas systems operate in Vietnam, mostly household and small-scale systems.

55 Stakeholders in livestock waste management include organizations under the Ministry of Agriculture and Rural Development and the Ministry of Natural Resources and Environment. In addition, donors and NGOs provide funding for AD systems and domestic institutions and companies provide AD research and technology.

56 Vietnam's country strategy includes the development of:

- Environmental protection regulations for farms
- Economic incentives for environmentally friendly practices
- Environmentally friendly models of animal husbandry
- Networks of AD technology providers and individuals with operation training and experience
- Increased public awareness of available AD technologies
- Increased funding opportunities

### **Enteric Fermentation and Rice Cultivation**

57 Mr. Eppel explained to the Subcommittee that in November 2007, the Steering Committee first discussed incorporating other sources of agricultural methane (aside from manure management) into the scope of the Partnership; specifically, the main sources of agricultural methane are enteric fermentation and rice cultivation.

58 Ms. Ashley King of the U.S. EPA (ASG) summarized this topic in a presentation that was presented at Steering Committee meeting and is available on the M2M Web site at: [http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/enteric\\_rice\\_26jan.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/enteric_rice_26jan.pdf).

59 Ms. King explained that the ASG prepared a paper summarizing mitigation options for these sources and presented a summary at the Steering Committee meeting. The Steering Committee discussed the topic and tasked the Agriculture Subcommittee with 1) discussing where M2M could add value to this area of interest and 2) consulting with the United Nations Framework Convention on Climate Change (UNFCCC) Ad hoc Working Group on Long-term Cooperative



Action (AWG-LCA) to determine what role the UNFCCC will play in this area.

- 60 Ms. King stated that the Partnership has historically been focused on reducing GHG emissions and capturing and using the biogas. Emissions from enteric fermentation and rice cultivation cannot be captured and used; however, options might exist that could reduce the emissions from these sources, and the GHG reductions could be marketed as carbon credits. If these methane sources were included in the Subcommittee's work, it would represent a change in the philosophy of the Steering Committee and be the first time the M2M Partnership had considered only the methane reductions as the marketable entity versus the capture and use of the methane.
- 61 Mr. Hilbert noted that if the emission reductions from these sources could be quantified, measured, and used for economic benefit then Argentina would support the emission reductions from these sources. He stated that INTA has been conducting research on enteric fermentation emissions, and multiple strategies exist to reduce enteric fermentation emissions, but more research is needed to be able to accurately quantify emissions or emission reductions.
- 62 Mr. Eppel noted that the Subcommittee visited INTA's impressive research facility while in Buenos Aires in 2007. He also stated that numerous organizations in multiple countries are conducting research, including the UK and New Zealand.
- 63 Mr. Martin stated that he was concerned about broadening the scope of the Partnership. His concern has the program might lose some of its reputation. The capture and use of methane is a simple and basic approach that works and provides real benefits by reducing emissions while also producing renewable energy. If the Partnership starts to include other types of projects then the basic, simple idea that is at the core of Partnership might be lost. In addition, these sources would require a great deal of time and energy that would use up Partnership resources that could be better spent focusing on current work.
- 64 Mr. Eppel explained that if the Partnership decided to include these sources, they would possibly be included in another Subcommittee and not in the Agriculture Subcommittee, so it was not likely that resources would be taken away from the Agriculture Subcommittee.
- 65 Mr. Heinz-Peter Mang of the German Society for Sustainable Biogas and Bioenergy Utilization (GERBIO-FNBB) stated that Greenpeace recently conducted a study about methane emissions from agriculture. Enteric fermentation is the largest source of methane from agriculture, but other sources of methane and GHGs such as fertilizer, equipment, and irrigation, exist. There are multiple ways that methane and other GHGs could be reduced in agriculture, including reducing fertilizer use, replacing equipment, and changing irrigation practices.
- 66 Mr. Eppel stated that a market clearly exists for products with less environmental impact, as demonstrated by the environmental certification program in Mexico mentioned by Mr. Carbajal. In addition, Mr. Eppel noted that to better estimate emission reductions from enteric fermentation, GHG inventories would need to improve. Currently, most inventories are based only the number of animals and default emission factors and do not take into account changes in feed type or quantity, which are the major factors affecting enteric fermentation emissions.
- 67 Mr. Voell noted that enteric fermentation and rice cultivation are large sources of agricultural methane, but manure management projects have the added benefit of producing energy and therefore decreasing potential emissions from other energy sources.
- 68 Mr. Eppel asked the Subcommittee how many of the country representatives were responsible for enteric fermentation and rice cultivation as well as manure management, if the Partnership

69 Mr. Eppel thanked everyone for their input and he stated that he, Mr. Hilbert, and Ms. King will discuss the issue further, aim to attend the UNFCCC workshop on GHGs from agriculture in March 2009, and report back to the Subcommittee.

### **International Guidance for Characterizing AD System Performance**

70 Mr. Kurt Roos of the U.S. EPA explained that in the United States, as in other areas of the world, some AD projects have failed, unfortunately, which has led some to be skeptical about the possibilities for AD systems. To help remedy this problem and to provide unbiased information on AD system performance, the United States has developed a protocol to evaluate projects. At the April 2008 Agriculture Subcommittee meeting in Morelia, Mexico, the Subcommittee supported the development of an international protocol to establish an evaluation standard for AD systems to meet.

71 Mr. Roos led the development of a draft international protocol and presented a summary of the document; this presentation is available on the M2M Web site at:  
[http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/monterrey\\_protocol\\_final.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/monterrey_protocol_final.pdf)

72 Ms. Nina Sweet of the Waste and Resources Action Program (WRAP), UK, asked how the U.S. protocol is used. Mr. Roos replied that the U.S. protocol is used to confirm technologies in order to help farmers choose technologies and help bankers and investors know which technologies are secure investments.

73 Ms. Sweet inquired how reported data are checked. Mr. Roos replied that a group could be created to review any protocols that are developed. In addition, the protocols could be collected in a central repository and made available to the public.

74 Mr. Mang noted that Germany has a variety of protocols in place, including protocols for safety and construction. If an AD system does not meet the protocol(s) requirements, it is not permitted to operate. There are also quality certifications for AD systems that prove that the system is meeting all quality requirements for AD systems, including not producing secondary pollution.

75 Mr. Roos noted that the international protocol could be developed in a way to help producers prove that they are producing a low-carbon product. M2M could possibly endorse equipment or products that have been proven to be effective.

76 Mr. Eppel noted that the technical review experts should keep in mind that the protocol must be applicable to a wide variety of countries and situations, so it should be broad and open ended. Mr. Eppel added that the list of technical expert reviewers will be sent to Subcommittee and any additional suggested reviewers should be submitted to the ASG as soon as possible

### **Development of Leakage Rates from AD Systems**

77 Mr. Roos explained that the current emission estimation methodologies lack specific guidance for leakage of AD systems. Mr. Roos summarized this issue in a presentation that is available on the M2M Web site at: [http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/monterrey\\_leakage\\_final\\_jhm.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/subcommittee/ag/monterrey_leakage_final_jhm.pdf).

- 78 The CDM *Consolidated baseline methodology for GHG emission reductions from manure management systems* (ACM0010) presents a default leakage rate for CDM AD projects of 15 percent, regardless of the digester type, size, age, or condition. The CDM methodology states: “IPCC guidelines specify leakage from anaerobic digesters as being 15 percent of total biogas production. Where project participants use lower values for percentage of physical leakage, they should provide measurements proving that this lower value is appropriate for the project.”
- 79 The 1996 IPCC Guidelines are referenced as the source of the CDM Methodology leakage rate. The 2006 IPCC Guidelines provide no guidance on leakage, indicating a leakage range of 0 to 100 percent.
- 80 The U.S. EPA developed a Climate Leaders Protocol to estimate emission reductions from manure AD systems. This protocol includes a collection efficiency value which is used to represent gas that is not collected by the system due to leakage. The Climate Leader’s Protocol is available online at:  
[http://epa.gov/climateleaders/documents/resources/ClimateLeaders\\_DraftManureOffsetProtocol.pdf](http://epa.gov/climateleaders/documents/resources/ClimateLeaders_DraftManureOffsetProtocol.pdf)
- 81 Mr. Mang noted that the leakage rate from the World Bank’s Wednesday presentation about CDM methodologies was 10 percent for small scale projects; Mr. Roos’s presentation noted a leakage rate of 15 percent. Mr. Mang also noted that the system’s collection efficiency is not equivalent to leakage.
- 82 Mr. Roos asked the Subcommittee how it would like to move forward with this work. He noted that the Subcommittee could decide to do nothing and focus on other areas, convene a group to discuss leakage issues, or develop a white paper.
- 83 Mr. Eppel asked if leakage rates must be defined in order to move forward with the development of the international protocol. Mr. Roos replied that it was not mandatory for the development of the protocol.
- 84 Mr. Avilez stated that without taking leakage into consideration, some AD systems might actually increase methane emissions. Therefore, Mexico supports spending more time on trying to better define leakage amounts.
- 85 Mr. Roos suggested that U.S. EPA could develop a white paper outlining the possible alternatives to estimating leakage rates. It was agreed that the U.S. EPA would seek the input of international experts such as Mr. Mang and Mr. Pierre Gerber of the Food and Agriculture Organization of the United Nations (FAO). This document would be circulated to the Subcommittee for discussion at a future meeting. Mr. Eppel noted that Subcommittee members should provide suggestions of technical experts in this field to the ASG.
- 86 Mr. Martin noted that his colleague, Dr. Ray Desjardins, has been leading research on field measurements of agricultural methane emissions using infrared technology and would be a good resource for this work. These experiments include some farms that have AD systems in place.

#### **Steering Committee Charge to the Subcommittee**

- 87 Ms. King presented the Steering Committee charge to the Subcommittee; this presentation is available on the M2M Web site at: [http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/plenary/Report\\_Out\\_2009.pdf](http://www.methanetomarkets.org/events/2009/all/docs/all-27jan09/plenary/Report_Out_2009.pdf).

- 88 Ms. King noted that an important task for the Subcommittee was contributing to the development of the Partnership-wide Accomplishments Report. This report makes the case to important stakeholders that the Partnership is valuable and producing benefits to the environment and to the member countries. It is important that the report captures all of the work of the Partnership so the input of each country representative is needed.
- 89 Ms. King noted that the ASG will send a report template in the middle of February 2009 to all Subcommittees. Each country representative should complete the template by listing any projects, trainings, tools, or other support related to M2M. All details about the projects or activities should be provided. For example if the highlighted activity is a workshop, provide the specific information presented in the workshop, the date and location of the workshop, and the number of people that attended the workshop. The completed templates should be submitted to the ASG by April 2009.
- 90 Mr. Hilbert asked if the ASG would want to know about work in partner countries that is planned for future years. Ms King replied that the Partnership-wide Accomplishments Report will focus on past work.
- 91 Next, Ms. King discussed the Partnership Expo, which is tentatively proposed for March 2010 in India. The ASG needs the assistance of the Subcommittees to ensure another successful Expo. Each country representative should help to identify people, organizations, and projects that should participate in the Expo. The ASG would like to ask each country to identify at least two projects or organizations for the Expo by the next Subcommittee meeting.
- 92 Mr. Eppel clarified that not all countries will have projects looking for financing, but each country should help to identify activities to highlight or organizations that would like to participate, including as sponsors.
- 93 Ms. King noted that the Expo Task Force membership is not closed, and any interested parties are welcome to participate. They should contact the ASG if they would like to become a member of this Task Force. The ASG welcomes all input and assistance with the development of Expo activities and agendas.
- 94 Mr. Arriaza asked what types of projects the ASG was looking for. Ms King explained that the ASG would like each country to identify projects that need funding. Project information and templates for project posters and fliers from the last Expo are available on the M2M Web site at <http://methanetomarkets.org/events/2007/all/expoprojects.htm>.
- 95 Mr. Eppel noted that the Project Network was very important to the Partnership's success, and each country representative should work to bring in Project Network members and keep them involved in the work of the Partnership. Ms. King added that the Expo provides great exposure and networking opportunities for Project Network members, and each country should encourage Project Network participation.
- 96 Finally, Ms. King presented the workplan checklist and timeline for the Agriculture Subcommittee, which summarizes the ongoing activities of the Subcommittee. Annex 2 presents the workplan checklist and timeline.

### **Next Subcommittee Meeting**

- 97 Mr. Eppel stated that the next Subcommittee meeting would take place in the September to October timeframe, and it would be ideal if the meeting could take place in conjunction with another biogas- or agriculture-related event. In addition, Mr. Eppel noted that there is much AD activity in Europe, so Europe would be a good location for the next meeting. Mr. Eppel noted that an International Energy Agency (IEA) Task 37 meeting will take place in the second half of the year in Austria. In addition, Mr. Roos noted that a LWMEA Project meeting will take place in September in China, which might be a good conference to attend in conjunction with the Agriculture Subcommittee meeting.
- 98 Mr. Eppel asked the Subcommittee to inform the ASG of any upcoming activities that they become aware of so that a decision could be made on the venue and timing of the next meeting.

### **Action Items**

- 99 In summary, the action items from the Subcommittee meeting include:

The Subcommittee will determine the location of the next Subcommittee meeting, which will be preferably be conducted in conjunction with a related conference or event on biogas or agriculture. Each country representative should inform the ASG of any upcoming events.

The U.S. EPA and ASG will be organizing a group of international experts to review the draft protocol for the environmental evaluation of anaerobic digestion systems. Each country representative may recommend experts to participate on the review panel by **20th February 2009**.

Each country representative should update and submit Agriculture Country Profile and Country-Specific Strategy to the ASG **by 16<sup>th</sup> March 2009**. The template is located online at: [http://www.methanemarkets.org/resources/ag/docs/ag\\_profile\\_template.doc](http://www.methanemarkets.org/resources/ag/docs/ag_profile_template.doc)

The U.S. EPA will be developing a discussion paper on leakage rates associated with anaerobic digestion systems with the assistance of others with expertise in the field (including Heinz-Peter Mang of the German Society for Sustainable Biogas and Bioenergy Utilization), for discussion at the next Subcommittee meeting. Any further volunteers to help with this work may contact the ASG.

The Agriculture Subcommittee co-chairs and the ASG will be exploring the options for possibility of adding enteric fermentation and rice cultivation to the scope of the Partnership's work in the coming weeks and reporting back to both the Subcommittee and Steering Committee.

Each Subcommittee member is asked to provide input to the ASG for the Partnership-wide Accomplishments Report. The ASG will send templates out later this month; Subcommittee members should submit input **by 15<sup>th</sup> April 2009**.

Each Subcommittee member is asked to identify at least 2 potential projects, people, or organizations that should participate in the M2M Expo **by September 2009**.

## **Closing Remarks**

100 Mr. Hilbert and Mr. Eppel thanked SEMARNAT for hosting the meeting and site visit and the ASG for helping to plan and organize the event. Finally, Mr. Eppel thanked the interpreters and all the meeting participants for a productive session and adjourned the meeting.



# Annex 1- Agriculture Subcommittee Meeting Participant List

**MONTERREY, MEXICO**

**29 January 2009**

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### **Methane to Markets Agriculture Subcommittee 2009-2010 Draft Workplan Checklist**

- February 2009**—Partnership-wide Accomplishments Report: The Administrative Support Group (ASG) will distribute templates to the Subcommittee for the Accomplishments Report.
- March 15, 2009**—Country Profiles and Strategic Plans: Each Subcommittee member will submit their updated country profiles and strategic plans to the ASG.
- February-March 2009**—Protocol Review: A group of international experts will review the protocol and conduct a teleconference if necessary to discuss revisions to the document. The U.S. EPA will make revisions to the document as needed.
- April 2009**—Partnership-wide Accomplishments Report: Subcommittee members will complete the partnership-wide accomplishments report template and submit it to the ASG.
- February to August 2009**—Partnership Expo: Subcommittee members should begin working with companies to identify potential projects to highlight at Partnership Expo. These projects may be in-country or in another location (i.e. developed-country capacity building in countries that are developing or have economies in transition) and could be related to informational products (technical reports, information management systems or data repositories/software), capacity building, targeted information exchange (dedicated Web site, newsletters/fact sheets and outreach material), technical demonstrations and/or feasibility studies and specific technical training. Members may also wish to consider highlighting their work on relevant studies or other activities that promote Partnership principles, as well as corollary work with Project Network members. Members should identify at least two projects and consider how or to what extent projects will be highlighted at the Expo.
- May 2009**—Protocol Review: The international protocol will be finalized and posted to the M2M website.
- July 2009**—Partnership-wide Accomplishments Report: The ASG will distribute draft text from the Accomplishments Report. Subcommittee members should provide comments on the draft report to the ASG. The ASG will compile all the comments and, as appropriate, revise the Accomplishments Report.
- September 2009 to February 2010**—Partnership Expo: Subcommittee members should coordinate with companies, academic community members, technology manufacturers and/or service providers, etc., to encourage attendance at and/or sponsorship of the Partnership Expo. Members should identify at least two attendees and consider how and to what extent attendees will participate, as well as travel needs (visa invitations and travel sponsorship).
- October 2009**—Partnership-wide Accomplishments Report: The ASG will distribute the final draft of the Accomplishments Report. Subcommittee members should provide comments on the draft report to the ASG. The ASG will compile all the comments and, as appropriate, revise the Accomplishments Report.

**Methane to Markets Agriculture Subcommittee 2009-2010 Draft Workplan Timeline**

Activity	2009												2010		
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March
<b>All Sector Meeting</b>	Meeting in Monterrey Mexico														
<b>Country Profile and Strategic Plan</b>	Update Country Profile and Strategic Plan by 15 <sup>th</sup> March 2009														
<b>Protocol Review</b>	Expert review of draft protocol and possible teleconference														
	U.S. EPA revises protocol														
	Protocol finalized and published to M2M website														
<b>Partnership-wide Accomplishments Report</b>	Templates distributed to Subcommittee														
	Subcommittee provides input to ASG														
	ASG drafts report														
	Subcommittee reviews text and provides input to ASG														
	ASG revises report														
	Subcommittee reviews final draft and provides input to ASG														
	ASG makes final revisions														
	Final report is published to M2M website														
<b>UNFCCC Meeting</b>	UNFCCC Meeting; includes workshop on agricultural sources of methane														
<b>Subcommittee Meeting</b>	Identify location for next Subcommittee Meeting														
	Conduct Meeting?														
<b>Partnership Expo Preparation</b>	Subcommittee members work to identify potential methane emissions reduction activities to highlight at Expo.														
	Each subcommittee representative helps to identify at least 2 projects for the Expo.														
	Subcommittee members coordinate participation at Expo														
<b>Partnership Expo</b>	Partnership Expo in India														