



Methane to Markets

Methane to Markets Partnership

Final Minutes from 11th Meeting of Landfill Subcommittee

5 March 2010

New Delhi, India

Overview

Approximately 23 participants from Argentina, Australia, Brazil, Colombia, Finland, India, Japan, Poland, Ukraine and the United States attended the 11th Landfill Subcommittee meeting. Moving forward from the Partnership Expo was the overall theme of the meeting. A majority of the meeting focused on discussing charges from the Steering Committee, including 1) collecting feedback about the Partnership Expo; 2) exploring options for including wastewater treatment in the Partnership; 3) establishing procedures for Subcommittee leadership; and 4) improving outreach and communications. During this discussion, the Subcommittee adopted Colombia and the United States as interim co-chairs with Argentina, with the agreement that the Subcommittee leadership will again be reviewed in 2011. The United States also reported on Landfill Subcommittee activities, such as improvements to the International Landfill Database and the development of a landfill biogas project best practices guide. Partners also had an opportunity to report on recent activities. Below is a detailed summary of the topics discussed, as well as a closing section of action items.

Welcome and Opening

Chair Gabriel Blanco started the meeting with a warm welcome to the participants and reviewed the agenda items for the meeting. The main goals of the meeting were to conduct a debrief on the Methane to Markets Partnership Expo, confer about the charges given to the Subcommittee from the Steering Committee, and discuss post-expo activities for the Subcommittee. The agenda (available in Appendix 1) also included an opportunity for delegates to provide country-specific updates. Mr. Blanco also pointed out that the meeting minutes from the last Subcommittee meeting held in Long Beach, California, are provided in the meeting folder. A list of all meeting participants is included in Appendix 2.

Methane to Markets Partnership Expo

The Steering Committee is considering holding another Methane to Markets Partnership Expo in the future. As such, they requested comments on how to improve the next Expo. Three delegates mentioned that scheduling all the Steering Committee meetings during the technical sessions meant that they were unable to attend the presentations, which was disappointing.

Mr. P.U. Asnani, from Urban Management Consultants (Project Network member in India) commented on how many Indians benefited from the meeting. Many of these folks, however, represented smaller landfills, so it would have been beneficial to have topics that featured smaller projects. For example, a presentation that demonstrates how smaller cities can

collaborate on carbon credit projects would be a good topic at a future event. Another participant mentioned that demonstrating different project finance schemes would be useful.

There were also comments about the need to generate greater dialogue about what landfill gas (LFG) project technologies and experiences are adoptable in other countries. Mr. Henry Ferland, Director, ASG, reported that the Steering Committee also expressed a desire to improve communications about what is transferable to other countries.

Ms. Nataliya Stranadko, Delegate from Ukraine, encouraged Methane to Markets to participate more with the United Nations Framework Convention on Climate Change (UNFCCC). The ASG responded by advising the Subcommittee that it is no longer attempting to gain observer status due to the complications of the Methane to Markets Partnership being a voluntary structure. Instead Partner Countries are encouraged to promote Methane to Markets interests within their own country efforts. The Steering Committee is planning to hold side events at the next UNFCCC meeting—the 16th Conference of the Parties (COP 16)—scheduled 29 November to 10 December 2010, in Mexico.

Mr. Joao Alves, Delegate from Brazil, expressed concern that he met landfill owners at the Expo whose landfills had LFG feasibility studies completed, but the owners were unsure about the next steps for project development. Mr. Ferland said this is an issue that ASG is aware of, and internally the group is trying to determine how to make more people aware of these studies, as well as how to provide training and resources to landfill owners after studies have been developed. Ms. Rachel Goldstein, U.S. Delegate, said the creation of a best practice guide on developing an LFG project would assist landfill owners and that she would be discussing this idea in more detail later in the agenda.

A question was asked if the video tapes from the Expo will be made available on the Internet. During the break, ASG determined that the Federation of Indian Chambers of Commerce and Industry-sponsored cameras were not recording sessions, but were being used to facilitate audio-visual presentation during sessions. A few attendees suggested that future meetings could be recorded, which would be particularly helpful for delegates who have to attend multiple Subcommittee meetings or were unable to attend the Expo.

A few delegates requested that Landfill Subcommittee and Steering Committee meeting documents should be provided to all official delegates in advance of the meetings so that each member can review the materials with other colleagues in their home countries prior to the meetings. An agenda of the Landfill Subcommittee meeting was provided, but the proposed discussions of the Steering Committee meeting and the attachments to the Landfill Subcommittee meeting were not provided to delegates in advance of the Landfill Subcommittee meeting.

Updates from Partner Countries

Australia: Claire Murray, Adviser to the Australian High Commission, provided an overview of the country's domestic activities related to LFG. She also provided a written summary, which is included as Appendix 3. When asked about her country's status related to legislation, she reported that the main driver to reduce Australia's greenhouse gas (GHG) emissions is the Carbon Pollution Reduction Scheme (CPRS). This is an emissions trading scheme that will use a

cap and trade mechanism. The Australian government's proposed CPRS legislation was introduced into the Parliament for the third time on 2 February 2010.

Argentina: Gabriel Blanco, Universidad Nacional del Centro de la Provincia de Buenos Aires, and Estella Santalla, Facultad de Ingeniería UNCPBA, jointly discussed recent landfill-related activities. The country is continuing its development of a national strategy for waste management with a loan from The World Bank. Methane to Markets also is providing financial and technical assistance to LFG recovery projects through workshops and by studying LFG potential. During the technical sessions Ms. Santalla presented one of the utilization projects at the Olavarria Landfill. A number of project opportunities were on display at the Expo. These landfills are looking for partners, technical assistance, and funding. Argentina has 10 landfill clean development mechanisms (CDM)-registered projects, with a majority of them flaring the gas. One challenge is finding utilization projects that are suitable for small landfills. When asked about the status of its methane reduction plans, Mr. Blanco responded that the country's first priority is to have a waste management strategy in place to shift away from open dump sites. The next step would then be to capture LFG.

Brazil: Mr. Joao Alves, CETESB, Brazil Delegate, reported that Brazil has enacted its National Plan for Climate Change, which requires GHG emission reductions of approximately 40 percent by 2020. Much of this reduction will result from decreases in deforestation, which contributes to the majority of Brazil's GHG emissions. Sao Paulo also adopted a citywide GHG reduction commitment, which includes a goal to implement methane capture projects in the waste sector. Mr. Alves was also pleased to announce that the country now has 44 CDM-registered projects, with the majority of them related to LFG.

China: Mr. Louis Chan, Director of Organic Waste Technologies (OWT) Hong Kong, reported that the Expo is highlighting several Chinese project opportunities in the poster displays. Three new projects were added to the International Landfill Database, and there is continued use of the China LFG model to determine the potential of sites. Efforts are underway for workshops to be held in the first half of 2010. Now that the potential of large landfills has been identified, Mr. Chan said the focus will shift to assessing the potential of smaller landfills.

Colombia: Ms. Sandra Lopez, Ministry of Environment, Delegate from Colombia, reported that two landfill assessment reports were finalized and several more are in progress. Colombia is still developing their country-specific profile, but that staffing has been a limiting factor in its completion. Site visits were conducted to assist with the development of a country-specific LFG model, which is expected to be finalized in 2010. Ms. Lopez expects that over the next year, Colombia will organize more workshops for landfill operators, municipal officials, and environmental regulatory staff. They also are examining the development of regional sanitary landfills.

Finland: Mr. Petri Kouvo, HSY, Helsinki Region Environmental Services Authority, Delegate from Finland, discussed how his country is regulated under the European Union (EU) directive on waste and explained that his country has been collecting LFG for more than 20 years with 33 landfill power plants in operation. Mr. Kouvo highlighted the success of the biogas power project in Helsinki. Lately, he has seen an increase in using incineration as a waste management tool.

Japan: Dr. Kunihiko Shimada, Ministry of the Environment, Delegate from Japan, reported that methane emissions have been declining in Japan since the 1990s. Most of the waste in Japan is incinerated, so there is little methane production. Instead, the country is focused on working internationally through joint implementation and CDM programs to develop methane reduction projects. Dr. Shimada also reported on Japan's satellite IBUKI, which observes the concentration distribution of GHGs. IBUKI is able to measure over almost the entire surface of the Earth with observations at 56,000 points. More information is available at http://www.jaxa.jp/projects/sat/gosat/index_e.html. The interface is currently only available in Japanese, but other major languages are expected to be available in the future. The ASG asked if the satellite data could be used to improve country profiles. Dr. Shimada explained that there are still some observation holes, so it would depend on the country. He encouraged fellow Subcommittee members to provide ideas on how data could best be used.

India: Mr. Asnani reported on recent India LFG project activity. As was discussed during the technical session, India enacted legislation in 2000 that requires organic waste to be diverted from landfills, but few municipalities have made significant progress in implementing the new rules. The government is providing funding to support the development of solid waste management facilities. Mr. Asnani also reported a number of efforts underway to cap landfills and construct new sanitary landfills. He also said that promotion of regional landfills for less urban areas has started. He endorsed the Subcommittee's plan to develop guidelines on how to develop projects, because that is a need in his country. In the short term, projects will be focused on the larger landfills, but enormous potential also exists with small landfills. In response to a question, Mr. Asnani did report that India is involved with CDM, but that it is still learning about how it works. It would be helpful if the Partnership could provide more guidance. Experience so far has shown that vendors provide different scenarios, and it is hard to determine the best course for developing a project.

Nigeria: U.S. Representative Ms. Swarupa Ganguli, U.S. Environmental Protection Agency (U.S. EPA), reported that efforts are underway in Nigeria to estimate the potential of LFG projects. Much of the waste has historically been in open dumps, but potential exists in areas with large populations. A U.S.EPA grant funded a landfill inventory of Nigerian landfills, and the first Methane to Markets LFG workshop was held in the country in 2009. Ms. Ganguli reported that she foresees lots of opportunities, even though the initial effort might be difficult.

Philippines: With no official delegate present, Mr. Bryce Lloyd of OWT, H.K. reported on recent developments in the Philippines. Four new site assessments were completed, and a country specific LFG model was constructed. It is available at: www.methanetomarkets.org/tools-resources/tools.aspx#three. The country's Renewable Energy Act will provide additional financial incentives for the development of LFG energy projects.

Poland: Ms. Monika Sklarzewska, Ministry of the Environment, Delegate from Poland, provided an update on LFG energy activities in her country. As a member of the EU, Poland is required to comply with an EU directive applicable to certain landfills to collect LFG and use it to produce energy. Of Poland's 340 landfills, 82 of them have combustion projects. Current activities include improving data and awareness of the country's LFG energy potential. The country is adding data to the Methane to Markets International Landfill Database, www2.ergweb.com/landfill/index.aspx, including gas production rates. It sponsored a workshop in 2009 for landfill operators and public work officials. The Oil and Gas Institute is writing a

handbook and training on the best and most effective technologies of LFG utilization. Ms. Sklarzewska also highlighted Mielec landfill, which was displayed as a project opportunity at the Expo.

Russia: Ms. Ganguli provided an update on the Methane to Markets grant award to the Clean Energy Technology Information Center. The center completed the first inventory of landfills in Russia, and it continues to collect LFG potential information and conduct site visits. Feasibility studies will be posted in the Methane to Markets International Landfill Database.

Thailand: Mr. Lloyd also reported that the first Methane to Markets landfill workshop was held in Bangkok, and a site visit was conducted at the ESBEC landfill. A country-specific LFG model was also developed and is available in both English and Thai. The models and user manuals are available at: www.methanetomarkets.org/tools-resources/tools.aspx#three. The country is considering implementing a renewable energy incentive.

Ukraine: Ms. Nataliya Stranadko, Ukrainian Research Hydrometeorological Institute, Delegate from Ukraine, reported that waste management is an important ecological problem for her country. There are many dump sites that do not meet today's new sanitary landfill standards. Ukraine has a GHG emission reduction commitment of 20 percent in 2020 and 50 percent in 2050. Currently, the country is working on a national waste sector plan, and in December 2009, its climate change plan was issued and is posted on the Institute's Web site in Russian. When asked about the financing of landfill projects, Ms. Stranadko responded that the country is receiving some money from emission reduction credit schemes and that government financing has been made available to implement the national waste management plan.

United States: Ms. Rachel Goldstein, U.S. EPA, Delegate from the United States, reported that 48 additional LFG energy projects recently came on line, even with the challenging economic climate, which brings the U.S. total to approximately 520 projects. This year, U.S. EPA's domestic program bestowed awards on several innovative projects, including one that uses LFG as a vehicle fuel and another that utilized cogeneration technology. Ms. Goldstein said that a lot of uncertainty surrounds U.S. policy toward GHG legislation. Currently, U.S. EPA is regulating GHGs under the Clean Air Act, one aspect of which will require landfills to report on their GHG emissions beginning in 2011.

Vietnam: Mr. Lloyd reported that solid waste management workshops were held in the country in 2009 in conjunction with the Clinton Climate Initiative.

Discussing Steering Committee Recommendations

Henry Ferland, ASG, facilitated discussion of the charges given to the Landfill Subcommittee by the Steering Committee. He started by thanking the participants for their hard work in planning and executing tasks for the Expo, such as developing the technical sessions and identifying project opportunities. The landfill sector was well represented with 54 posters of potential projects and success stories on display.

1. 2010 Partnership Expo

Mr. Ferland asked attendees to remember that the 2010 Partnership Expo will not end after today's meeting, but that each of the participants can help the Partnership by publicizing what

was learned and bring the excitement back to their respective countries. ASG will develop a special issue of the newsletter, *Methane International*. Country delegates are encouraged to forward relevant information to interested parties in their countries. An easy method for conveying news about the Expo is to forward the newsletter to contacts with a cover e-mail encouraging participation in the Project Network. There was also a suggestion that awards be added, to which the ASG responded by encouraging each country to consider having country-specific awards. Ms. Goldstein commented how successful awards have been in promoting projects in the United States.

The ASG also requested assistance with tracking and reporting the outcomes of the highlighted project opportunities. All the posters are posted on the Methane to Markets Project Tracking Database (<http://www.methanetomarkets.org/projects>). In addition, the Methane to Markets International Landfill Database will provide a link to any site listed as an Expo project opportunity or any site with a completed pre-feasibility study.

2. Wastewater Treatment

After discussion, the Steering Committee has decided to add wastewater treatment (WWT) as a focus of the Partnership. The Landfill Subcommittee is charged with exploring options for engaging this sector, as the same authorities tend to be responsible for both landfills and WWT. Mr. Ferland explained that we've been asked to make recommendations on how WWT should be incorporated into the Partnership Structure—should it be part of the Landfill Subcommittee or should it be its own subcommittee?

The ASG anticipates scheduling a teleconference to discuss options, with a final determination to be decided at the next Landfill Subcommittee meeting. Partners are encouraged to invite WWT experts to participate. Mexico has volunteered to help chair a waste water task force. The ASG will send out an e-mail soliciting volunteers from other countries. Partners interested in participating in a task force are requested to contact ASG to indicate their interest.

Mr. Ferland then opened the floor for comment. One delegate expressed concern that if WWT becomes another subcommittee, it would spread those delegates already covering multiple sectors even thinner. Several delegates implied that their expertise is only in landfills, so inclusion of WWT in the Landfill Subcommittee would require having another representative. A question was also raised regarding whether WWT would include both municipal and industrial sectors. Arguments for and against inclusion of industrial WWT were made. A couple of questions asked on this topic included:

- What are the relative contributions of methane emissions from municipal vs. industrial sources?
- Will available time and expertise of existing Landfill Subcommittee members influence our scope (to include industrial WWT; break off as a separate subcommittee)?

Mr. Ferland stressed that the Steering Committee has not made any decisions yet on the organization of this topic and encouraged delegates to identify experts to participate in the planned teleconference.

3. Landfill Subcommittee Leadership

The Steering Committee acknowledged that the current leadership of the sector subcommittees was established when the Partnership was first launched and that many new Partners have joined. The Steering Committee is suggesting that subcommittees review their leadership every 3 years and select new co-chairs as necessary. As such, they want each subcommittee to determine how it wishes to proceed with selecting new or renewing existing leadership. Each subcommittee can select up to three chairs.

Mr. Blanco reported that both Italy is willing to yield their current chair person position and Ecuador has not nominated a chair so are also assumed to be yielding, so he is the only chair. Because several countries that might be interested in leadership positions do not have delegates present, he proposed that the Landfill Subcommittee fill the two open chairs during today's meeting and then re-examine leadership after the Ministerial meeting. The United States seconded this suggestion. Colombia and the United States volunteered to fill the chair positions to provide assistance to the current chair, but both U.S and Colombia noted that they would be willing to step aside if another country expresses interest in the future.

Mr. Blanco further proposed that the Landfill Subcommittee implement the Steering Committee's recommendation that the leadership be reviewed every 3 years. As such, the Subcommittee adopted Colombia and the United States as interim co-chairs with plans to review the Subcommittee leadership in 2011 (i.e., after the Ministerial Meeting at the end of 2010). There was some discussion that future chairs should represent countries with the largest emission potential from LFG (and WWT), but others felt that the Subcommittee should consider a person's available time and resources to devote to the Subcommittee, as well as the country's emissions contributions.

4. Outreach and Communications

Mr. Ferland encouraged Partners to work with ASG to provide updates on activities in their countries and forward links to documents that should be advertised on the Methane to Markets Web site. Additionally, Partners should use the *Methane International* newsletter to highlight projects, conferences, and other success stories. ASG is also interested in hearing about efforts to promote Methane to Markets and related activities and would like to receive links to press releases and other news items. ASG also reported that it can provide hard copies of Methane to Market documents, such as the *Partnership Accomplish Report*, for distribution at relevant conferences. Mr. Ferland said the *Partnership Accomplish Report* is a useful tool in demonstrating what Methane to Markets is about and thanked Partner Countries for providing input on its development.

A suggestion was raised about the possibility of Methane to Markets publishing papers. The ASG said that the current purpose of the Web site is to act as a portal to provide information and links to published documents. Published papers would require more of an academic format. However, people are encouraged to provide ASG with recommendations of resources to be added to the Web site or highlight links to more information. The tools and resources section of

the Web site (www.methanetomarkets.org/tools-resources/tools.aspx#three) includes a section devoted to publishing tools and resources that are useful to the international methane community. Currently, this Web site includes several LFG models and a bibliography of available online documents related to LFG. The ASG could add additional documents to the Web site as they are submitted to the ASG. Alternately; the ASG could add country-specific documents to each country's section of the Web site to address new policies affecting LFG within each country. If a country has an update on a specific LFG project, the Project Tracking Database allows any registered user to submit updates about the project. If a country has an update on a specific landfill, the International Landfill Database allows any registered user to submit updated data for any landfill in the database, or to add a new landfill to the database.

The Steering Committee would like to see continued recruitment of Project Network members and have them provide success stories and spread information about Methane to Markets activities. This raised a question about the lack of verification of Project Network member credentials. ASG responded that because this is a voluntary initiative with limited resources, they are only able to provide a cursory review and do not want to design a system that will limit participation.

5. Future Work

Mr. Ferland encouraged Landfill Subcommittee members to continue to develop country-specific action plans. One lesson learned is that the landfill characteristics vary greatly from country to country. Those that have already completed their plans should update the information in their country profiles, but the Steering Committee has not established a specific timeline for how often the plans and profiles should be reviewed.

The Steering Committee has asked each subcommittee to meet once more in 2010, either in person or by some other means. A related charge is to explore linkages between each subcommittee's work and other international initiatives, particularly in light of the WWT discussion. Suggestions proposed included pairing the event with an International Solid Waste Association meeting or a meeting with other workshops currently planned by the Clinton Climate Initiative. Mr. Louis Chan with OWT HK volunteered to prepare a list of potential events to consider. Mr. Alves from Brazil also mentioned interest in hosting a meeting.

The Steering Committee also requested input on the potential expansion of the Partnership's scope to include methane abatement (e.g., waste diversion, composting, flaring). It seems logical that if an objective of the initiative is to reduce methane emissions, then including a methane destruction and avoidance aspects would be a natural fit. There was a concern expressed by an attendee that these additional topics would complicate the focus of the Landfill Subcommittee, while the U.S. delegate said that the narrow focus makes it difficult to implement projects as part of an integrated waste strategy. For example, India's regulation is focused on composting organic waste to avoid creating methane from landfills. Several delegates said that they wish to comment at a later date after discussing the issue with their colleagues back home.

Post-Expo Landfill Subcommittee Activities

1. International Landfill Database

Ms. Ganguli gave a brief presentation on the International Landfill Database, which is available at www.methanetomarkets.org/tools-resources/tools.aspx#three. It is a voluntary data collection and reporting tool for information critical to project developers, investors, and policymakers. The application is Web-based and relies solely on Partner Countries, Project Network members, and affiliates to provide landfill-specific information. One of the challenges is to keep the database updated and current. In 2009, U.S. EPA added two features to the database to improve usability and access to other related pre-feasibility studies or reports about the landfills in the database. U.S. EPA added a new field to the International Landfill Database that allows users to link to reports contained in the Project Tracking Database or other reports prepared for the CDM or other landfill studies. U.S. EPA also added the capability to enter project data into the International Landfill Database. Currently, energy recovery projects, as well as flare-only projects, can be documented in the database. The user can enter the LFG flow rate for each project, and the database allows for multiple projects to be added to a single landfill to account for sites that may have more than one type of project. Currently, U.S. EPA relies on contractor support to enter data into the database, but U.S. EPA would like to shift data entry and data update responsibilities to Partner Countries.

Another challenge for the Partnership is how to track project development successes. For example, what projects became operational, and when a project began operation. Is there a mechanism to track the development of Methane to Markets-assisted projects? What level of support is required for a project to be considered a Methane to Markets success? For example, would it count as a Methane to Markets-assisted project if the landfill operator attended one of our workshops? Project data related to the Partnership's contribution in achieving methane emission reductions are important for evaluating the effectiveness of the Partnership.

A comment was made that more effort should be made to post feasibility reports and other landfill-related documents in the Project Tracking and International Landfill Databases, as appropriate. The new Web site design prevented users from uploading these documents directly. This feature is now accessible on the new Web site, however, and several pre-feasibility studies and grant reports will be uploaded to the Project Tracking Database. Another suggestion was to add a field that lists partners involved in the project, especially those providing financial or technical support. The amount of GHG emission reduction from each project would also be important to track in the database. Contact information for the individual landfill is important because it is not possible over the long term for the Partner Country representative to know the reductions from every project in his or her country.

Another way to incentivize landfills to update landfill information could be to sponsor international awards, because this would require applicants to provide information on the projects. An annual questionnaire is another way to collect the information. Ms. Ganguli encouraged other attendees with thoughts about how to improve the database to contact her at ganguli.swarupa@epa.gov or submit updates to the ASG at asg@methanetomarkets.org.

2. Development of a Landfill Biogas Project Best Practices Guide

Rachel Goldstein, U.S. Delegate, reported on efforts to develop a best practices guide to assist project stakeholders after a pre-feasibility study has been completed. She referenced the 2004 World Bank Handbook for LFG projects in Latin America as a first step for creating a Methane to Markets guide. U.S. EPA conducted a literature review to determine what other international

LFG project development resources are available and drafted an outline on which topics could be included in the guide. Appendix 4 contains the proposed document topics and a review of available literature since 2001. The shaded items indicate where there is limited literature. Ms. Goldstein encouraged Partner Countries and Project Network members to provide comments on these documents to her at goldstein.rachel@epa.gov or to the ASG at asg@methanetomarkets.org. Within a year, she hopes to publish an electronic version of the document to post on the Methane to Markets Web site. The document would provide links to existing resources, as well as summarize the findings of the Partnership through its work in Partner Countries since 2005.

Action Items

Administrative Items:

- All
 - Provide recommendations to ASG for the next Subcommittee meeting location. Suggested meeting locations presented during this meeting include Brazil, Venice, Italy, or one of the Asian Partner Countries. Meeting suggestions are encouraged to be paired with an technically relevant event in September, October, or November 2010.
 - Identify documents or links to Web sites that should be provided on the Methane to Markets Web site as technical resources for developing LFG projects.
 - Provide feedback on the International Landfill Database and how to better track projects assisted by the Partnership.
 - Provide suggestions on the outline/literature review for the LFG project development best practices handbook.
 - Comment on how best to utilize Japanese IBUKI data to support the goals of the Landfill Subcommittee.

- Partner Countries
 - Publicize Methane to Markets within your country. For example, forward the next *Methane International* issue, which will highlight the Partnership Expo, onto other colleagues and organizations working on methane reduction and climate change in your country.
 - Discuss with colleagues the charge from the Steering Committee to include WWT. Inform ASG on willingness to serve on a WWT task force.
 - Discuss with colleagues the charge from the Steering Committee to include methane abatement in the scope of the Landfill Subcommittee.
 - Developing countries should consider applying for the Methane to Markets grant program. Current deadline is July 29, 2010. www.epa.gov/methanetomarkets/grants.htm
 - Developing countries that have not yet completed a country-specific strategy should consider completing this document for publication on the Methane to Markets Web site. Countries could potentially request assistance on completing the strategy through the above mentioned grant program.

- ASG
 - Identify a task force and coordinate a teleconference to discuss WWT as a focal area of the Landfill Subcommittee or a new subcommittee. The timing would be such that a final decision could be made at the next Subcommittee meeting.
 - Determine best method to collect Partner comments regarding methane abatement.
 - Include a discussion of nominations for 2011 Landfill Subcommittee leadership in the 12th Landfill Subcommittee meeting agenda.



11th Session of the Landfill Subcommittee New Delhi, India, 5 March, 2010

LANDFILL SUBCOMMITTEE MEETING AGENDA

- 12:00 – 12:15 **Welcome Addresses**
Co-Chair Gabriel Blanco (Argentina)
- Brief introduction of all meeting participants
 - Review of Meeting Goals
 - Expo debrief
 - Implementing Steering Committee recommendations
- 12:15 – 13:00 **Country-Specific Statements**
Country Representatives
- Activities and commitments countries plan to bring to the Partnership
 - Feedback from Expo
- Partner countries expected to participate if present:
- | | | |
|-----------|---------|-------------------|
| Argentina | Georgia | Philippines |
| Australia | Germany | Poland |
| Brazil | India | Republic of Korea |
| China | Italy | Russia |
| Chile | Japan | Thailand |
| Colombia | Mexico | Ukraine |
| Finland | Nigeria | United States |
- 13:00 – 13:30 **Updates from Project Network**
Project Network Representatives
- Partnership Activities
 - New project or technology developments
- 13:30 – 13:45 Break
- 13:45 – 14:30 **Working Lunch** in Meeting Room (continue country-specific statements)
- 14:30 – 15:00 **Implementing Steering Committee Recommendations**
Administrative Support Group
- Outcome of Steering Committee
 - Terms of Reference
 - Discussion of charges to landfill sector

- 15:00 – 16:15 **Open Discussion Covering Possible Post-Expo Activities**
- Subcommittee adaptation to new framework for Methane to Markets
 - Reporting and tracking Partnership Accomplishments
Administrative Support Group
 - Summarize highlights of landfill sector in the 2004 - 2009 Partnership Accomplishment Report
 - Tracking new project activities for 2010
 - Development of a Landfill Biogas Project Best Practices Guide
Rachel Goldstein, U.S. EPA
 - (see *Attachment 1* for document topics and a review of available literature)
 - Brainstorming activities to implement charges from Steering Committee
Co-chair Gabriel Blanco
- 16:15 – 16:30 Break
- 16:30 – 16:45 **Planning for Next Subcommittee Meeting**
- Event to held between September and November 2010
 - Solicitation of volunteers to host Subcommittee meeting
- 16:45 – 17:00 **Summary of Action Items Discussed at this Meeting**
- Meeting action items
 - Specific tasks that meeting participants agree to accomplish and report on within specified timeframes
- 17:00 Adjournment

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Appendix 2: List of Attendees at 11th Session of the Landfill Subcommittee

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Methane to Markets

Appendix 4: Draft Outline of International LFG Best Practices Guide

Methane to Markets – Landfill: Australia’s Domestic Picture

- Australian landfills generated 15.6 million tonnes of CO₂-e in 2007. Of this gas generated, 29% (4.5 million tonnes of CO₂e) was captured for energy production or flaring.
- Rates of methane recovery have grown substantially since 1990 when little or no recovery was taking place.
- Of the approximately 450 landfills in operation in Australia, there are over 30 Landfill sites in Australia currently capturing and combusting methane for the purposes of energy production. This represents a 50% increase on the number of landfills previously reported as having capture systems in place over the last five years.
- Methane capture is projected to continue to increase at similar rates to the historical trends, around 2.3 per cent per annum.
- The National Greenhouse and Energy Reporting Scheme (NGERS) commenced in July 2008.
- Under the NGERS, all facilities emitting 25000 tonnes or more of CO₂-e are required to estimate and report their emissions and associated activity data to the Government. Reportable information includes capture of landfill methane for energy production.
- The operation of the NGERS will drive improvement in monitoring and reporting of landfill gas capture as well as innovation in techniques for the estimation of emissions from landfill.
- The NGERS estimation methodologies are subject to ongoing development and refinement. Estimation based on modelling techniques can be calibrated to local conditions using on-site emissions measurement. Another pathway we are exploring is the development of a framework for the use of direct emissions measurement approaches.