



Global Methane Initiative
Draft Minutes from 13th Meeting of the Landfill Subcommittee
Webinar
1 June 2011

Overview

Approximately 14 delegates from Australia, Brazil, Canada, Colombia, Ethiopia, Ghana, Nicaragua, Pakistan, Peru, Philippines, Poland, Serbia, and the United States, as well as 10 members of the Project Network, attended the 13th Landfill Subcommittee meeting. The meeting focused on near-term outreach events planned for 2011 and 2012, as well as recent activities in the expanded wastewater and methane abatement sectors. Partners also had an opportunity to report on other recent activities. Below is a detailed summary of the topics discussed, as well as a list of action items from the meeting.

Welcome and Opening

Co-Chair Rachel Goldstein began by thanking everyone for participating in this pilot virtual meeting. She welcomed first-time and repeat delegates as well as many members of the Project Network in attendance. She noted that the webinar format helps accommodate the travel budget restrictions that many of the Global Methane Initiative (GMI) Partner Countries now experience, while ensuring a well-attended meeting from multiple parts of the world. If the webinar format is successful, she said, GMI hopes to reduce future meeting costs, greenhouse gas emissions, and travel costs by mixing virtual and in-person meetings. She also provided an overview of the agenda and provided instructions on how delegates should ask questions after each item on the agenda.

The meeting agenda is available in this report as Appendix 1. A list of all meeting participants is included in Appendix 2.

Update for the Administrative Support Group

Mr. Henry Ferland, Co-Director of the Administrative Support Group (ASG), provided an overview of GMI membership, an update on the recently issued action plan guidance, a description of new outreach materials related to GMI's expansion into wastewater and mitigation, and an update on planned outreach events for 2011 and 2012.

1. Mr. Ferland updated the participants on the latest GMI membership. He added that although GMI is not actively recruiting new Partners, new countries are still joining. Sri Lanka and Jordan are the two newest Partners, with Sri Lanka's membership currently pending approval by the Steering Committee. Both of these countries expressed an interest in participating in the landfill sector. This will bring the total GMI delegation up to 40 Partners.
2. In 2010, each GMI Partner Country was charged to publish a methane action plan. On 23 May 2011, the ASG issued draft guidance on to all Administrative Liaisons and Delegates to help Partner Countries develop their Action Plans. This guidance is a set of questions, intended to help frame a cross-sector overview that provides a background on a country's methane emissions and public and private sector

stakeholders involved in methane projects. The guidance also includes a set of questions to help each Partner Country define its vision for methane projects, including its priorities for project assistance, an outline of barriers to reducing methane emissions, and ongoing activities or policies to reduce methane emissions or promote methane abatement. The guidance document is not focused on extracting the detailed technical components of each unique sector, but it does encourage countries to include references to sector-specific action plans that may include this more detailed information. Mr. Ferland noted that the ASG has requested comments by 30 June 2011. After compiling the comments, the ASG will update the guidance and present a final guidance for approval by the next Steering Committee meeting in October 2011.

3. The ASG developed several new outreach materials as part of the re-branding transition from Methane to Markets to GMI. Two new fact sheets define GMI and its expanded scope of activities and provide an overview of mitigation opportunities are now available on the [GMI website](#). These factsheets are available in Chinese, English, Korean, Russian, and Spanish. Further, sector-specific GMI factsheets are currently being revised to include case studies of recent project successes.
4. A new GMI all-partnership meeting, similar to the 2009 meeting in Monterrey, is tentatively planned for Poland in October 2011. The ASG seeks to merge the components of each subcommittee meeting with the related technical and policy sessions instead of keeping the Subcommittee work in a separate, less attended, meeting. Mr. Ferland noted that this approach will allow delegates and Project Network members to discuss relevant barriers and opportunities in the landfill sector. He encouraged all of the delegates to contribute ideas for potential speakers, case studies, or technical topics to highlight during the planned landfill technical and policy session.
5. In closing, Mr. Ferland updated attendees on the initial plans for a third Partnership Expo, tentatively planned for late 2012. He added that the ASG is actively seeking host countries and he anticipates finalizing the location by the next Steering Committee meeting in late 2011. He also reminded the attendees that the Expo events require a significant contribution from each sector in order to develop the agenda, target event sponsors and speakers, and create posters for project opportunities and project success stories.

Discussion of the ASG Updates

Mr. Wondwossen Sintayehu (Ethiopia) asked the ASG to clarify the intended scope and detail of a methane action plan. Mr. Ferland indicated that the overarching action plan would be a three- to four-page vision statement that would reference the sector-specific action plans as well as any detailed studies of ongoing methane project or policy work in the country. Mr. Ferland noted that the ASG is currently soliciting comments on whether the questions in the draft guidance are comprehensive enough to develop a vision statement for Ethiopia to participate in GMI.

Mr. Lukman Salifu (Ghana) indicated that his country will need some assistance in completing item 5 of the Action Plan Guidance, related to policy, market, and legal drivers to advance methane projects. A set of examples of successful policies in other GMI Partner

Countries could help Ghana improve its access to the Clean Development Mechanism (CDM) and other finance markets.

Ms. Sandra Lopez (Colombia) suggested that each Partner Country should work to strengthen the relationship between GMI and other international climate change initiatives by referencing the Nationally Appropriated Mitigation Actions (NAMAs) within the GMI action plans.

Methane Abatement Technology Preferences

Ms. Goldstein referenced the earlier discussion of methane abatement during the 12th Landfill Subcommittee meeting in Venice. She noted that while each Partner Country has its own preferences and hierarchies of waste management and methane abatement technologies; the goal of today's discussion was for each participant to provide the group with their country's perspectives or recent shifts toward certain methane abatement technologies, in order to help GMI prioritize its efforts under this larger methane abatement scope of work.

Dr. Basharat Bashir (Pakistan) noted that Pakistan is currently preparing a pre-feasibility study for a 10-megawatt waste to energy (WTE) plant in Karachi. He provided some details of the plant, which has an expected design capacity of approximately 12,000 metric tons per day. He noted that the U.S. Trade and Development Agency has sponsored a study to provide an overview of several technology designs including mass burn and refuse-derived fuel. Dr. Bashir asked if GMI could provide recommendations on selecting the most appropriate technology. Ms. Goldstein noted that the United States could provide a list of WTE technologies that are currently used in the United States.

Ms. Lopez noted that Colombia is currently developing a low carbon initiative to prioritize actions for reducing greenhouse gases within the country. She added that this program will complement the GMI methane action plan. As part of the initiative, Colombia plans to estimate the cost of various waste management and methane abatement technologies; Ms. Lopez asked whether GMI could peer-review their document and provide some recommendations on appropriate energy recovery technologies for landfills of various sizes. She also noted that the initial technology priorities in Colombia are landfill gas (LFG) energy and capture, composting, and wastewater digestion.

Ms. Achenyo Idachaba (Greennovative Chain LLC) commented that Nigeria has examples of both formal (windrow) and informal (waste mining) composting applications. She suggested that a training session on the types of composting and the benefits of each type would be a useful service that GMI could provide for Nigeria.

Mr. Brian Guzzone (ERG) noted that the appropriate abatement technologies often depend on site-specific conditions, which makes it difficult to assign general "grades" for technologies. He said it might be more useful to have a guidance document that explains the pros and cons of various methane abatement technologies, as well as the site-specific elements that must be assessed in order to match a technology to a specific site. Ms. Goldstein agreed that site-specific conditions are a very important part of technology selection.

Mr. Jose Henrique Penido Monteiro (Brazil) updated delegates on a new national policy on solid waste management that was issued in December 2010. He emphasized that an overarching national policy marked a huge achievement given the large number of

municipalities in Brazil. He also added that over 95 percent of the landfills in over 5,000 municipalities are currently using open dumps to manage their waste. However, this policy is expected to require these communities to transition these dumps into regional sanitary landfills. In this regional approach, the states appoint private companies to operate the landfills and each municipality in the region serves as a shareholder in the private company. Mr. Penido expected this form of public-private partnership to reduce the impact of short-term political transitions on longer-term landfill ownership and operations decisions. Mr. Penido also provided an update on an LFG energy project in Rio de Janeiro at the Gramacho landfill, where the LFG will combine with other refinery gases to fuel industrial processes at the refinery; he also spoke of a new initiative within Rio de Janeiro that is exploring the use of LFG as a vehicle fuel such as liquefied or compressed landfill gas. As well as describing these developments, however, Mr. Penido said that obtaining approval of the CDM methodologies for combined biogas and industrial process gas stream projects has been challenging.

Mr. Salifu indicated that anaerobic digestion and composting are the top priorities for Ghana. He noted that a private company in Accra is developing a compost plant, but there are some questions about whether this composting can be combined with LFG capture or anaerobic digestion to increase the methane capture rate from the facility. Mr. Salifu said that anaerobic digestion technologies may also provide a solution for treating fecal sludge that is currently being directly discharged into the ocean.

Mr. Penido brought up aerobic composting using a simplified windrow process, which he said is a very important methane abatement technology for developing nations that have a high organic content in their waste stream. There are more advanced technologies, he said, but many of these require sophisticated operators and complicated equipment that risk operational failures in less developed areas.

Planning for 2011 Cross-Sector Meeting

Ms. Goldstein encouraged delegates and members of the Project Network to brainstorm ideas for the policy and technical sessions at the upcoming cross-sector meeting. She noted that these ideas could include case studies, methane abatement technologies, or integrated solid waste management plans. Mr. Ferland re-emphasized that the ASG is planning to re-organize the meeting to combine subcommittee sessions with technical and policy sessions instead of holding separate administrative meetings.

Drawing on earlier comments from Mr. Penido, Ms. Goldstein suggested that one of the policy tracks could discuss CDM methodologies for innovative LFG project types. Mr. Penido agreed with the suggestion, but he also noted that many people could use help in choosing an appropriate project type in order to develop a successful project design document. He indicated that, although the income from the CDM was originally allocated for improving solid waste management in the areas receiving the credits, it is very difficult to generate sufficient income from CDM projects after all of the validation, project construction, and project maintenance costs are accounted for.

Mr. Guzzone suggested that GMI could invite methane abatement technology manufacturers to speak about their project installations with respect to site-specific considerations that were considered during the technology selection process. Alternatively, GMI could invite grant recipients to speak about their experiences with recent pilot project demonstrations and the

LFG system operations, performance, and challenges facing the projects over time, since many of these grant projects will have been operating for over two years at the time of this cross-sector meeting. Finally, Mr. Guzzone suggested that a session on wastewater, either municipal or industrial process wastewater, depending on the focus on the expanded wastewater sector in GMI, should be included in order to address the increased scope of GMI.

Mr. Chris Godlove noted that how to minimize, manage, and treat leachate is a very important topic for landfill projects. He added that leachate is one of the biggest barriers to improving the performance of LFG capture and utilization projects.

Mr. Penido suggested a session devoted to installing solar panels on top of the landfills as a mechanism to help manage runoff. He added that these types of caps could serve two productive purposes, reducing leachate and increasing electricity production rates at the landfills, both of which could help pay for the advanced capping systems.

Dr. Basharat Bashir agreed with a session on leachate, and asked that this session include a focus on how to handle leachate and methane from open dumps in addition to handling mechanisms at more engineered sites. Dr. Bashir also suggested a policy session comparing feed-in tariffs for biomass and WTE technologies in various Partner Countries in order to inform emerging policies under development. For example, Pakistan is currently trying to update its feed-in tariffs; Dr. Bashir noted that he would be sharing the draft national renewable energy policy with GMI to circulate among the subcommittee members for comment. Ms. Goldstein noted that many countries are actively addressing incentives for biomass and WTE technologies. She referred Dr. Bashir to the International Energy Agency (IEA) policy document [Turning a Liability Into an Asset: the Importance of Policy in Fostering LFG Use Worldwide](#), prepared for GMI (then Methane to Markets) in 2009. Further IEA has developed a [methane portal](#) containing several other publications and presentations devoted to methane energy policies. Ms. Singleton also suggested the [IEA renewables database](#)—which is organized by policy type and country of issuance—as a resource for numerous renewable energy policy examples

U.S. EPA Grant Awards Updates

Ms. Goldstein provided an update on recent grant awards as well as the upcoming grant solicitation that is expected to be issued later in 2011. Thirteen Partner Countries have received recommendations for grant awards for capacity-building, landfill inventories, and landfill assessment studies. Ms. Goldstein also noted that the new grant solicitation will include wastewater sector project options as well as methane abatement project options from the landfills sector, such as composting and other abatement projects. She advised all delegates to carefully review the grant solicitation to ensure that their responses are within the scope of the official request for proposals.

Wastewater Outreach Updates

Mentioning the lengthy discussion about wastewater that occurred during the 2010 [Venice meeting](#), Mr. Godlove invited delegates to provide an update on activities since this prior discussion. He himself provided an update on recent outreach activities by the U.S. Environmental Protection Agency (EPA) in the wastewater sector. Presently, EPA is attending the Rio de Janeiro Association of Sanitation and Environmental Engineering

(ABES), and Mr. Godlove will be presenting on reducing methane emissions from wastewater plants. He also updated delegates on the stakeholders in the ABES meeting, including the Secretary of Environment for the state of Rio de Janeiro, the leaders of a local public utility, directors of a major Brazilian biogas research corporation, several international city officials from Los Angeles and other major cities, and representatives from Gesellschaft für Internationale Zusammenarbeit (GIZ). Mr. Godlove indicated that EPA is using this conference to engage with stakeholders in the wastewater sector and receive feedback on prioritizing GMI's focus on technical support and outreach in the wastewater sector. The GMI presentation in Rio de Janeiro will include case studies of methane energy projects at wastewater plants in the United States.

Mr. Godlove also updated the delegates on preliminary wastewater methane energy project research completed under other offices and programs at the U.S. EPA. He indicated that EPA's Combined Heat and Power Partnership and EPA's Office of Water are also engaged in promoting energy recovery at municipal wastewater plants. In addition to working with other internal EPA programs, Mr. Godlove has been working with a nonprofit, the Renewable Energy & Energy Efficiency Partnership, to explore the types of projects receiving grants from their organization and how GMI's role can complement the work already underway from this leading wastewater sector organization. He also encouraged delegates to identify key organizations and stakeholders that may respond to the upcoming EPA grant solicitation in order to ensure a strong pool of applicants for the grants in this new sector. In closing, Mr. Godlove told delegates that GMI was recently accepted to coordinate and speak at a panel devoted to methane reductions from the wastewater sector at the Non-CO₂ Greenhouse Gas Conference ([NCGG-6](#)) in Amsterdam. The conference will be held 2–4 November 2011 and GMI will be soliciting Partner Countries to participate in the panel on their recent methane projects in the wastewater sector.

Dr. Bashir noted that Pakistan has three main sources of wastewater: municipal wastewater and industrial wastewater (both primarily from the sugar industry) and agricultural wastewater from animal effluent. He asked how each type of wastewater was related to the scope of GMI. He added that in Karachi there is a large herd of buffalo spreading effluent into the sea, and he offered to send some examples of this project to the subcommittee. He also asked if GMI has any examples of small-scale examples of energy recovery from wastewater. Mr. Godlove responded that GMI handles agricultural and industrial food processing wastewater under the Agriculture Subcommittee, while the Landfill Subcommittee currently focuses on municipal wastewater. He did recognize that smaller decentralized energy systems are an important aspect of the municipal wastewater sector, though, and he referenced a [guidebook from the U.S. EPA's Combined Heat and Power Partnership](#) that includes examples of different technologies. He noted that this guide suggests a threshold of 5 million gallons per day in order for wastewater methane anaerobic digester projects to become financially feasible.

Update on International Best Practices Guide

Ms. Goldstein told delegates that officials from the U.S. EPA and the International Solid Waste Association (ISWA) recently signed a [Memorandum of Understanding](#) at the June ISWA meeting in Moscow, Russia, to support the landfill sector of GMI. She added that GMI hopes that the memorandum will increase collaboration between the two solid waste sector organizations. She noted that ISWA's network and established conference calendar have been very beneficial to previous GMI outreach events and GMI expects that ISWA's knowledge of

other methane abatement processes and technologies will be a great resource for the expanded scope of the landfill sector.

As well as collaborating with GMI on outreach events, ISWA offers several useful publications for the solid waste industry, such as the recently updated [Landfill Operational Guidelines](#). The U.S. EPA is currently drafting an operational best practices guide for international LFG gas collection and energy systems to complement these ISWA guidelines. Ms. Goldstein described the structure of the guide and the current focus of each of its seven chapters: landfill site operations and maintenance, LFG modeling, collection and flaring systems, energy recovery technologies, creating a market for LFG (e.g., feed-in tariffs, laws and policies supporting distributed generation), project finance, and developing RFPs for LFG energy and flaring projects. Ms. Goldstein noted that the guide will feature several case studies; she asked Partner Country delegates and Project Network members to consider submitting suggestions for these case studies, particularly interesting cases that involved overcoming challenges facing LFG energy projects in GMI Partner Countries. She also invited volunteers to participate in the peer review of the document, which is scheduled for 1 August to 30 October 2011.

Dr. Bashir, Mr. Salifu, and Mr. Sintayehu volunteered to conduct a peer review of the document and Mr. Sintayehu indicated that she could provide some examples for case studies.

Closing

Ms. Monika Sklarzewska (Poland) thanked everyone for participating and invited everyone to Poland for the next meeting. Co-Chair Lopez also expressed her gratitude to everyone and, Mr. Ferland indicated that a recording of the webinar and meeting notes will be provided on the GMI website.

Summary of Action Items

ASG Action Items

- The ASG will incorporate suggestions received on the draft action plan guidance and issue a final guidance for approval by the Steering Committee at its next meeting.
- The ASG will update and translate additional printed fact sheets. These fact sheets will be distributed for use in GMI outreach events and on the GMI website.
- The ASG will provide Pakistan with a link to IEA documents and renewable energy databases.
- The ASG will be soliciting volunteers to participate in the GMI wastewater panel at the November NCGG-6 conference in Amsterdam.

Partner Country Action Items

- Delegates and Project Network members are encouraged to contribute ideas for potential speakers, case studies, or technical topics to highlight during the 2011 GMI all-partnership meeting planned for the second week of October in Krakow, Poland.

- Delegates are encouraged to contact the ASG if they are interested in hosting the next Expo event, tentatively scheduled for late 2012.
- Delegates interested in conducting a peer review of the International Best Practices guide or providing case studies to highlight in the guide should contact Rachel Goldstein. New case study material should be submitted by August 2011 and the external peer review process will occur between August and October 2011.
- All delegates are encouraged to identify key organizations and stakeholders in the municipal wastewater sector that may be eligible for the upcoming U.S. EPA grant solicitation.
- All participants are encouraged to submit comments on the webinar format of the subcommittee meeting or suggestions for improvement.
- The United States will update the Best Practices Guide chapters with comments received from both its internal and external peer review.
- The United States will provide a list of reference documents and resources for WTE installations currently used in the United States.
- Pakistan will share a copy of its draft national renewable energy policy as well as a copy of the buffalo wastewater effluent project in Karachi to the ASG to circulate among the subcommittee members for comment.



Attachment 1: Landfill Subcommittee Agenda

**GLOBAL METHANE INITIATIVE
LANDFILL SUBCOMMITTEE
TELECONFERENCE AND WEBINAR
1 JUNE 2011**

Landfill Subcommittee Meeting Agenda

(See Attachment 1 for your local time of the teleconference)

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| 10 Minutes | Welcome Addresses
<i>Landfill Subcommittee Co-Chairs Gabriel Blanco (Argentina), Sandra Lopez (Colombia), and Rachel Goldstein (United States)</i> |
| 25 Minutes | Update from the Administrative Support Group (ASG):
<i>Henry Ferland, ASG</i> <ul style="list-style-type: none">• New Partner Countries• Upcoming Outreach Events• Completing Action Plans and Lists of Questions |
| 15 Minutes | List of Methane Abatement Technologies:
<i>Rachel Goldstein (United States) to lead discussion.</i> <p>Delegates will each have an opportunity to present a list of prioritized activities or technologies for consideration by the subcommittee. The ideas generated should cover technologies and project development in the context of both rural and urban areas. Based on input submitted from each delegate, we will develop a discussion of the highest priority technologies.</p> |
| 20 Minutes | Planning for Cross-Sector End-of-Year Meeting
<i>Rachel Goldstein (United States)</i> <ul style="list-style-type: none">• Technical and policy sessions for landfill and wastewater• Speaker and case study ideas |
| 10 Minutes | Update on US EPA Grant Awards New Grant Solicitation
<i>Rachel Goldstein, United States</i> |
| 20 Minutes | Wastewater Sector Update
<i>Chris Godlove, United States</i> <p>Update on existing and future efforts to engage in this sector. Delegates will have an opportunity to update the subcommittee on ongoing efforts in the wastewater sector.</p> |
| 20 Minutes | Closing and Upcoming Activities
<i>Rachel Goldstein, United States</i> <ul style="list-style-type: none">• International Best Practices Guide Status update<ul style="list-style-type: none">• Schedule for peer review. |

Partner Country Delegates

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