

# **MSW Subcommittee Progress Report**

**Steering Committee Meeting  
March 2013**

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**Vancouver, Canada**

**Co-Chairs Tom Frankiewicz (United States)  
and Diana Milena Rodríguez (Colombia)**



# Overview

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- Activities since July 2012
  - Singapore Highlights
  - November 2012 Internet Meeting Highlights
  - International Best Practices Guide
  - New Tracking System
- Next Steps

# Subcommittee Activities Since October 2011

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- **May 2012 Internet Meeting**
  - **Renaming of Subcommittee**
    - Landfill Subcommittee became Municipal Solid Waste (MSW) Subcommittee to reflect broader methane avoidance scope
  - **Subcommittee Leadership Discussed**
    - Seeking another co-chair
  - **Methane Action Plans**
    - Nicaragua, Ethiopia and US submitted draft plans
  - **Possible Future Work**
    - NAMAs for the waste sector
    - Identify cooperation with CCAC initiatives

# Subcommittee Activities Since October 2011 (Continued)

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- July 2012 - Singapore
  - New Sector Action Plan
    - Subcommittee will release survey to members to evaluate revised action items covering broadened scope to methane avoidance
  - Topics for Methane Expo 2013
    - Call for abstracts and projects is open

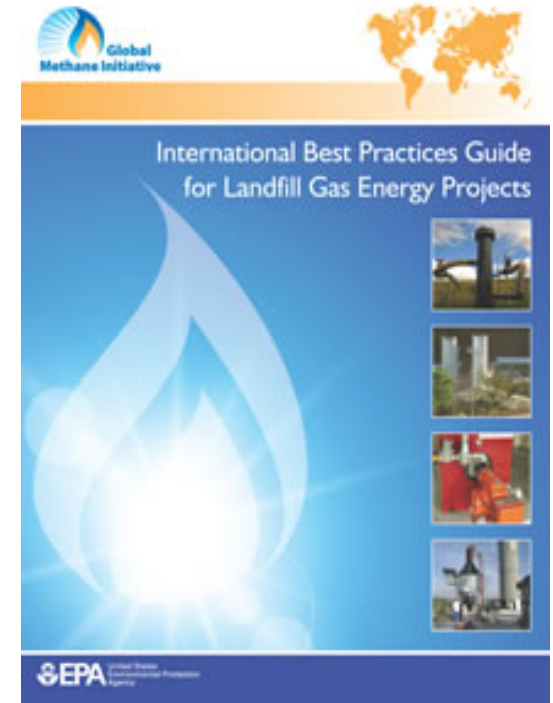
# Subcommittee Activities since July 2012

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- November 2012 Internet Meeting
  - Input Sought for Sector Focus Areas
    - Released survey to members to determine future focus areas due to broadened methane avoidance scope
  - Methane Action Plan
    - Colombia finalizing waste sector plan and will present at Methane Expo in Vancouver
  - Methane Expo 2013 Preparations
    - Draft agenda developed, review of topics and speakers, and plan for NAMAs roundtable
    - Delegates to encourage participation from their countries
    - Partner Country booths and project posters

# International Best Practices Guide for LFG Energy Projects

- Released September 2012
  - Integrated solid waste management concepts
  - Solid waste disposal design and operations
  - Design and construction of LFG collection and control
  - Energy recovery technologies
  - Market drivers for LFG energy
  - LFG modeling <http://globalmethane.org/tools-resources/tools.aspx#ibpg>
  - Project economics and financing
  - Case studies



# Subcommittee Activities Since July 2012 (Continued)

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- New Landfill and MSW Activity Tracking Database Interface released April 2012
  - <http://globalmethane.org/activities/indexact.aspx>
  - Allows for searching by:
    - Site name (name of landfill, compost, AD)
    - Activity type (e.g., study, workshop, inventory)
    - Project status (operational, construction, shutdown, planned)
  - Replaces former International Landfill Database and GMI Project Tracking Database

# Next Steps

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- Present summary of survey results and discuss future actions
- Post consolidated list of completed Partner Country Methane Action Plans on GMI.org website
- Continue to post results of landfill assessments and inventories on GMI.org website
- Develop waste sector NAMA tools and resources



# Appendix: Example Activities by Country

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- **Argentina**
  - In 2011, the federal government opened a bidding system to purchase up to 100 MW from biogas electricity, including LFG.
  - A new pilot LFG electricity project was installed at the Neuquen landfill at the end of 2012 with the help of a grant from US EPA and the local ISWA Chapter.
- **Brazil**
  - In 2012, a handbook was released on the regulatory mechanisms in Brazil affecting the development of landfill methane energy recovery projects.
  - The LFG project at Gramacho Landfill with Petrobras Refinery continues construction.
  - Central de Resíduos do Recreio LFG Pilot Project -- a non-commercial, small-scale LFG-to-LNG purification, compression and bottling station -- came online in 2012.
- **Bulgaria**
  - The Ministry of Environment and Water (MOEW) is finalizing a waste sector methane action plan, which will be presented at Methane Expo 2013.
  - Bulgaria is heavily invested in closing older dump sites and in favor of developing regional sanitary landfills with LFG recovery to satisfy European Union directives.
- **Canada**
  - Work on waste sector NAMAs in Mexico, Colombia and Chile is underway. A summary of feed-in tariff regulation in Colombia is expected to be available in 2013.
  - Preparations for Methane Expo 2013 in Vancouver.

# Appendix: Example Activities by Country (Continued)

- **Chile**
  - GMI visited and evaluated the GCS performance at El Molle Landfill and made recommendations for O&M improvements.
  - SUBDERE and US EPA held workshops in March and August 2012 on landfill O&M and guidance for developing a LFG project.
- **China**
  - Assessment reports were completed for Xitanyang (Tongzhou), Changshankou and Beiyangqiao (Wuhan), and Liliutun (Beijing) landfills.
  - Currently 46 LFG projects exist in China. MOHURD reports the favorable feed-in tariff has helped promote projects.
- **Colombia**
  - Developed a Colombia Biogas Model to estimate emissions and construct abatement cost curves. A workshop on the model was held in December 2011.
  - The National Center of Cleaner Production and Environmental Technologies (CNPML) developed a guidebook to support LFG energy project procurement in Colombia.
  - Four new LFG flaring projects have come online since 2011.
  - Finalizing methane action plan for submittal at Methane Expo 2013.
- **Dominican Republic**
  - A workshop on landfill O&M was conducted in 2012.
- **Ethiopia**
  - Solid Waste & Landfill Country Profile and Methane Action Plan was released in 2012.

# Appendix: Example Activities by Country (Continued)

- **Finland**
  - By 2016, it is predicted that only 10 percent of Finland’s solid waste will be landfilled.
  - A favorable tariff for biogas electricity is fueling demand for anaerobic digestion.
- **Germany**
  - All waste that is not recycled is incinerated or sent to mechanical biological treatment (MBT). Since 2005, strict rules are in place concerning waste going to landfills.
  - In 2012, the ASG met with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to discuss collaboration on waste-related initiatives.
- **Ghana**
  - There is a goal to obtain 10 percent of electricity from renewable sources and part of Ghana’s carbon development strategy is to reduce emissions from the waste sector.
- **India**
  - A study evaluating the performance of permeable layers to improve LFG collection efficiencies was completed.
  - The government is encouraging integrated solid waste management practices with a goal of reducing waste going to landfills by 25 percent.
- **Indonesia**
  - A workshop on landfill and GCS O&M was held in July 2012 in Jakarta in collaboration with the Ministry of Public Works.
- **Jordan**
  - A country-wide survey of organic waste producers, including MSW, revealed Jordan’s potential for electrical and thermal power.

# Appendix: Example Activities by Country (Continued)

- **Mexico**
  - Over 100 people attended a 3-part training in Hermosillo, Tijuana, and Cozumel on LFG modeling and LFG energy projects.
  - The Border Environment Corporation Commission, International City/County Management Association developed a manual on developing and implementing LFG projects.
  - In 2012, a comprehensive inventory of 300 landfills in four states of Mexico was completed.
  - Mexico City awarded Sistemas Eléctricos Metropolitanos (SEMSA) contract in 2012 to close and remediate Bordo Poniente Landfill (largest in Mexico), including capturing biogas to generate electricity for public lighting and subway system.
- **Nicaragua**
  - A waste sector methane action plan was submitted in 2012.
- **Nigeria**
  - The Lagos Waste Management Authority (LWMA) completed a feasibility study on the Abule Egba Dump Site and Solous Landfill in December 2011. LWMA is evaluating energy recovery options.
  - In June 2012, over 100 attendees participated in workshop on LFG management, carbon finance, and public-private partnerships.
- **Peru**
  - In September 2012, GMI conducted a workshop on integrated solid waste management in Lima.
  - Developing a NAMA for an integrated solid waste management strategy across all levels of government.

# Appendix: Example Activities by Country (Continued)

- **Philippines**
  - Working to build capacity to develop waste sector NAMAs.
  - A national solid waste management strategy includes a focus to reduce disaster and climate change risks.
  - In 2012, a 3-part LFG Forum was conducted by the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) in Quezon, Cebu, and Cagayan de Oro.
  - PCIEERD began drafting a methane action plan.
- **Poland**
  - A new act provides for regional landfills that will operate using best management practices.
  - Waste sent to landfills is declining as a result of significant recycling and reclaiming of industrial waste.
  - In 2012, GMI met with the Polish Ministries of Environment and Economy to discuss the landfill database.
  - GMI presented on the state of LFGE at the 2012 Biogas Conference in Warsaw.
- **Russia**
  - The Central Landfill in Novokuznetsk installed a set of test wells and commissioned a flare project in October 2012.
  - Russian landfill owners participated in a study tour to multiple landfills in Virginia and Maryland to observe LFG utilization technologies.

# Appendix: Example Activities by Country (Continued)

- **Serbia**
  - The University of Novi Sad developed an inventory of over 40 landfills and completed a pre-feasibility study for the Novi Sad Landfill.
  - A national waste management strategy with feed-in tariffs for biogas was passed in 2010 and is currently under revision.
- **Sri Lanka**
  - A renewable energy goal of 20 percent by 2020 is expected to fuel demand for biogas and other waste-to-energy projects.
- **Turkey**
  - Several site visits to landfills and the pilot MSW anaerobic digester project at Kocaeli were conducted in 2012.
- **Ukraine**
  - The Lugansk landfill installed a LFG flare in December 2011.
  - The Kiev #5 landfill began operating a 900-kW electricity project in April 2012.
- **United States**
  - Drafted MSW sector action plan.
  - Coordinated peer review and final editing of International Best Practices Guide for LFG Energy.
  - Drafted a review of NAMA activities in the waste sector and identified gaps in information, tools and resources to support these activities.
  - Sponsored landfill inventories in Bulgaria, Chile, Philippines, and Serbia.
  - Conducted 31 site visits to landfills.
  - Trained over 1,200 people at 16 workshops.
  - Developed Direct Use and RFP Resource fact sheets.