



Methane to Markets

Overview and Outcomes of Landfill Sector Expo and Technical Sessions

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Overview of Landfill Technical Session Attendance

- Average of over 75 attendees per session
- Comprised of national and municipal governments, landfill and landfill gas industry (e.g., project financiers, developers, technology vendors, consultants)
- Strong participation in Q&A stimulated discussion and suggestions for advancing LFG recovery and use under M2M.

Landfill Sector Posters and Flyers Displayed at the Expo

Country	Landfills	Estimated Average Annual Potential Emission Reductions (MTCO ₂ E) over a 15-year project life
Argentina	5	201,900
Brazil	11	13,824,000
China	11	199,600 (estimates only available for 5 out of 11 sites)
Colombia	4	1,688,400
Ecuador	5	692,900
India	3	191,200
Mexico	4	246,700
Ukraine	4	185,100
Russia	1	323,700
TOTALS	49	17,553,000₃

Overview and Outcomes of Technical Sessions

DAY 1: Framing the Barriers to LFG

- Image of LFG as an “under-performer” due to:
 - Modeling errors
 - Poor assumptions with respect to actual conditions
 - Waste streams
 - Site Engineering
 - Site Management
 - Environment/Climate
 - Capacity to Operate and Maintain the LFG collection system over the long-term
 - Lack of robust financial sensitivity analysis
 - Contractual/Ownership disagreements
 - Barriers to mid- to small landfill projects

Experiences Shared in Solving the Problems

- Modeling
 - Development of country-specific LFG models and multi k models
 - Assessment and guidance for reasonable modeling parameters
- Field Data to Improve LFG Prediction
 - An essential component for projecting international LFG projects
 - Ongoing data collection helps to communicate how landfill operations impact gas collection
- Landfill and LFG Collection Operation and Maintenance
 - Alternative cover materials and landfill operation and maintenance practices to maximize collection efficiencies
 - Hands-on approach to landfill operator capacity training
- Technology Experience and Improvement
 - LFG technologies and project development experience is over 30 years old (conventional/proven)
 - Challenge is to adapt and communicate these technologies to each country's solid waste management situation

Potential for Future Growth

- LFG industry leaders reinforced the remaining capacity of this market for the foreseeable future
 - Methane mitigation opportunities provide capital and innovation to advance LFG projects
 - To date approximately 50 LFG CDM projects, but there is potential for thousands more
 - Tonnes of waste generated and sent to landfills will continue to increase, especially as developing countries transition to more consumer-based economies
 - Engineering, design, and operation of landfills are evolving into sites that have planned for LFG collection
 - In today's global energy markets, demand exists for locally produced, reliable energy sources
 - Small LFG Projects
 - Innovative applications of small amounts of gas
 - Bundling smaller sites to reduce fixed costs of CDM development

Landfill Gas Sector Needs

- Country-specific information and tools
 - Guidelines for gas collection potential from annual waste acceptance
 - Models
- Tracking
 - New and improved LFG methodologies
 - Country-specific regulatory frameworks and incentives such as renewable energy tariffs
- Posting results and communicating lessons learned from recent assessment reports and pre-feasibility studies