

# Municipal Solid Waste Update

## PHILIPPINES

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**NONILO PENA & RACHEL HABANA**  
**GMI Municipal Solid Waste Subcommittee Meeting**  
**Vancouver, Canada, 13 March 2013**



# Partner Country Update

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- Regulatory Update
  - Ecological Solid Waste Management Act of 2000
    - LGU ensures implementation & enforcement of the Act
    - Prohibits new open dumpsite, conversion of open dumpsites into controlled disposal and later on replaced with sanitary landfill

# Partner Country Update

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- Regulatory Update
  - Clean Air Act of 1999
    - Incinerator Ban
  - Renewable Energy Act of 2008
    - Fiscal & Non-Fiscal Incentives
      - Incl. Waste-To-Energy Project
      - Feed-In-Tariff = P 6.63/kWh (US\$0.16)
  - Climate Change Act of 2009
    - GHG Mitigation & Adaptation Strategies
    - LGU CC Action Plan

# Partner Country Update

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- Implementation of national solid waste plans/directives
  - National SWM Strategy
  - LGU 10 year SWM Plan
  - 25% waste diversion – reuse, recycle & composting & others
  - Material Recovery Facility

# Partner Country Update

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- Project update (landfill gas energy, AD, composting)
  - Existing Landfill Gas Power Plants
    - Three landfill sites with total installed capacity = 13.9 MWe
  - Anaerobic Digestion
    - No installed power plant yet
    - Technology search, assessment & pre-FS
  - Composting
    - Number of composting facilities, like bioreactors, vermi-composting

# Methane Action Plan

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- Summary: Goals
  - Improve methane reduction
  - Recover methane from sanitary landfills, controlled disposal facilities and open dumpsites
  - Establish institutional capacities on methane avoidance, recovery and utilization
  - Build linkage mechanisms among stakeholders
  - Create environment-friendly enterprise and livelihood opportunities

# Methane Action Plan

- Activities to promote mitigation/abatement
  - Capacity Building
  - GIS Database Landfill Inventory
  - Landfill Gas Estimation Model

The screenshot shows the website's header with the title "Philippine Geographic Information Systems (GIS) - Based Landfill Inventory" and a search bar. Below the header is a navigation menu with links for HOME, LPG MODEL, SWD FACILITIES, LOCATION MAP, CONTACT US, and USER LOGIN. The main content area is divided into three columns: "Brief Project Overview" with a text block and a "More..." button; "Interactive Map" with a map of the Philippines; and "Partner Agencies" with logos for DOST ROs and other agencies. The "About the Site" section is partially visible below the overview.

Philippine Geographic Information Systems (GIS) - Based Landfill Inventory  
A Project of PCIEERD-DOST under the Global Methane Initiative

HOME LPG MODEL SWD FACILITIES LOCATION MAP CONTACT US USER LOGIN

**Brief Project Overview**  
A US - Environmental Protection Authority - supported project entitled: "Capacity Building on Methane Emissions Recovery for Energy Production from Landfills in the Philippines," under the Global Methane Initiative (GMI), executed by the Philippine Council for Industry, Energy and Emerging Technology Research and Development of the Department of Science and Technology (PCIEERD-DOST) and coordinated with the National Solid Wastes Management Commission (NSWMC), DOST Regional Offices and various stakeholders.  
[More...](#)

**About the Site**  
An online repository of the solid waste disposal facilities in the Philippines. It features an interactive map showing both geographical and basic data about landfill facilities in the Philippines, with links to the actual landfill profile pages containing relevant information about the facility.  
[More...](#)

**National Action Plan**  
Currently Being Drafted  
[More...](#)

**Interactive Map**

**Partner Agencies**  
DOST ROs



# Methane Action Plan

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- Drivers to advance project development
  - Awareness Campaigns
  - Pre-feasibility Study for LGU
  - Project Profitability
  - Financing
  - Best Practices
    - Business models
    - Technology Options & Providers



# Methane Action Plan

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- Challenges to mitigation/abatement
  - Awareness
  - Technological
    - Techno-economic viability
  - Political – Local Government
    - Financing
    - More resources for CC Adaptation

# Methane Action Plan

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- Public and private sector involvement
  - LGU mandated to manage or outsource SWM
  - All existing Landfill Gas Power Plants are operated by private sector

# Methane Action Plan

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- Barriers / Assistance needed / Information needed
  - High investment cost & long pay-back period
  - Inadequate technical service & equipment providers
    - Pre-feasibility & detailed project design
    - Business models

# Nationally Appropriate Mitigation Action (NAMA)

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- NAMA Update
  - Formulation Stage
  - Capacity Building
    - NAMA & LEDS
  - Institutional Arrangements
    - Framework Mechanisms

# Nationally Appropriate Mitigation Action (NAMA)

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- Cooperating agencies: NGOs, development agencies, or assisting countries
  - Climate Change Commission
    - Sectoral Delineation
      - Waste, Energy, Agriculture, Transport, Industry, Forestry
      - Lead Government Agencies Designated
- Official Development Assistance

# Nationally Appropriate Mitigation Action (NAMA)

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- Waste sector
  - GHG Inventory for MSW: **MRV**
  - Methane Avoidance
    - Waste Diversion (Reuse, Recycle)
    - Composting
  - Landfill Gas Utilization & Flaring
  - Anaerobic Digestion
  - Thermal Processing

# Bacavalley, San Pedro, Laguna – 4.0 MW



# Montalban Methane Power Corporation – 9 MW





# 0.9 MW Pangea Green Energy Philippines Inc. (Payatas, Quezon City)



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**THANK YOU**