

# United States Update to Municipal Solid Waste Subcommittee

2 July 2012  
Singapore



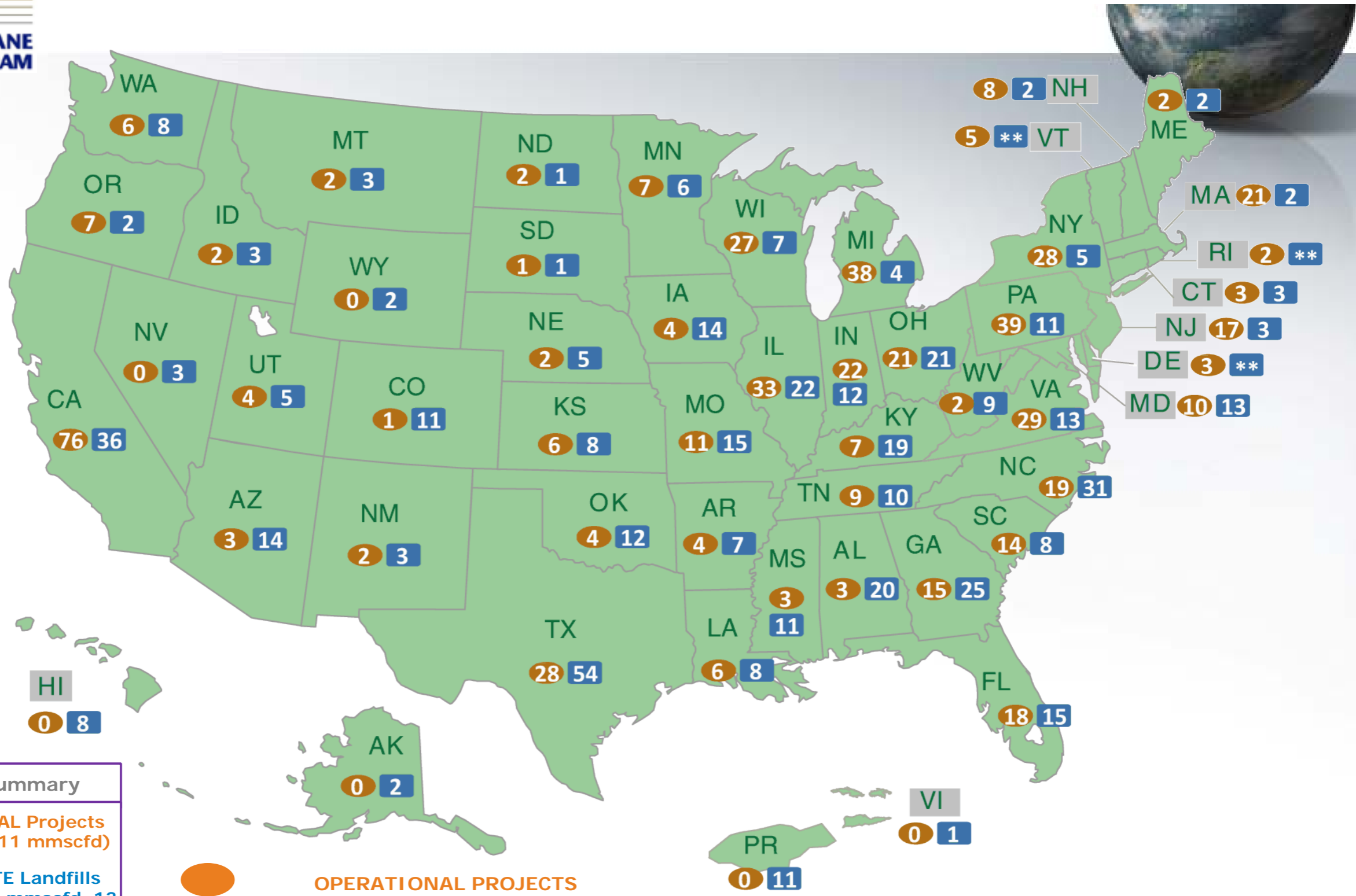
# US MSW and LFG Project Update



- **Status of MSW regulations**
  - No major updates
- **Status of LFG regulations**
  - Upcoming update to NSPS/Emission Guidelines being considered
  - Greenhouse gas reporting program – landfills one of 44 subparts being asked to report (85-90% U.S. GHG emissions covered)
- **Status of LFGE incentives**
  - Production Tax Credits for electricity generating projects
  - Renewable Portfolio Standard (RPS) – 37 states qualify LFG
  - American Recovery and Reinvestment Act Grants
  - Renewable Identification Number (RIN) credits for Renewable Fuel Standard
- **Status of LFGE projects (next page)**



# LFG Energy Projects and Candidate Landfills



**Nationwide Summary**  
 576 OPERATIONAL Projects  
 (1,763 MW and 311 mmscfd)  
 ~510 CANDIDATE Landfills  
 (1,155 MW or 590 mmscfd, 13 MMTCE Potential)

 OPERATIONAL PROJECTS  
 CANDIDATE LANDFILLS\*

\* Landfill is accepting waste or has been closed for 5 years or less, has at least 1 mmtons of waste, and does not have an operational/under construction LFG energy project; or is designated based on actual interest/planning.

\*\* LMOP does not have any information on candidate landfills in this state.

These data are from LMOP's database as of January 4, 2012.

# Greenhouse Gas Reporting Program



EPA Facility Level GHG Emissions Data - Mozilla Firefox

US EPA Facility Level GHG Emissions Data

ghgdata.epa.gov/ghgp/main.do

Greenhouse gas publication tool, epa

311 | 311 Online | Google Translate | Project Network Mem... | US EPA Greenhouse Gas Data... | US EPA International Analyse... | Salesforce.com - Cust... | Wells Fargo - Personal... | Fidelity Investments | iGoogle | Yahoo!

**EPA ghgdata** Refresh View 2010 Greenhouse Gas Emissions from Large Facilities Other Data Sources | Help

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United States Download

Facility or Location

View [Map] [Satellite] Choose State

GREENHOUSE GAS: All

Carbon Dioxide (CO<sub>2</sub>)  PFC-14  
 Nitrous Oxide (N<sub>2</sub>O)  PFC-116  
 Methane (CH<sub>4</sub>)  HFC-23

APPLY HIDE

EMISSION RANGE: 0 - 23,000,000 metric tons CO<sub>2</sub>e

0 23000000 APPLY HIDE

6192 Total Emitters Displayed

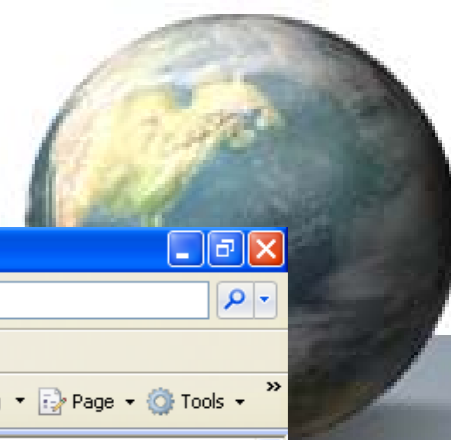
Facility Name/Location	2010 Emissions (metric tons CO <sub>2</sub> e)
121 REGIONAL DISPOSAL FACILITY MELISSA, TX, 75454	114,408
23rd and 3rd BROOKLYN, NY, 11232	82,955
29-6 #2 Central Delivery Point Blanco, NM, 87412	25,175
30-5 Central Delivery Point Compressor Station Aztec, NM, 87410	38,881
31-6 Central Delivery Point BLOOMFIELD, NM, 87413	63,881
32-7 Central Delivery Point BLANCO, NM, 87412	56,476
32-8 N02 CDP COMPRESSOR STATION BLANCO, NM, 87412	55,072
3M BROWNWOOD	36,877

Sector	2010 GHG Emissions (million metric tons CO <sub>2</sub> e)	# of Reporting Facilities
Power Plants	2,326	1,562
Refineries	183	145
Chemicals	172	548
Other Industrial	156	1,782
Landfills	107	1,202
Metals	100	269
Minerals	95	352
Pulp and Paper	47	228
Government and Commercial	14	172

This data set does not reflect total U.S. GHG emissions. Learn more about related EPA GHG data sources. Data reported to EPA as of 04/06/2012.

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# Landfill Data



EPA Facility Level GHG Emissions Data - Windows Internet Explorer provided by EPA

US EPA http://ghgdata.epa.gov/ghgp/main.do#/treeSector/?q=Facility%20or%20Location&st=8&fid=8&lowE=0&highE=23000000&g1=1&g2=1&g3=1&g4=1&g5=1&g6=1&g7=1&s1=0

File Edit View Favorites Tools Help

US EPA EPA Facility Level GHG Emissions Data

EPA ghgdata Refresh View 2010 Greenhouse Gas Emissions from Large Facilities

Other Data Sources Help

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Facility or Location

View Choose State

GREENHOUSE GAS: All

Carbon Dioxide (CO<sub>2</sub>)
  PFC-14  
 Nitrous Oxide (N<sub>2</sub>O)
  PFC-116  
 Methane (CH<sub>4</sub>)
  HFC-23

APPLY HIDE

EMISSION RANGE: 0 - 23,000,000 metric tons CO<sub>2</sub>e

0 23000000

APPLY HIDE

U.S. - Landfills - MSW Landfills - Direct GHG Emissions Reported by Sector in Million Metric Tons of CO<sub>2</sub>e

GHG Emissions (106)

Texas	Florida	Michigan	Alabama	Nebraska	Pennsylvania	Tennessee
12	7	5	3	3	3	3
California	Ohio	Illinois	Virginia	Louisiana	Mississippi	Missouri
8	6	4	3	2	2	2
Georgia	Indiana	Arkansas	New York	Wisconsin	North Carolina	South Carolina
5	4	2	2	2	4	2
North Carolina	Kentucky	Colorado	Oklahoma	Oregon	Puerto Rico	West Virginia
4	2	2	2	1	1	1

SELECT ALL  
DESELECT ALL  
APPLY

Sector	Power Plants	Refineries	Chemicals	Other Industrial	Landfills	Metals	Minerals	Pulp and Paper	Government and Commercial
2010 GHG Emissions (million metric tons CO <sub>2</sub> e)	---	---	---	---	107	---	---	---	---

Done

Unknown Zone (Mixed) 100%

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# **Status of Methane Action Plan**



- **DRAFT complete for MSW sector**
- **Currently undergoing intergovernmental agency consultation process (State, DOE, USAID, USDA)**
- **Will consolidate all sectors under USG Methane Action Plan – final by Methane Expo 2013**

# **NAMAs**



- **U.S. EPA participating in multiple MRV efforts (for example development of WRI GHG mitigation accounting protocol)**
- **Extensive experience in Climate Change Division with inventory development and projections and mitigation for non-CO<sub>2</sub> greenhouse gases**
- **Currently assessing NAMAs in multiple sectors through GMI**

# Summary of Waste Sector NAMA Development



- **Summary**
  - 6 waste sector related NAMAS
- **Status**
  - At very preliminary stage
- **Elements**
  - Policy and project NAMAs
  - Most do not contain MRV element, no financing
- **Needs, Barriers**
  - Typical to NAMA barriers in other sectors
  - Waste has additional “systemic” problems we are all familiar with – inconsistent data, multiple levels of government control, difficulties in collection, handling, insufficient markets for recovered materials, etc.,.



# Summary of Waste Sector NAMAs



Table 1 – Summary of Selected Waste Sector NAMAs

Name	Location	Scope	Targets	Type of NAMA <sup>1</sup>	Funding Support	Programme/Timetable	Partners/Donors	MRV Framework Activities
City wide mitigation programme of Greater Amman Municipality	Jordan	Emission reduction opportunities in municipal waste, urban transport, sustainable energy, and urban forestry	Emission reduction opportunities of ~560 ktCO <sub>2</sub> e per year (average across all sector involved)	Unilateral, supported NAMA	\$100k provided by the PPIAC – supporting market readiness, not the NAMA directly (2010) <sup>2</sup>	Implementation period: 2013 – 2016 Operation 2013 – 2030. To include financial assistance, technical assistance, and MRV development support	World Bank – Organisation providing technical support	No MRV plan has been defined
Biowaste Treatment from Agriculture, Food Production, Restaurants and Hotels, Sewage and Wood Waste.	Tunisia	Treatment of biowaste from most sources other than MSW. Direct measures include plants, studies, concepts, awareness and capacity building, training, norming and standardisation	-	Unilateral, supported NAMA	Financial Plan detailed with the Tunisian Feasibility Study. No details of specific funding received. <b>Error! Bookmark not defined.</b>	Studies, scientific research 2011-12 Programme implementation 2012-16	MEDD, National Agency of Waste Management (ANGED), ANME, GIZ, Ecofys, bifa environmental institute	Based on milestones linked to each measure – e.g. Studies: i) commissioned, ii) completed;  Awareness building: i) multipliers identified; ii) communications campaigns developed
Pilot Programme - Developing a Solid Waste Inventory and Identifying NAMA Options to Achieve Significant Emission Reductions	Peru	Two year pilot programme to investigate the potential for a waste sector NAMA. Aim to improve Peru's market readiness for supporting up-scaled mitigation action in the waste sector.	-	Supported (with unilateral elements)	Programme Budget = €2.2 million. Financed by the NEFCO and directly by the Nordic governments.	The Pilot Programme will have a tentative implementation period of two years (beginning mid-2012) and will be implemented with continuous support at the local level.	The Joint Nordic NOAK-NEFCO Partnership Initiative of the Nordic Group on Climate Change (NOAK) and the Nordic Environment Finance Corporation (NEFCO)	In development as part of the Pilot Programme

Name	Location	Scope	Targets	Type of NAMA <sup>3</sup>	Funding Support	Programme/Timetable	Partners/Donors	MRV Framework Activities
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<sup>1</sup> See section 3 for an explanation of unilateral, supported and credited NAMAs.

<sup>2</sup> The Public Private Infrastructure Advisory Committee <http://www.ppiac.org/sites/ppiac.org/files/documents/MENA-regional-updateMarch2011.pdf>

<sup>3</sup> See section 3 for an explanation of unilateral, supported and credited NAMAs.