NEWMOA's Climate-Waste Action Plan

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Overview

- Waste Management in the Northeast
- Development of the NEWMOA Climate – Waste Action Plan
- Climate-Waste Framework
- Key Strategies
- Moving Forward

Connecting Materials-Waste-Climate

NEWMOA's Programs -

- **Solid & hazardous waste management**
- **Waste site cleanup**
- **Pollution prevention & toxics reduction**
- **What do we know about GHG impacts?**

What's in Municipal Solid Waste (MSW)?

- Paper (33%)
- Yard Trimmings (13%)
- Food scraps (13%)
- Glass/metal/plastics/wood (each ~5-12%)
- Rubber, leather, textiles (~3% each)
- Miscellaneous wastes (~3%)
- ~2/3 of MSW organics (incl. paper, yard & food waste)

(Source: US EPA, 2007)

National MSW Picture

- 254 million tons
- 4.6 pounds per person/day
- 63 million tons recycled
- 22 million tons composted
- Recovery rate ~33%

(Source: US EPA, 2007)

MSW in the Northeast

- ~52 million tons of MSW generated in 2005
- ~36 million tons disposed in landfill or incineration
- NE disposal & recycling capacity is regional

(Source: NEWMOA – based on 2005 data)

MSW Recycling in the Northeast

- **20 – 42% state MSW recycling rates**
- **~16 million tons recycled 2005**

(Source: NEWMOA states)

- **Recycling rates vary among states**
  - **New England: ~29%**
  - **NJ: ~35.9%**
  - **NY: ~43%**

(Source: *Biocycle*)

- **Recycling rates increased in 1980-1990s; flat since 2000**

MSW Recycling in the Northeast

- Materials recycled:
  - glass
  - paper & cardboard
  - plastics
  - aluminum & steel cans
  - yard & food waste
- Room for improvement

C&D Waste in Northeast

- Wood, brick, concrete, asphalt pavement, glass, metal, drywall, asphalt shingles, & misc. waste
- Generation: >12 million tons
- States define & track materials differently
- Most waste is landfilled

(Source: NEWMOA, 2006 data)

C&D Waste Recycling

- ~10% recovered (not incl. asphalt, brick, & concrete)
- Metals recovery ~53%
- Disposal & recycling capacity: regional markets
- Significant potential to increase recycling

(Source: NEWMOA)

Industrial Waste

- **Non-hazardous industrial/commercial waste NE/year:~1.1 billion tons (e.g., paper, plastic, pallets, equipment, packaging)**
- **~2.19 million tons of hazardous waste generated in the Northeast in 2007**

(Source: US EPA)

Regional Perspective on Waste

Regional Waste Shed

- 74% of MSW generated in the region went to facilities in the region in 2006
- All NEWMOA states export MSW to at least one other NEWMOA state for disposal
- Regional cooperation on reducing generation & increasing recycling

(Source: NEWMOA)

Waste & Greenhouse Gases (GHG)

- **35 – 46% of GHGs can be attributed to the provision of good & materials (Source: US EPA)**
- **Activities that contribute to GHG emissions:**
  - **raw material extraction**
  - **transportation**
  - **processing & manufacturing**
  - **shipping of goods**

Embodied Energy

- "Embodied energy" - the amount of energy required to manufacture & supply to the point of use a product, materials, or service
- Need to estimate "embodied energy" for materials & products

Waste & GHG Reductions

Lost energy from discarding aluminum & steel cans, plastics, glass containers, newsprint, & corrugated cardboard packaging:

- **Amount of energy consumed by 10 million people/year**
- **Amount of gasoline used in 6.5 million passenger cars/year**

(Source: National Recycling Coalition)

Reduction/Recycling Opportunities & Climate Benefits

10-15% increase in the recycling of cans, bottles, newsprint, & corrugated cardboard packaging:

- **3.9 – 19.3 fewer megatons of waste to landfills**
- **11.6 – 58 fewer megatons of GHG emissions to the atmosphere**
- **Significant energy & $$ savings**

(Source: National Recycling Coalition)

Organics & GHG Emissions

- Gas created when organics are landfilled; ½ gas is methane
- Methane: potent greenhouse gas, 21 – 72 times greater than CO_2
- MSW landfills – second largest source of methane; 23% in 2006
- Methane gas is captured at many landfills

(Source: US EPA)

Composting Organics

- Methane gas is released at landfills (even w/capture systems)
- Some sites flare methane
- Some organics have negative fuel value in incinerators
- Composting, anaerobic digestion, or onsite conversion to methane for direct energy use avoid much of the methane emissions

Toxics & WSC

- Less is know about the GHG impacts associated with toxics & hazardous waste – not been a focus
- Starting to examine GHG impacts at contaminated sites & examine impacts of cleanup strategies/options

NEWMOA-Member State Solid Waste & Climate Action Plans

Highlights-

- **Source reduction top of hierarchy**
- **Targeted recycling rates 40 – 58%**
- **Common priorities: organics, C&D, MSW, e-waste**
- **Climate Action plans for CT, ME, NH, NJ, RI, & VT include SW strategies**
- **Climate actions in NY & MA in draft SW plans**

Why Prepare a Regional Climate – Waste Plan?

- 2007 request from New England Governors' Conference Environment Committee: How will the NE interstates' programs help achieve regional climate change goals?
- Addressing climate change is the Environmental Commissioners' highest priority

NEWMOA - Background

- NE states have a long history of working regionally
- Northeast Waste Management Officials' Association:
  - hazardous & solid waste
  - pollution prevention & toxics
  - waste site cleanup
- Members: CT, ME, MA, NH, NJ, NY, RI, VT

Background Research

- **Researched:**
  - **NE waste generation & management**
  - **Connection of materials, waste management, & GHG emissions**
  - **Benefits of strategies for reducing GHGs**
  - **State SW & Climate Action Plans**
- **Interviewed key state contacts, researchers, & others**

NEWMOA Planning Steps

- Created guiding principles
- Identified P2 & waste management strategies
- Identified opportunities for regional collaboration
- Prepared draft Action Plan
- Sent draft of Plan to State Commissioners for comment

Status

- Plan approved by state environmental commissioners
- Posted on NEWMOA's Website - www.newmoa.org/publications/NEWMOAClimate-WasteActionPlan.pdf
- Current effort: NEWMOA Directors identifying & implementing priorities

Guiding Principles

- Interstate collaboration is necessary
- Focus on products/materials with biggest climate impacts (based on full life cycle)
- Minimize energy consumption & GHGs from waste

Guiding Principles

- Avoid unintended consequences
- Seize opportunities for renewable energy development & use
- Consider waste management in climate change adaptation plans

Strategies

- Minimize life cycle GHG impacts of products & waste
- Increase waste reuse & recycling
- Reduce methane emissions from landfills
- Increase public awareness

Strategies

- Improve data on the climate-waste connection
- Facilitate renewable energy development on waste sites
- Promote “green” cleanups of hazardous waste sites
- Improve planning for disaster debris management

Near Term Priorities

- Initiating regional strategy to increase commercial paper recycling (based on potential for GHG reductions)
- Planning regional paper recycling summit
- Holding & promoting webinars on organics composting

Near Term Priorities

- Developing regional strategy for expanding diversion of C&D materials
- Holding webinars on carbon foot print of products & waste
- Developing clearinghouse on materials – climate research & information using Web 2.0 tool

Near Term Priorities

- Coordinating w/EPA Regions 1 & 2
- Developing fact sheet & messaging strategy on Climate-Waste connection in the Region
- Advancing ability to quantify GHG impacts of climate – waste actions; connect with states' GHG inventory?

Challenges

- Waste & materials are undervalued as a source of GHG emissions in traditional inventories & state climate change initiatives
- State climate plans do not credit GHG benefits occurring out-of-state
- Little funding available to support climate-waste action
- Recognition from senior management

Next Steps for NEWMOA

- Seeking funding for priorities
- Collaborating with EPA, recyclers, local government, & others
- NEWMOA's Board & Workgroups implementing near term priorities
- Seeking opportunities to connect w/state Commissioners

Information Sources

- **NEWMOA - www.newmoa.org**
- **Northeast Recycling Council - www.nerc.org**
- **EPA - www.epa.gov/osw/nonhaz/municipal**
- **National Recycling Coalition – www.nrc-recycle.org**
- ***BioCycle* - www.jgpress.com/archives/_free/000848.html**
- **Grassroots Recycling Network - www.grrn.org**
- **Product Stewardship Institute - www.productstewardship.us**

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