

# NEWMOA's Climate-Waste Action Plan

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## Overview

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

## 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)

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## 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)

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## 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)

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## 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

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## MSW Recycling in the Northeast

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

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## 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)

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## 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)

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## 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)

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## Regional Perspective on Waste

### Regional Waste Shed

- 74% of waste 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)

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## 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

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## 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

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## 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)

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## 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)

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## Organics & GHG Emissions

- Gas created when organics are landfilled; ½ gas is methane
- Methane: potent greenhouse gas, 21 - 72 times greater than CO<sub>2</sub>
- MSW landfills - second largest source of methane; 23% in 2006
- Methane gas is captured at many landfills

(Source: US EPA)

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## 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

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## NEWMOA 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

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## 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

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## 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

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## Background Research

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

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## NEWMOA Planning Steps

- Created guiding principles
- Identified waste management strategies with significant co-benefits for GHG reductions
- Identified opportunities for regional collaboration
- Prepared Action Plan
- Sent draft of Plan to State Commissioners for comment

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## Status

- Plan approved by state environmental commissioners
- Posted on NEWMOA's Website - [www.newmoa.org/publications/NEWMOAClimate-WasteActionPlan.pdf](http://www.newmoa.org/publications/NEWMOAClimate-WasteActionPlan.pdf)
- Current effort: NEWMOA Directors identifying initial priorities

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## 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

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## Guiding Principles

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

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## Strategies

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

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## 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

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## Near Term Priorities

- Identify solid waste priorities for regional initiative based on potential for GHG impacts - commercial paper
- Develop training on carbon foot print of products & waste
- Develop regional strategy for expanding diversion of C&D materials

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## Near Term Priorities

- Assist states in advancing organics composting / anaerobic digestion
- Develop public information on Climate-Waste connection
- Advance citing renewable energy on waste sites

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## 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
- Need increased recognition & support from senior management

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## Next Steps for NEWMOA

- Seeking funding for priorities
- Collaborating with EPA, NGO's, local government, & others
- Organizing webinars & other training
- Working with NEWMOA Board & Workgroups to clarify priorities
- Seeking opportunities to connect w/state Commissioners

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## Information Sources

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

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[NEWMOAClimate-WasteActionPlan.pdf](http://www.newmoa.org/publications/NEWMOAClimate-WasteActionPlan.pdf)

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