

Energy & Materials

Carbon, Our Energy Future & You: A Community Workshop

Background

Emissions from landfills include methane (CH₄), a greenhouse gas that remains in the atmosphere for approximately 9-15 years. Methane is over 20 times more effective in trapping heat in the atmosphere than carbon dioxide (CO₂). Municipal solid waste (MSW) landfills are the second-largest source of human-related methane emissions in the United States. Methane emissions from landfills represent a lost opportunity to capture and use a significant energy resource.

Embodied energy describes how much energy is used to create the products we use - and then discard - every day. For every ton of municipal trash, approximately 71 tons of waste are produced during the process of manufacturing the product: mining raw materials, oil and gas exploration, coal combustion, etc. Waste reduction presents opportunities to reduce emissions at every stage of a product's life cycle.

Zero waste is a design principle that goes beyond recycling to focus first on reducing wastes and reusing products and then recycling and composting the rest. These principles recognize that "one man's trash is another man's treasure" - everything is a resource for something or someone else. Businesses that have integrated zero waste principles into their operations are leading the way, diverting over 90% of their wastes from landfills and incinerators.

Deconstruction - as opposed to demolition - of abandoned buildings can revitalize our cities by reducing waste, creating green jobs and providing high-quality recycled materials for new construction.

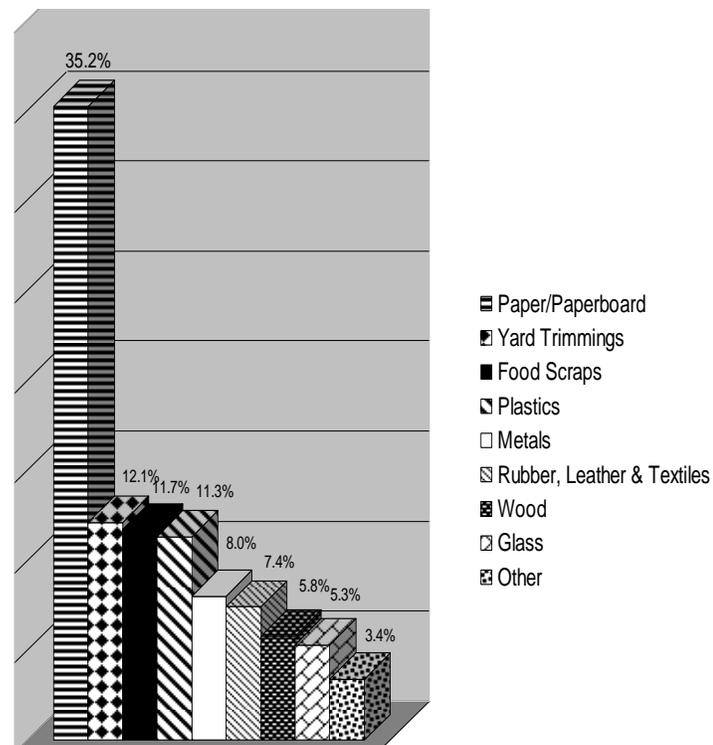
Facts

Significantly decreasing waste disposed in landfills and incinerators can reduce GHG emissions equivalent to closing 21% of U.S. coal-fired power plants. This result is comparable in significance to key emission reduction proposals such as improving vehicle fuel efficiency.

In 2005, an estimated 144 billion beverage containers were landfilled, incinerated or littered in the United States, approximately two out of every three containers sold. This amounts to roughly 54 billion aluminum cans, 52 billion plastic bottles and jugs, 30 billion glass bottles, and about 10 billion pouches, cartons, and drink boxes.

2003 Materials Generated in MSW by Weight

Source: U.S. EPA, "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2003"



An estimated 250,000 single-family houses are demolished each year. Another 100,000 commercial buildings are taken down. Construction debris typically comprises 25-30% of a community's wastestream but options for significant diversion are increasingly available.

Waste reduction can significantly reduce GHG emissions. Each individual action - from double-sided printing to recycling a soda can to responsible building waste management- contributes to real GHG reductions. The chart below shows cumulative results of reusing or recycling everyday materials.

Preventing generation of 500 tons of...	Is approximately equivalent to removing this many cars from the road for one year:
Paper	307 cars
Aluminum	952 cars
Glass	52 cars
HDPE (plastic for milk jugs, plastic lumber)	186 cars
Corrugated cardboard	196 cars
Recycling 500 tons of...	Is approximately equivalent to removing this many cars from the road for one year:
Paper	259 cars
Aluminum	1,569 cars
Glass	29 cars
HDPE (plastic for milk jugs, plastic lumber)	147 cars
Corrugated cardboard	270 cars

Mitigation Strategies

- Promote and Pursue Zero Waste Principles of Waste Reduction and Minimization
- Consider Environmental Impacts of Purchasing Decisions; Preference Local Procurement
- Reuse and/or Repurpose Existing Buildings

Tips and More Information

Buying Green: A Guide to Environmentally Preferential Procurement for Offices within the TJPDC:
<http://www.tjpd.org/pdf/Environment/buyinggreen.pdf>

Businesses can do a waste assessment and improve the overall efficiency of their operations:
http://www.cityofaustin.org/sws/downloads/wrap_preassess_tips.pdf

For information about where to recycle or donate just about everything, check out Better World Betty searchable database: <http://www.betterworldbetty.org/searchlaunchpad.php>

For tips and instructions on composting: <http://www.charlottesville.org/agreencity>

Do Something Beautiful. Keep America Beautiful's program to encourage waste reduction and recycling:
http://www.kab.org/site/PageServer?pagename=Focus_Waste_reduction

To find fresh, local food sources: <http://www.buylocalvirginia.org/>