

Waste Impacts Climate Change

- Wasting directly impacts climate change because it is directly linked to resource extraction, transportation, processing and manufacturing, all of which use energy and generate emissions. Two recent reports examined the greenhouse gas impacts of products and packaging, the first from EPA found 37% of GHGs associated with non-food products and packaging. The second report was a follow-up and included global trade, although food was still not included; it found 44% of GHGs associated with products and packaging. (Both reports available at www.productpolicy.org)
- For every bag of trash a household puts at the curb, 70 bags of trash were created upstream in the production process.
- Zero waste strategies--waste reduction, reuse, recycling, and composting-- are the fastest, cheapest and most effective strategies to protect the climate and the environment. All are associated with greenhouse gas reductions, in addition to many other benefits.
- Using zero waste strategies and significantly decreasing disposal in landfills and incinerators can reduce GHGs the equivalent of closing 1/5 of all US coal-fired power plants. (See www.stoptrashingthecollege.org for this excellent report.)
- Waste reduction and material recovery strategies are ESSENTIAL to putting us on a path to stabilize the climate by 2050. Greenhouse gas reductions of 80% are needed and we cannot accomplish this goal without adequately addressing waste.
- Waste incineration and other thermal technologies* do not produce clean, renewable energy. It relies on destroying precious resources, is environmentally polluting and puts out 36% more CO₂ than coal-fired power plants. Recycling is renewable energy saving 4-5 times more energy than an incinerator recovers.
- Biodegradable materials like food and yard waste degrade in landfills and produce methane, a powerful greenhouse gas with 72 times the global warming potential of CO₂ over a twenty year period. Adequate control of greenhouse gases is even more essential over the next twenty years, because of the possibility of a runaway situation for warming.
- Landfills even ones with good gas capture systems are able to collect only about 20% of the methane that is generated. (PCC 4th Assessment, Working Group III, Mitigation of Climate Change, 10.4.2.)
- Composting of biodegradable material results in a valuable product that improves soil-- increasing nutrients, water retention, and healthy plant growth while reducing plant diseases and the need for synthetic fertilizers. Increasing soil carbon is an added climate change benefit.



*Newer thermal technologies include gasification, pyrolysis, plasma arc and other creative descriptions. All are commercially unproven for mixed waste, but their claims sound wonderful.

Greenhouse gas emissions inventories often inappropriately deal with the issue of Biogenic Emissions.

Biogenic emissions are considered natural emissions from the carbon cycle. However burning waste should not be considered renewable because it relies on the destruction of resources rather than preservation. Often inventories do not count the biogenic emissions (CO₂ emissions generated by burning paper, wood, food and yard waste) from incinerators. This could arise from a misunderstanding of IPCC guidance. The IPCC states, "If incineration of waste is used for energy purposes, both fossil and biogenic CO₂ emissions should be estimated."

- All incinerators and thermal technologies use fossil fuel to operate, but this is often not quantified.
- What is burned is not just unprocessed biogenic material, but material that has had large energy inputs in the processing to a finished product. Incineration does not recover this embodied energy, but recycling does.
- Green organic materials have high water content and thermal treatments are using energy largely to remove water.
- There are higher and better uses for all materials to be burned in an incinerator and any alternative processing costs for composting and recycling are always less than thermal treatment.
- Raw material resources are destroyed in thermal treatment. To get more paper, cardboard, etc. you have to cut down more trees. As EPA states, "forest carbon sequestration increases as a result of source reduction or recycling of paper products because both source reduction and recycling cause annual tree harvests to drop below otherwise anticipated levels (resulting in additional accumulation of carbon in forests)." *Solid Waste Management and Greenhouse Gases*, 2006 EPA Report.



EPA assumes landfills reach 75% gas collection efficiency. In reality:

- Landfills are not properly enclosed with an impermeable cap until they are closed.
- The majority of a landfill's operating life (62%) occurs before this impermeable cap and LFG collection system are installed.
- EPA has no factual basis upon which it settled on 75% collection efficiency; it represents wishful thinking.
- There are no field measurements of efficiency of landfill gas collection systems.
- The best evidence of lifetime capture rates are closer to 20%. (IPCC 4th Assessment, Working Group III, Mitigation of Climate Change, 10.4.2.)
- Significant carbon sequestration in landfills is thus highly questionable.

ZERO WASTE STRATEGIES can significantly reduce disposal and greenhouse gas emissions. ZW strategies provide cost savings, while also creating jobs and economic development. ZW strategies are good for New York and good for our climate.

For 2004, New York recycling reduced greenhouse gas emissions by 5,212,571 metric tons of carbon equivalents (MTCE) in a one year period. New York's recycling saved a total of 230,964,227 Million BTUs of energy. Recycling 811,057 tons of newspapers, phone books, office paper, textbooks, magazines and cardboard in 2004, New York resulting in forest carbon sequestration benefits equal to 54,885,090 tree seedlings grown for 10 years. (Northeast Recycling Council, NY 2004 fact sheet.)

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