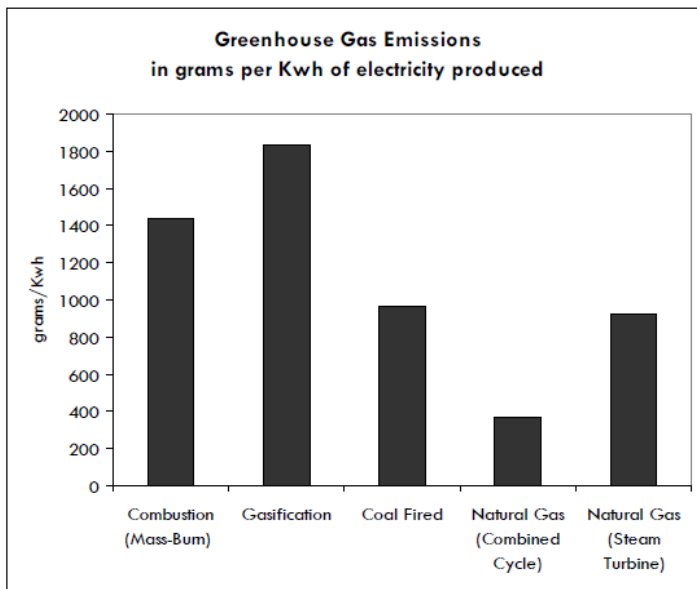


## THE PUBLIC HEALTH & ENVIRONMENTAL IMPACTS OF INCINERATORS

### THE PROBLEM

- Incinerators, sometimes called “waste-to-energy” facilities, have significant environmental, health and financial impacts on the communities and their residents where they are sited.
- **The EPA has found that incineration produces the most CO<sub>2</sub> per kilowatt hour of any other form of power generation**, thus adding significantly to climate change. Compared to coal fired technology, combustion or “mass-burn” technology contributes about 33% more GHGs, and gasification emits 90% more GHG emissions per kwh of electricity produced



- **Incineration does not solve the problem of waste.** It is typically asserted that incinerators reduce waste volume by 70% to 90%. But waste is not simply dumped into a landfill; it is compressed. When raw garbage is compacted at a landfill the volume is reduced by about 70%. So an incinerator provides, at best, only about 20% additional savings in landfill space.
- **Incinerators create a new waste disposal problem in the form of toxic ash.** It only reduces waste to approximately 30% of the original compressed waste mass. The remainder is converted into an ash that contains some of the most toxic concentrations of substances, such as dioxins and heavy metals. Thus, instead of eliminating the need for a landfill, they create the need for a landfill with hazardous ash.
- In fact, incinerators need more landfill space than regular landfill disposal, due to distances needed in between ashfill cells (specially designed to contain the hazardous waste).
- **Incinerators waste energy.** The amount of energy produced by “waste to energy” facilities is considerably less than the amount saved by recycling. Manufactured products that are used as fuel for an incinerator take a lot of energy to make. If they are recycled instead of burned, they save much, much more energy than is produced by an incinerator. Burning usable resources to make a meager amount of electricity is like burning your furniture to heat your house.
- **Incinerators represent a serious health threat to the surrounding area.** Incinerators release particulate matter (PM), a complex mixture of organic and inorganic particles that can be solid, liquid or both, suspended in the air. PM has been found to increase the risk of respiratory death in infants under 1 year, affect the rate of lung function development, aggravates asthma and causes other respiratory symptoms such as cough and bronchitis in children; and increase death rates from cardiovascular and respiratory diseases and lung cancer.

**While there have been no new incinerators built in the United States since 1990**, there are currently 3 new incinerator projects in various planning, permitting and regulatory stages in Baltimore City, Frederick/ Carroll & Harford County.

<b>Pollutants Found in Incinerator Air Emissions</b>	
<b>Pollutant</b>	<b>Health Hazard</b>
Nitrogen Oxides	Respiratory effects
Sulphur Oxides	Respiratory effects
Particulates/PM10s	Respiratory effects, no known safe threshold
Dioxins	Class 1 Carcinogen. Affects development and reproduction; Highly toxic.
PAHs	Some are carcinogens
PCBs	Properties similar to dioxins
Carbon Monoxide	Reduces oxygen in the blood
Hydrogen Chloride	Acid, irritant to tissue including respiratory tract
Hydrogen Fluoride	Irritant, affects bone formation
Cadmium	Class 1 Carcinogen
Chromium VI	Class 1 Carcinogen
Thallium	May affect several organs and nervous system
Mercury	Kidney Function
Arsenic	Class 1 Carcinogen
Cobald	Class 2B Carcinogen
Lead	Class 2B Carcinogen
Manganese	Neurological effects
Nickel	Class 1 Carcinogen
Vanadium	Respiratory effects
Antimony	A number of effects, including respiratory

### **OTHER OPTIONS**

Other options exist beyond incineration and the use of land-fills.

- Reduction Planning:** Researchers estimate that 70 percent of all current waste and emissions from industrial processes can be prevented at source by using technically sound and economically profitable procedures. The state of New Jersey mandates pollution prevention planning based on full materials tracking throughout each industry covered by the state regulation. The total net savings to companies as a result of pollution prevention techniques amounts to \$105 million dollars per year.
- Recycling and Composting:** An analysis of recycling potential including composting found that 72.8 percent of waste reclamation was possible. Recycling facilities alone produce more than twice the number of jobs provided by landfills and incinerators combined. Recycling is also profitable. A ban on incinerators, legislated in 1992 in the province of Ontario, Canada, stimulated both job creation and the price of secondary materials. Within two years the recycling industry had benefited from price increases of 163% for aluminum cans, 25% for PET bottles, 350% for cardboard, 210% for fine paper, 500% for HDPE, and 350% for newspapers.
- Other Technologies:** Other safer and cleaner methods exist. 45% of medical waste can be sterilized and reused through autoclaving, and the remaining materials can be treated and reduced through microwave disinfection and superheated steam sterilization. Biomass and municipal/household waste can be handled through thermal desorption and vitrification.