

Gasification, Pyrolysis & Plasma Incineration

What are garbage gasification, pyrolysis, and plasma waste treatment technologies?

Gasification, pyrolysis and plasma disposal technologies heat garbage or plastics to high temperatures, creating gas, solid and liquid residues. The gases are combusted, releasing hazardous pollutants. These technologies are considered “incineration” by the European Union, and are being considered in the U.S. for medical and municipal waste streams, which could reverse decades of progress in pollution prevention, waste prevention, recycling and composting.

Releasing Toxics: The same toxic byproducts can be released from these incinerators as from other incinerators, including dioxins and furans, mercury and other heavy metals, particulate matter, carbon monoxide, hydrogen chloride, sulfur dioxide, and more, as well as toxic contaminants in the char or ash residues, and contaminated waste water. Many of these pollutants are carcinogenic and threaten public health even at very low levels. Recent tests from municipal solid waste (MSW) in a test pyrolysis facility in southern California found more dioxin, VOCs, NO_x, and particulate emissions than existing mass burn incinerators in the region.

Read case studies of gasification, pyrolysis and plasma incineration that illustrate concerns about emissions, energy and expense at
www.no-burn.org
www.greenaction.org

Some vendors claim their technologies are “pollution free” or have “zero emissions,” but these claims have been shown repeatedly to be untrue. Since 2003 numerous proposals for waste treatment facilities hoping to use plasma arc, pyrolysis, catalytic cracking and gasification technologies failed to receive final approval to operate when the claims of project proponents did not withstand public and governmental scrutiny of key claims.

Wasting Energy: These technologies require a great deal of energy to operate, and some facilities have consumed more energy to operate than could be produced. Like classic incinerators and landfills, energy savings from waste prevention and recycling is likely greater than the energy produced in these disposal facilities.

Wasting Money: The financial and technical feasibility of these incinerators is questionable. The largest MSW gasification facility in the world (located in Germany) recently closed after only a few years of operation, and losses of \$500 million. The only medical waste incinerator in the U.S., in Hawaii, has had serious repeated operational problems as well as permit violations.

The Big Picture: Even if gasification, pyrolysis, and plasma arc could be made safe, the question remains: could they be made sensible? As with incineration and landfilling, these approaches lead to exploiting more natural resources, rather than resource and energy conservation. Strategic procurement is the most effective way to prevent pollution and waste.

Incineration is disposal to air

Although the volume of garbage appears to be greatly reduced by gasification and incineration, no technology can make anything actually disappear. Mass can neither be created nor destroyed, only changed.* *The gas, smoke, and liquid and solid wastes that leave a facility will have the same mass as the solid materials entering the facility.* Masses of gas and particulates will go up the stack, toxic ashes and solid wastes will need to go to landfill, and liquid wastes will also need to be managed.

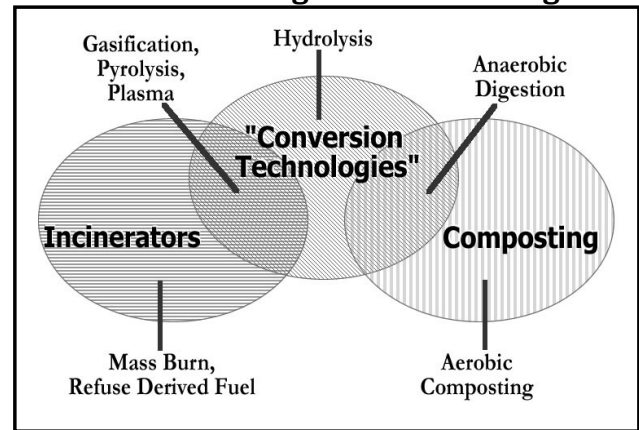
*Encyclopedia Britannica, www.britannica.com/eb/article?tocId=49377

California scheming

California is the proposed staging ground for the attempted U.S. incinerator industry revival. Many local governments are currently considering some form of waste incineration, and the same technologies have already been rejected in a number of California cities.

California calls these technologies – and others that claim to produce energy from garbage – "conversion technologies". Unfortunately anaerobic digestion of source-separated organics, a form of composting, is lumped in the same category. This "conversion technology" term is only used in California, while other jurisdictions like the European Union consider gasification, pyrolysis, and plasma to be incineration.

Orwellian language: California's "Conversion Technologies" is a misleading term



This industry wants California to consider incinerator approaches like gasification equal to discard reduction, recycling and composting by saying they will "divert" garbage from disposal in landfills. But no technology can make anything disappear. These approaches dispose garbage to the great landfill-in-the-sky and actually create new poisons. The industry even attempts to package garbage as "renewable energy", but waste prevention, recycling and composting actually *save* energy.

ZERO WASTE

Escape the "bury or burn" trap. Please join us in moving towards Zero Waste.

Through implementing zero waste practices both upstream (including reducing consumption, product redesign, clean industrial production and processes, reducing packaging waste, encouraging refillable containers, and toxics use reduction) and downstream (including reuse, composting, recycling, and materials recovery), many countries, cities and businesses are making significant progress towards zero waste.

Proven approaches that work: prevent waste and increase recycling and composting

- Zero Waste *creates jobs* and is good for the economy. For example, U.S. recycling and reuse establishments employ 1.1 million people and gross \$236 billion in annual revenues. Designing more recyclable, reusable and repairable products means more jobs for a vital industry.
- Zero Waste *saves natural resources* by reducing consumption and making new items from recycled materials. Ruining materials through thermal and combustion processes means more materials need to be extracted from the earth to replace those resources.
- Zero Waste *saves energy* through reducing demand for extraction of raw materials, which is energy intensive.

For more information about zero waste approaches:

GrassRoots Recycling Network, www.grrn.org
Institute for Local Self-Reliance, www.ilsr.org
Clean Production Action, www.cleanproduction.org
Eco-Cycle, www.ecocycle.org