**Energy Recovery from the Combustion of Municipal Solid Waste (MSW)**

Energy recovery from waste is the conversion of non-recyclable waste materials into usable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolization, anaerobic digestion and landfill gas recovery. This process is often called waste to energy.

**Energy Recovery from Combustion**

Energy recovery from the combustion of municipal solid waste is a key part of the [non-hazardous waste management hierarchy](https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy), which ranks various management strategies from most to least environmentally preferred. Energy recovery ranks below source reduction and recycling/reuse but above treatment and disposal. Confined and controlled burning, known as combustion, can not only decrease the volume of solid waste destined for landfills, but can also recover energy from the waste burning process. This generates a renewable energy source and reduces carbon emissions by offsetting the need for energy from fossil sources and reduces methane generation from landfills.

**The Mass Burn Process**

At an MSW combustion facility, MSW is unloaded from collection trucks and placed in a trash storage bunker. An overhead crane sorts the waste and then lifts it into a combustion chamber to be burned. The heat released from burning converts water to steam, which is then sent to a turbine generator to produce electricity.

The remaining ash is collected and taken to a landfill where a high-efficiency baghouse filtering system captures particulates. As the gas stream travels through these filters, more than 99 percent of particulate matter is removed. Captured fly ash particles fall into hoppers (funnel-shaped receptacles) and are transported by an enclosed conveyor system to the ash discharger. They are then wetted to prevent dust and mixed with the bottom ash from the grate. The facility transports the ash residue to an enclosed building where it is loaded into covered, leak-proof trucks and taken to a landfill designed to protect against groundwater contamination. Ash residue from the furnace can be processed for removal of recyclable scrap metals.

(275 mots)

<https://www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw>