

## What is Municipal Solid Waste (MSW)?

Municipal Solid Waste, also known as MSW, is **any household or domestic waste comprised of everyday items** such as product packaging, furniture, paper, clothing, bottles, yard waste, food scraps, newspapers, appliances and other organic and non-organic material. MSW does not typically include medical, commercial, industrial, hazardous or radioactive wastes. Although much of the MSW in the U.S. and around the world is transported to and buried in landfills, it can be used as a renewable fuel source for electric power generation.

## What is Gasification?

Gasification is **a process that converts solid organic components of municipal solid waste into a synthetic gas ( syngas )**. The syngas is similar to natural gas.

### GASIFIER



## What will the proposed Cleveland Municipal Solid Waste to Energy (MSWE) Facility do?

The MSWE Facility will process MSW to generate electricity. It will also produce additional marketable by-products such as recyclables, refuse derived fuel (RDF) pellets, and steam.

## GASIFICATION SYSTEMS ARE USED IN RESIDENTIAL AREAS IN JAPAN:



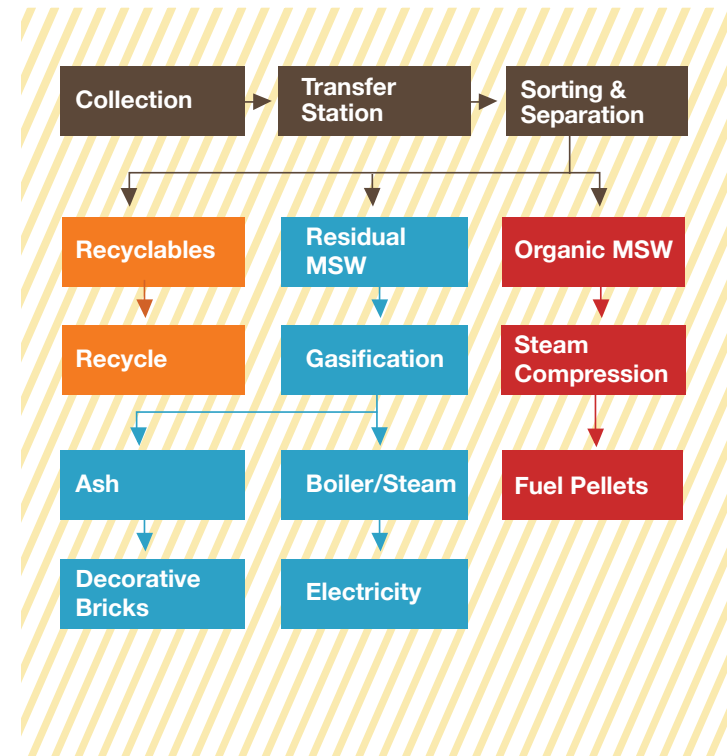
## What is syngas?

Syngas is a **high energy fuel that can be used in a steam boiler or in an internal combustion engine to generate electric power**. It is a mixture of gases produced by the gasification of organic material. The composition of the syngas can be modified by manipulation of gasification parameters and/or the waste feedstock.

## How will the MSWE Facility ensure the emissions from solid waste gasification will not be harmful?

Gaseous emissions from a solid waste gasification, electric power, and heat conversion **plant must meet the requirements and approval of the United States Environmental Protection Agency (USEPA)** on an ongoing basis. Cleveland's MSWE Facility will meet these requirements.

## CLEVELAND'S FACILITY DESIGN BLOCK DIAGRAM:



## Will all the MSW at the Cleveland facility be gasified to generate electric power?

No, **around 40% of the MSW will be gasified.** Municipal Solid Waste is first processed through a Materials Recovery Facility (MRF). The MRF contains equipment that sorts out recyclables such as paper, plastics, metals and glass from the waste stream. The remaining organics in the waste are processed through gasification for power and heat generation. Less than 5% of the municipal solid waste is eventually sent to a landfill. Cleveland's ultimate goal is to operate a facility with no waste going to landfills.



## Cleveland's Advanced Energy Portfolio:

**Cleveland Public Power** will produce and/or purchase generation from Advanced Energy Sources to meet the following goals and time:

AEP	Target Year
15%	2015
20%	2020
25%	2025

**MSWE is an Advanced Energy Source.**



CITY OF CLEVELAND  
Mayor Frank G. Jackson



COUNCILMAN  
MATT ZONE

CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF WASTE COLLECTION



ClevelandPublicPower  
Count on it

# MSWE

## Municipal Solid Waste to Energy

## Proposed Municipal Solid Waste to Energy Facility:

The **MSWE Facility** will process municipal solid waste to **generate electricity.**

It will also produce additional marketable by-products such as recyclables and **refuse derived fuel (RDF) pellets.**

# MSWE

## Municipal Solid Waste to Energy



# FAQ

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