



Urban waste worldwide is expected to touch 2.2 billion tonnes per year.

The science of WTE

Several technology solutions are available but the right technology that will work best starts right from the source – TRASH! MSW is the trash from households, shops and establishments, commercial outlets etc. The composition and characteristics (moisture content and calorific value) determines the WTE technology or any waste treatment process. Waste can be organic (food waste, etc.) and waste that can be burned (paper, plastic, leather, textile, etc.); waste that cannot be burned such as inerts, glass, metals, etc. Based on these parameters, a combination of technologies can be adopted for WTE.

WTE – Waste to Energy

Waste to energy is the technology-based processing of waste for generating energy in the form of electricity/heat/bio-fuel. The full suite of WTE technologies include thermal processes like mass burn incineration and gasification & non-thermal processes like anaerobic digestion and landfill-gas

recovery. The technologies used for WTE are:

- **Thermal Technologies** – Direct Combustion (Mass Burn and RDF-MSW-segregated or otherwise is burned and the heat generated is used to produce) steam or electricity.
- **Pyrolysis** – This is a form of gasification that occurs at relatively low temperatures of 300-600 degrees centigrade in the absence of oxygen.
- **Conventional Gasification** – This is a process that converts any material containing carbon such as coal, biomass or MSW into syngas. In the controlled presence of oxygen, temperatures of 480-1650 degrees centigrade break the feedstock molecules apart and recombine them into syngas.
- **Plasma Arc Gasification** – This method uses a plasma torch to provide supplemental heat for the gasification process wherein temperatures can reach 2760 - 11,000 degrees centigrade.