

**Great Forest Guide:
New and Emerging Food Waste Recycling Technologies and Opportunities for Application**

A number of technologies are presently emerging and/or establishing themselves economically and environmentally as viable alternatives to the current practice of landfilling wasted food. These technologies cater to the whole spectrum of food waste management opportunities, from small commercial establishments up to municipal sized operations. Here is a brief summary. Call your Great Forest representative to learn more, or visit www.greatforest.com

BIOLOGICAL DIGESTION

Anaerobic Digestion	How it works	Materials Accepted
Wet/Dry Anaerobic Digestion	Controlled decomposition of organic materials by microbes in the absence of oxygen, generating fertilizer solids, water and biogas.	All organic materials, including paper and compostable bagging, except woody organics
Thermal Hydrolysis	A two-stage process involving high-pressure boiling of waste followed by rapid decompression. The waste sludge is then digested anaerobically by bacteria, producing high yields of biogas.	All types of organic and food waste, including animal carcasses. Not suitable for plastic products.
Aerobic Digestion		
Food Waste to Water	Food waste is broken down aerobically by natural organic bacteria, producing nutrient-neutral grey water, which is disposed of through the sewer.	Only food waste, not compostable bags. Food exclusions include: large bones, mussel and clamshells, pineapple tops, cornhusks and raw bread dough.
Food Waste to 'Compost' (solids)	Food waste is broken down aerobically by natural organic bacteria, producing a nutrient rich organic solid that can be composted to produce fertilizer.	Only food waste, including compostable bags. Food exclusions include: large bones, mussel and clamshells, pineapple tops, cornhusks and raw bread dough

NON-BIOLOGICAL VOLUME/WEIGHT REDUCTION (MECHANICAL PROCESSING)

	How It Works	Materials Accepted
Food Waste Pulpers and Shredders	Mechanical blades grind or shred the waste in the presence of water to create a pulp, which is then pressed to remove the majority of the water content.	All food waste, no compostable bags. Additionally, paper, tinfoil, cardboard and plastic products such as flatware and Styrofoam can also be added
Food Waste Dehydration	The food waste is added to the machine, which applies heat and agitation to evaporate the moisture out. The moisture is then collected and disposed of via the sewer and the remaining dried pulp is removed and disposed of.	Can process all food waste products, (although with minimal effectiveness of animal bones), and additionally soiled paper, waxed cardboard and napkins.

THERMAL PROCESSING

	How It Works	Materials Accepted
Waste to Energy Incineration	Combustion of MSW and capture of residual heat to generate electricity and heat via steam boilers.	All food types and bagging (all MSW), ideally separated from metals, etc., yet not essential (metals can be recollected from ash outputs).
Pyrolysis	Pyrolysis is the thermo-chemical decomposition of organic material at elevated temperatures in the absence of oxygen.	All organic wastes. The process is also particularly effective for plastic and tire products. Not effective for metal inputs.
Gasification	The materials are heated at high temperatures in an environment with insufficient oxygen to promote combustion. The high heat without burning causes the waste to break down, releasing syngas.	Almost all MSW materials, including aluminium, but excluding other metal types.