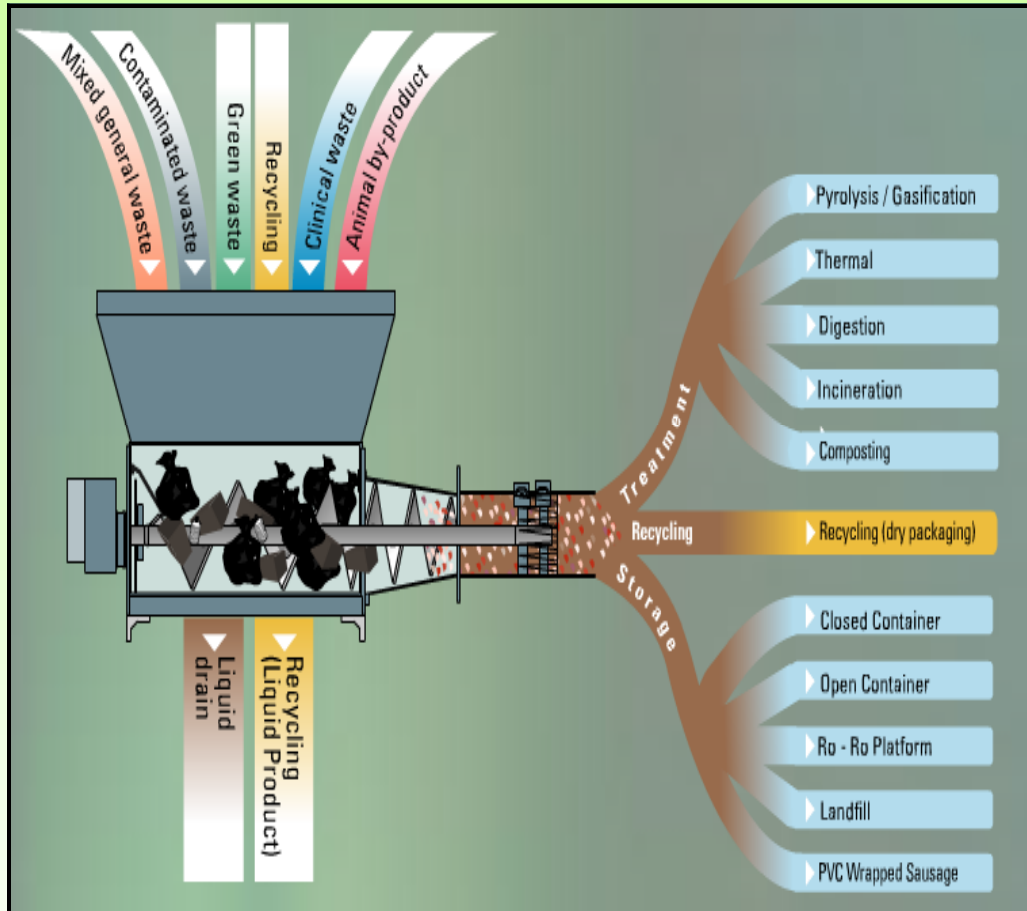


# Compaction and Liquid Extraction

## *A Waste Processing Solution*



**98% Reduction In Liquid Content!**  
**Compaction Ratios Of Up To 60:1!**  
**Secure Product Destruction!**



# Compaction and Liquid Extraction

Benefits include substantial savings in waste transportation, landfill and labor costs, energy efficiency and compliance with landfill and packaging waste legislation.

Processors are currently available in three sizes with custom options to satisfy specific end-user requirements such as enlarged hoppers, bin-lift and pallet tipper feed apparatus.



*Complete revolution™ 2000 series system installation with control panel, safety guarding, pallet tipper and lift equipment*



*Cut-away sectional view of revolution™ 400 series compaction unit showing patented screw and spring loaded compression cone.*

ZWES' Revolution™ brand of waste processing equipment is:

- Over 200 installations world-wide including Britvic, Coca Cola, Glaxo Smith Klein and L'Oreal.
- Patented technology for compaction, liquid extraction and secure product destruction.
- Processed waste is extruded as a dense annular shaped slug that does not re-expand and can be sent directly to the recycler.

[www.zwes.ca](http://www.zwes.ca)

**Head Office**  
6074 Shawson Drive  
Mississauga, Ontario  
Canada, L5T 1E6  
Tel. (905) 266-0314  
Fax (905) 362-1356

**Manufacturing**  
245 Industrial Parkway S.  
Aurora, Ontario  
Canada, L4G 3V5  
Tel. (905) 266-0314  
Fax (905) 893-5624

**USA**  
460 Eagle Drive  
El Paso, TX 79912-5810  
Tel. (915) 584-5729  
Fax (915) 581-3713

**LaBelle**  
PLASTIC EQUIPMENT SPECIALISTS

**USA**  
152 McCarty Rd.  
Jackson, MS. 39212  
Tel. (601) 372-4452  
Fax (601) 502-1784

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PLASTIC EQUIPMENT SPECIALISTS

# Engineered Fuels

## *A Waste To Energy Solution*

Engineered fuels capture key waste streams and process them into an efficient fuel source. The result is a consistent fuel, fixed moisture content with high thermal energy values. For example, recycled or reclaimed wood can be converted to a uniform fuel and significantly increase gasifier efficiency. Wood gasifies clean, with no emissions and passes local environmental standards. Additional waste streams are now providing efficient alternatives to coal, oil or natural gas as a fuel for the gasification process.



**Customer Specified Thermal Energy Content!**  
**Customer Specified Moisture Content!**  
**Constant Fuel Size and Shape!**

# Engineered Fuels



Photo Courtesy of CHIPTEC Wood Energy Systems

Today, gasification converts carbon based materials at temperatures of 760°–1650°C and with a limited supply of oxygen, to a syngas composed primarily of hydrogen and carbon monoxide. This is a chemical process, not combustion. If the syngas is cleaned of contaminants, it can be combusted in a reciprocating engine, producing electricity. Otherwise, the syngas can be combusted in a boiler, producing steam for power generation. Inorganic materials end up as either an inert, glassy slag (high-temperature gasification) or as bottom ash (low-temperature gasification).

## ZWES' engineered fuels:

- Increase gasifier efficiencies to over 90%.
- Gasifies clean, meeting local environmental emission standards.
- Customer specified to meet a variety of equipment needs.

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Made from chlorine-free bleached pulp. Please recycle.  
January 2011



# Anaerobic Digestion

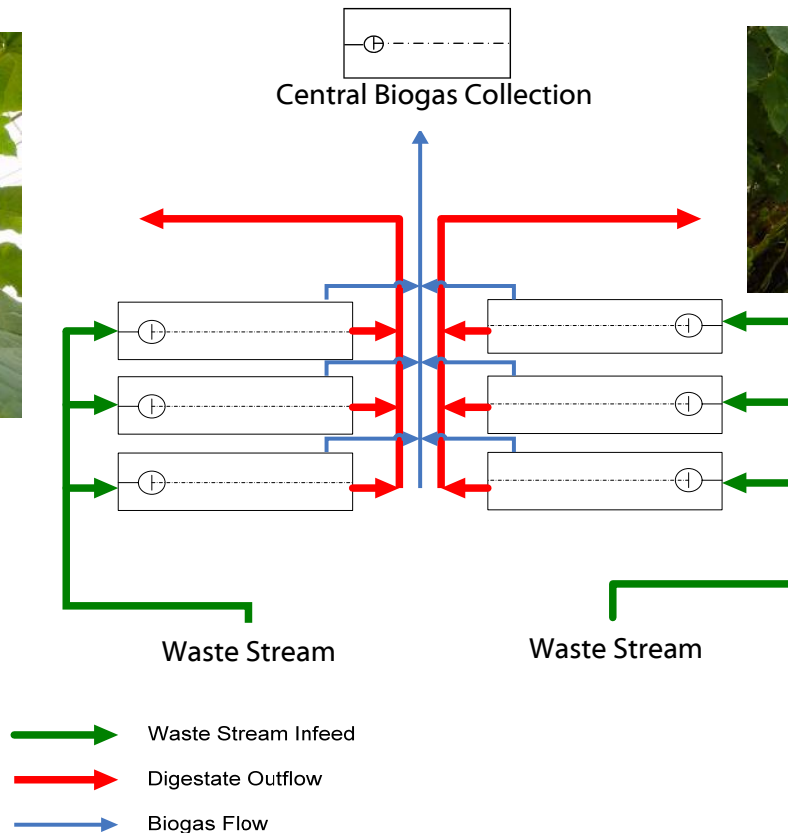
## *A Waste To Energy Solution*

High protein organic waste can be converted directly into energy through anaerobic digestion. ZWES has developed a unique small-scale anaerobic digestion system that is used to convert food and beverage wastes into biogas, with the residual organics acting as an ideal binder in the engineered fuel process.



**Methane Production 70% Plus!**  
**Virtually 100% Pathogen Kill!**  
**Hydraulic Retention Time of 4 to 5 Days!**

# Anaerobic Digestion



ZWES' Anaerobic Digester is a *horizontal, thermophilic* biological reactor that operates at 55 degrees Celsius. System features include:

- Improved gas quality and yields with higher solid destruction rates ensuring pathogen destruction.
- Shortened Hydraulic Retention Time (HRT), processing material 66% faster than mesophilic systems.
- The system is designed to reduce thermal parasitic loads and increase the overall efficiency of the system to over 90% by capturing heat generated from a co-generation system or boiler .
- Self-cleaning digester via sloped design and internal agitation.
- Feed stocks can be processed and digested separately with biogas collected in a central location.
- Plant design can be easily scaled to meet increasing requirements - one digester at a time.
- Digesters can be shipped on standard low-bed tractor trailer without the use of an escort.

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