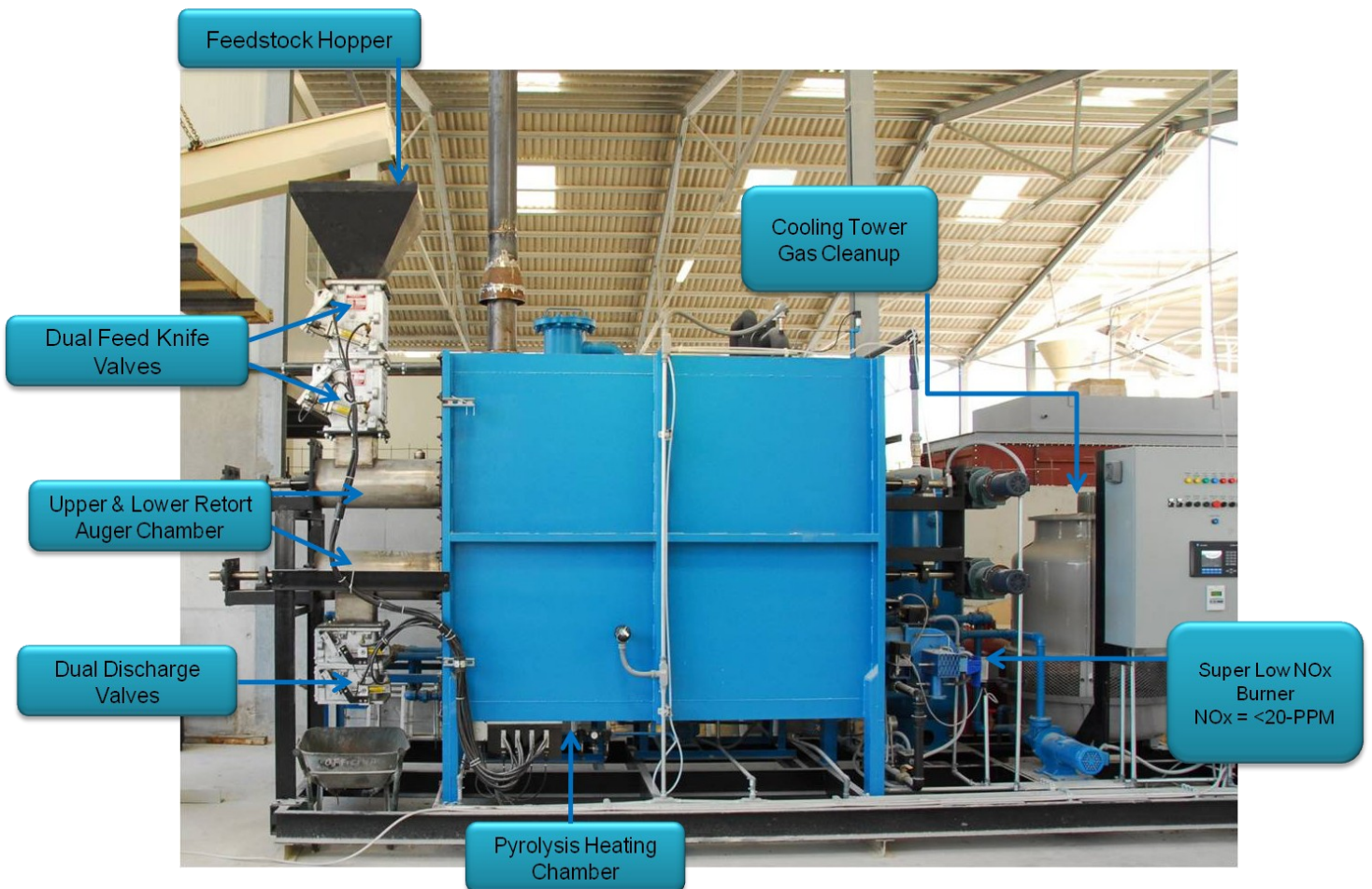


# PYROLYSIS GASIFICATION

## PROCESS AND TECHNOLOGY

### Pyrolysis Gasification Process



**Definition:** “Pyrolysis is the thermal decomposition of organic & synthetic waste material at elevated temperatures (800°F– 1200°F) in the absence of oxygen.”

# PYROLYSIS GASIFICATION

## PROCESS AND TECHNOLOGY

### Types of Waste-to-Energy Systems

Physical	Biological	Thermal		
RDF (Refuse Derived Fuel)	Methane Capture Landfill Gas	Combustion	Plasma-Arc Gasification	Pyrolysis Gasification
Mechanical Compressing of waste to log or pelletize state	Methane & Carbon Dioxide is collected	Mass Burn of waste materials	Gasification of waste by use of a plasma torch	Gasification waste by heating in the absence of oxygen
60% Reduction in waste volume	No reduction in waste volume	95% reduction in waste volume	95%-98% reduction in waste volume	90%-95% reduction in waste volume
60-80% Parasitic load*	NA	10-25% Parasitic load	50-58% Parasitic load	5-10% Parasitic load
Relatively new Technology	Existing technology—widely used	Existing technology—widely used	New technology—no commercially developed system	Existing technology—developed and widely used

- **Parasitic Load:** The amount of energy used in the process in comparison to what is produced.

### Facts

#### History:

- Waste-to-Energy Systems have been used in Europe since 1890's.

#### Today there are:

- 87 Waste-to-Energy Plants in the US
- 400 Waste-to-Energy Plants in Europe
- 190 Waste-to-Energy Plants in Japan
- China plans on investing \$2 Billion in Waste-to-Energy Plants in order to meet its carbon dioxide reduction goal of 45%.

**For more information, please visit: [www.wte.org](http://www.wte.org)**