

The following are rules of thumb for ZEROS fuel requirements and production of commercial products (electricity, liquid fuel, carbon dioxide and flash distilled water) by a medium-size (50 MW) ZEROS facility fueled by municipal solid waste (41 tons/hour, 300,000 tons/year, dry ash-free)

The figures are approximations and are sensitive to fuel source (energy per pound, moisture content, etc.), facility configuration and other factors.

Electricity generated	50 MW (gross)	
Fuel required	41 tons/hour	300,000 tons/year
Oxygen required	60 tons/hour	450,000 tons/year
CO ₂ produced	65 tons/hour	487,000 tons/year
H ₂ O produced chemically	10,000 gallons/hour	73 million gallons/year
Distillation capability	5 million gallons/day	1,551 million gallons/year (multistage flash distillation)

A plant of the same size configured to produce both transportation fuel-grade diesel or gasoline and electricity:

Electricity generated	32 MW (gross)	
Diesel produced	2,500 gallons/hour	17.7 million gallons/year
Oxygen required	60 tons/hour	450,000 tons/year
CO ₂ produced	65 tons/hour	487,000 tons/year
H ₂ O produced chemically	10,000 gallons/hour	73 million gallons/year
Distillation capability	5 million gallons/day	1,551 million gallons/year (multistage flash distillation)

A plant configured to produce diesel fuel only (no electricity):

Diesel produced	6,000 gallons/hour	43.2 million gallons/year
Oxygen required	60 tons/hour	450,000 tons/year
CO ₂ produced	65 tons/hour	487,000 tons/year
H ₂ O produced chemically	10,000 gallons/hour	73 million gallons/year
Distillation capability	5 million gallons/day	1,551 million gallons/year (multistage flash distillation)

Useful, general relationships

- 10 MW (gross) = 1 million gallons/day distilled water
- 1 ton/hour of fuel = 1 MW/hour (gross) (fuel with approximately 25% moisture)
- 1 ton/hour of fuel = 1.5 tons/hour oxygen (oxygen purity 90%)
- 1 MW (gross) = 1.5 tons/hour carbon dioxide
- 1 MW (gross) = 1 million gallons of F-T diesel/year





ZEROS, inc.

Steve Clark

ZEROS, Inc. • P.O. Box 888

Highlands, TX 77562 • sc@zerosinc.com

Tel: (281) 424-2511 • Fax: (281) 424-2512 • <http://www.zerosinc.com>

C. Allan Jones

Texas Water Resources Institute • 1500 Research Parkway, Suite A240

2118 TAMU • College Station, TX 77843 • cajones@tamu.edu

Tel: (979) 845-1851 • Fax: (979) 845-8554 • <http://twri.tamu.edu>