

Feasibility of Anaerobic Digestion of Organic Fraction of Municipal Solid Waste in the Twin Cities

MSW in TC	ton/yr	3,520,000
MSW Recycled	wt%	41%
Organic fraction	wt%	26%
MSW Landfilled in TC	ton/yr	2,076,800
OFMSW Landfilled in TC	ton/yr	539,968

Energy Required	M BTU/yr	2,800,000
Operational Days	d/yr	329
Energy Required	M BTU/d	8,518
Plant Size	MW	104

(90% of year)

Energy Content of Methane	M BTU/ton	45.5
Methane required	ton/d	187
	m3/d	237,719
Methane Content of Biogas	wt%	65%
Biogas Required	m3/d	365,721

<b>OFMSW Required (Verma)</b>		
Low m3 biogas/ton MSW		100
High m3 biogas/ton MSW		200
Low ton MSW/d		3,657
High ton MSW/d		1,829
Average ton MSW/d		<b>2,743</b>

**Waste Required**

<b>OFMSW Generated In Twin City Metro Area</b>		
	tons/yr	539,968
	tons/d	<b>1,479</b>

**Waste Generated**

MSW Required	tons/d	10,550
	ton/yr	3,467,932
MSW Generated Per Capita	ton/person/yr	1.17
<b>Population Required To Support This Facility:</b>		<b>2,964,045</b>

Current Capabilities	m3 biogas/d	221,905
	m3 CH4/d	144,238
Energy Production	M Btu/d	5,168
	MW	<b>63</b>
	M Btu/yr	<b>1,698,926</b>

**Energy Potential  
With Current  
Waste Generated**