

Barriers to MSW Gasification

- Corporate experience in the 70s and 80s
- Low cost of landfilling (vs. high cost of energy technologies like plasma gasification)
- Non-homogeneity of feedstock
 - Water content
 - BTU value
 - Size of discreet items
 - “Contamination” with non-fuel components (e. g. metal, glass)
- Generation of tars
 - Cost of breaking up tars
 - Hardware degradation due to tar build-up

Barriers to MSW Gasification (cont'd)

- Gas clean-up difficulties
 - Varying pollutants in gas stream require complex control trains to “be prepared” for worst case contamination – drives up cost
- Regulatory complication
 - Gasification currently lumped with incineration, combustion
- Public perception
 - Public also considers gasification to be a form of combustion
 - Perception of dirty, contaminating process

SO WHY DO IT??????

Reasons for Developing MSW Gasification

- MSW IS an energy source
 - We already pay to collect it,
 - Then we pay to transport it and aggregate it,
 - Then we throw it away.
- Difficulty and increasing cost of landfilling
 - Existing landfills face rising costs of environmental compliance
 - Siting/Permitting new landfills is becoming next to impossible
- Viable projects are affordable in today's economy
 - A 2000 ton per day facility will cost closer to \$300 million than \$7 billion for a large scale IGCC or CTL facility

Reasons for Developing MSW Gasification (cont'd)

- Pending carbon management requirements
 - Eliminating landfilling can make a SUBSTANTIAL improvement to a municipality's carbon footprint (see Lexington summary sheet)
- Gasification (instead of combustion) makes a wide variety of high value products possible, e. g.,
 - Gasoline
 - Diesel fuel
 - Ethanol
 - Chemicals and waxes

Potential Market Value

- Carbon credits – value unknown, but should be sizeable since (according to US EPA's Energy Information Administration) latest figures on MSW show 55% biogenic origin, 45% fossil origin
- Per ton disposal tipping fees
 - Constantly increasing nationwide
- Constantly rising product value for liquid transportation fuels

For Perspective:

Given US EPA's factor of 4.5 pounds of MSW generated per person per day, and INEOS Bio's estimate of 70 gallons of methanol from one ton of MSW, the potential ethanol from MSW production capability in the U. S. is almost 20,000,000,000 gallons per year.