



## Plasco Conversion System Distributed Generation



## Desired attributes of a DG technology

- **Technically sound**
- **Environmentally sustainable → low GHGs**
- **Economical – efficient use of fuel → acceptable per unit cost**
- **Safe, reliable operation**
- **Small footprint and attractive design acceptable to communities where power is needed → reduce transmission/distribution losses**
- **Simple, quick permitting process**

# Ottawa Facility: Commercial Module

Ground breaking: Sept 2006

Construction: 9 months

Power sales: 13 months

MSW receipt: 16 months

Power from MSW:  
17 months



# Waste need not be wasted

One tonne of MSW results in the following saleable products:



Based on typical Canadian municipal solid waste with a net calorific value of 3550 Mcal/T.

**99.8% of the waste is recovered**

# Better than the most stringent air regulations

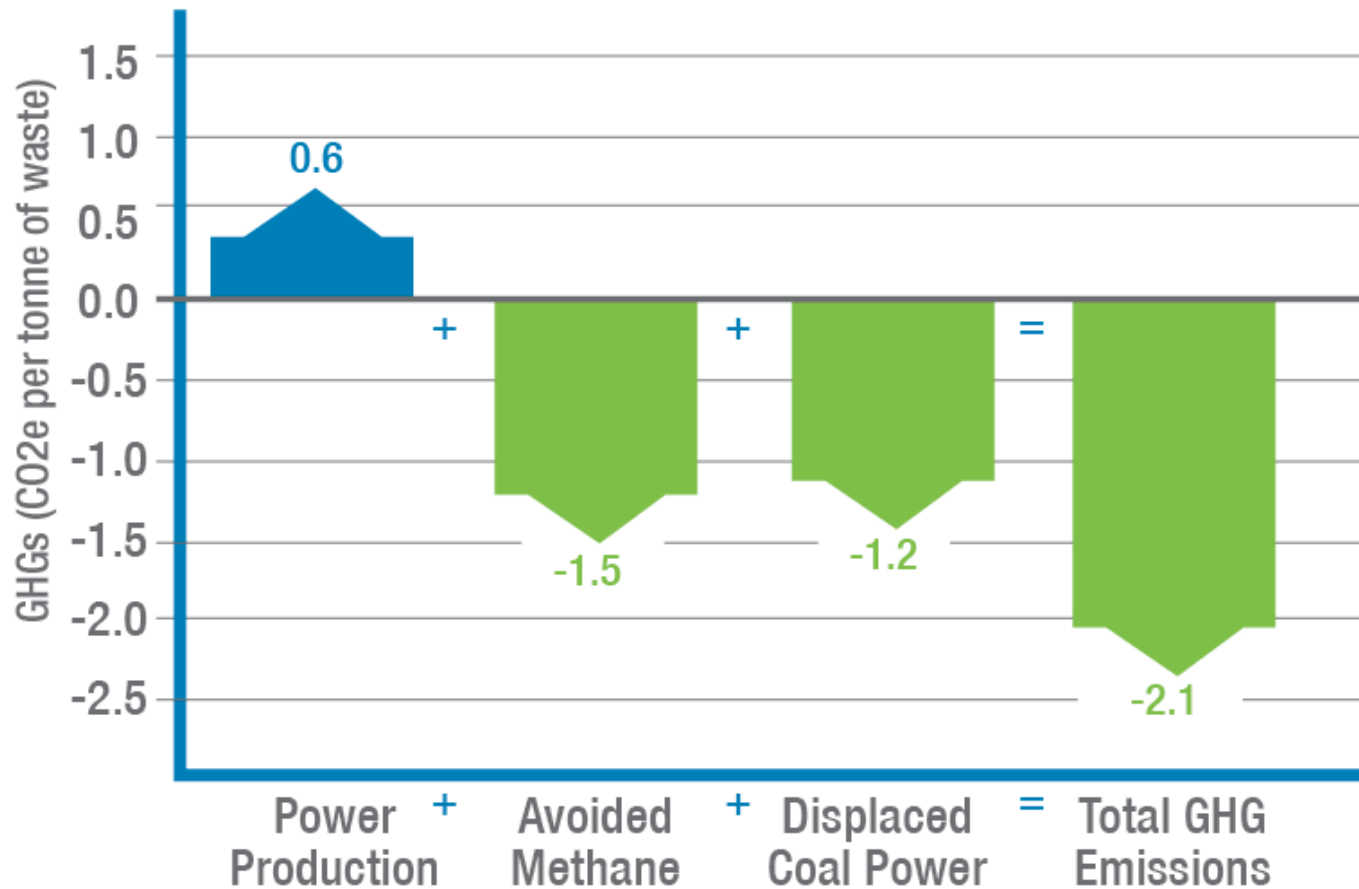
Parameter	Units	EU	California	Ontario A-7	Trail Road Limits	PlascoEnergy Targets
Particulate Matter	mg/Rm <sup>3</sup>	9	16	17	12	3
Organic Matter	mg/Rm <sup>3</sup>	9	-	66	50	9
Hydrogen Chloride (HCl)	mg/Rm <sup>3</sup>	9	27	27	19	2
Hydrogen Fluoride (HF)	mg/Rm <sup>3</sup>	0.92	-	-	-	0.02
Sulphur dioxide (SO <sub>2</sub> )	mg/Rm <sup>3</sup>	46	56	56	37	10
NOx expressed as NO <sub>2</sub>	mg/Rm <sup>3</sup>	183	202	207	207	9
Carbon monoxide (CO)	mg/Rm <sup>3</sup>	46	41	-	-	34
Mercury (Hg)	µg/Rm <sup>3</sup>	46	60	20	20	0.5
Cadmium (Cd)	µg/Rm <sup>3</sup>	46	10	14	14	1
Lead	µg/Rm <sup>3</sup>	-	140	142	142	12
Dioxins and furans	ng/Rm <sup>3</sup>	0.092	9	0.08	0.04	ND

## Notes:

1. All values are expressed at 11%O<sub>2</sub> and reference conditions (101.3 kPa, 25°C)
2. EU regulations combine Thallium with Cadmium and Lead with Class III Metals

# Maximum Environmental Protection GHG Reductions

Greenhouse Gas Reductions per Tonne of Waste



# Comparing the Alternatives

## WHAT HAPPENS TO 1 TONNE OF WASTE?

Maximum Value

Comparator	Plasco Conversion	Incineration	Landfill with Landfill Gas Capture
<b>Power Generation</b>			
<b>Primary</b>	GE Jenbacher Engine	Heat Recovery-Steam Turbine	Internal Combustion Engine
<b>Secondary</b>	Heat Recovery - Steam Turbine		
<b>Power per Tonne</b>	1.2 MWh	0.6 MWh	0.15 MWh
<b>Diversion</b>	99.8%	75-80%	0%

# Comparing the Alternatives

## WHAT HAPPENS TO 1 TONNE OF WASTE?

# Maximum Environmental Protection

Comparator	Plasco Conversion	Incineration	Landfill with Landfill Gas Capture
<b>GHG's avoided</b> - tonnes CO <sub>2</sub> e (Carbon Credits)	<b>2.1</b>	<b>1.5</b>	<b>1.2</b>
<b>CACs (per MWh)</b>			
NO <sub>x</sub> (g)	80	1660 <sup>b</sup>	570 <sup>e</sup>
Sulfur (g)	40	95 <sup>b</sup>	50 <sup>a</sup>
Particulate Matter (g)	13	37 <sup>b</sup>	8 <sup>e</sup>
CO (g)	168	190 <sup>b</sup>	2950 <sup>e</sup>
Mercury (mg)	2	60 <sup>d</sup>	2 <sup>a</sup>
Dioxins and Furans (ng)	ND	60 <sup>d</sup>	ND

a Parameters based on US EPA AP-42 Emission Factors for IC engines and landfill methane produced per tonne of waste.

b Based on Montenay's response to Request for Expressions of Interest, GVRD, 2006.






c Assumes 90-100 ppm H<sub>2</sub>S in gas.

d Based on "Life Cycle Assessment of Two Waste Management Scenarios for Metro Vancouver".

e Based on 2006 National Pollutant Release Inventory (NPRI) data for Vancouver Landfill and electrical capacity of 7.4 MW.



# Renewable power with the most benefits

	PLASCO CONVERSION	WIND	SOLAR
Provides base load power			
Methane Avoidance from Landfills			
Elimination of Long-distance Trucking of Waste – GHG reduction			
Displacement of GHG-intensive Power (e.g. Coal)			
Reduction in Transmission Losses			

# Zero Risk Business Model

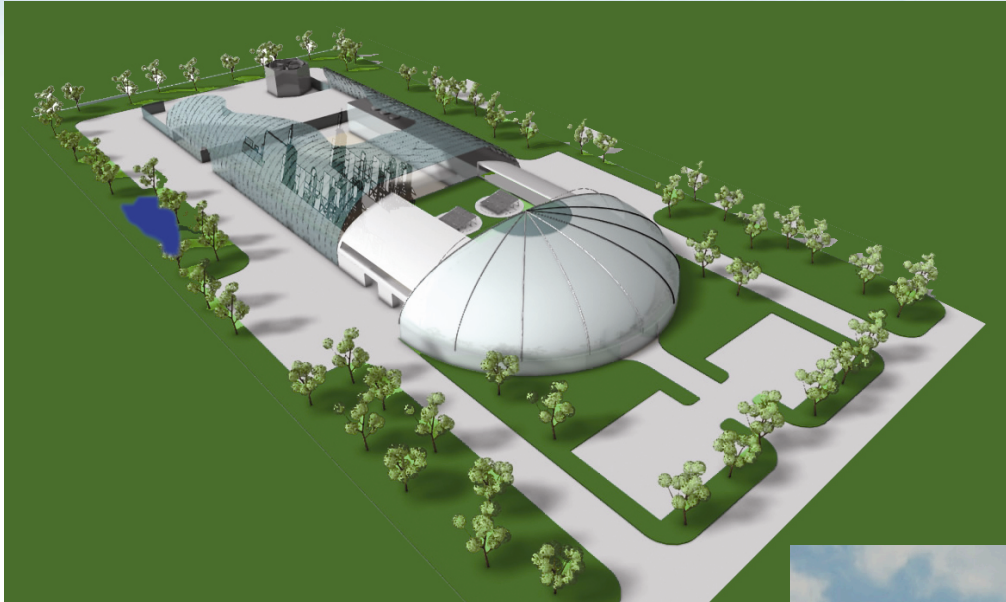
PlascoEnergy will build, own & operate the conversion system



## Key benefits to local utilities & municipalities:

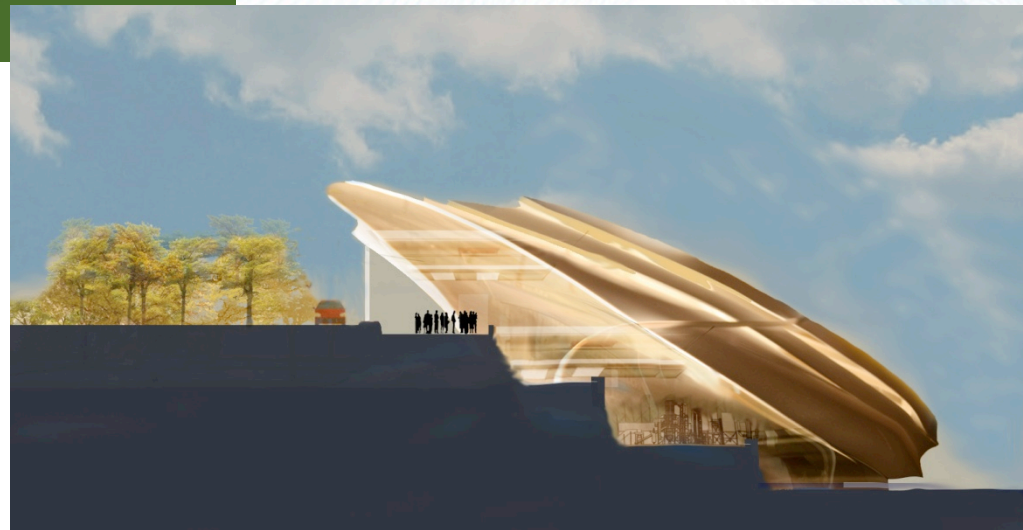
- **Secure supply of renewable base load power**
- **No capital or operational costs**
- **Environmentally sound management of municipal waste**
- **Long-term budgetary certainty**
- **Guaranteed environmental performance**
- **Rapid start-up – 15 months after permitting**
- **Small footprint, community friendly appearance**

# Designed for urban settings



Los Angeles

Montpellier,  
France





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