

Plasma Gasification

An Eco-Friendly Solution

Simply, plasma gasification uses plasma torches to super heat waste (garbage, sewage, landfill material).

It is almost completely broken down into clear burning SynGas, which produces electricity.

The remaining material is used to produce safe, inert material for building products.

Advantages of Plasma Gasification:

1. Plasma gasification reduces emissions from existing coal fired plants by as much as 60% to 95%.

(Source: NRG Energy Inc., <http://www.nrg-econrg.com/pdf/factsheet-plasma.pdf>)

2. A 120 mega watt facility will consume on average 3,000 tons of garbage per day.

(Source: NACE, http://www.nacleanenergy.com/features_details.php?feature_id=5&fpage=1)

3. Our plasma system can consume raw sewage from cities.

4. Our system can use old landfills, completely cleaning up and beautifying our landscape.
5. Plasma gasification is an affordable, cost-effective solution compared to other alternative energy solutions.
6. Our system can be retrofit on the existing power generating plants, reducing time and green house gas emission.

Emissions

(CO2 Equivalent Emissions per Unit of Power Generated)

Existing coal technology

(Average of old and new as of 2000, USA)

2.095

Incineration

1.6

New coal technology

1.1

Plasma gasification

1.07



Emissions

(CO2 Equivalent Emissions per Unit of Power Generated)

Source: Westinghouse Plasma Corp, http://www.westinghouse-plasma.com/technology_solutions/environmental_benefits.php

Landfills with gas capture	2.75
Incineration	1.6
Plasma gasification	1.07



Plasma gasification can reduce emissions by up to 90%

Plasma gasification is not incineration

Use the World's Garbage

One single 120 megawatt clear burning plasma gasification plant can consume 3,000 tons of garbage destined to pollute our landscape to power approximately 36,000 homes per day.

(Source: American Recycler, <http://www.americanrecycler.com/dec06/b/progressive.shtml>)

Sewage

In many cities and third world countries, raw sewage is pumped by thousands of litres into our lakes, rivers and streams, creating massive ecological problems.

Our plasma gasification system can reduce or eliminate this with our facilities and produce electricity with little or no processing.

Landfills

Our system of plasma gasification can consume old landfills and brown sites.

These blights on our landscape can be eliminated and the land can be restored to its previous condition and become useable land instead of an ecological time bomb.

Ecologically Friendly & Affordable

For an alternative energy solution to work, it must reduce human footprints on the earth

BUT

It must also make economic sense.

Plasma Gasification does both.

Alternative Energy Solutions

Alternative Energy Source	Advantages	Disadvantages	Cost / kwh
Nuclear	No emissions	<ul style="list-style-type: none"> ▪8-10 years to plan and build ▪Cannot retrofit existing plants ▪Irradiated product to dispose of (eg. Fuel rods) ▪High capital and maintenance costs, 2 to 3 times the costs for other types of power plants of the same size, not reflected in cost / kwh ▪Potential Chernobyl, Three Mile Island 	8.3¢-11¢
Wind	No emissions	<ul style="list-style-type: none"> ▪High maintenance ▪Large human footprint ▪Affects migratory birds ▪Blight on landscape ▪Based on current technology, capital investment will wear out before it can be recovered 	13.3¢
Solar	No emissions	<ul style="list-style-type: none"> ▪Large human footprint 5000 watts per acre ▪Technology is not fully developed ▪Cannot retrofit existing facilities ▪Extremely costly, does not make financial sense 	43.0¢
Plasma Gasification	<ul style="list-style-type: none"> ▪Reduce emissions by as much as 90% ▪Consumes 3,000 tons of garbage per day ▪Consumes raw sewage ▪Cleans up existing landfills ▪Easy to maintain ▪Most cost effective solution ▪Other byproducts can be sold (building materials and sulphur) ▪Can retrofit existing inefficient polluting plants ▪Affordable for third world countries ▪Any heavy metal bound in slag as safe, inert material, 1/100 reduction 	<p>Some emissions, but still lower than other types</p> <p>Plasma Gasification – 1.07 New coal technology – 1.1 Incineration – 1.6 Existing coal technology – 2.095 Landfills with gas capture – 2.75</p>	3.3¢-9.0¢

Plasma Gasification

An Eco-friendly Solution

A solution for today's world

Resources:

Climate Progress

<http://climateprogress.org/2008/06/13/nuclear-power-part-2-the-price-is-not-right/>

American Recycler

<http://www.americanrecycler.com/dec06/b/progressive.shtml>

Westinghouse Plasma Corp.

http://www.westinghouse-plasma.com/technology_solutions/environmental_benefits.php

NRG Energy Inc

<http://www.nrg-econrg.com/pdf/factsheet-plasma.pdf>

North American Clean Energy (NACE)

http://www.nacleanenergy.com/features_details.php?feature_id=5&fpage=1

Energy Foundation

<http://www.ef.org/documents/AR2002FrontEnd.pdf>

Department of Energy

www.eia.doe.gov/cneaf/electricity/page/co2_report/co2emiss.pdf

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