

No pollution is emitted from the system - the only emission is carbon monoxide which is not a direct greenhouse gas.¹

3.4 The Definition of Plasma

Plasma is defined by Westinghouse Plasma Corporation as being "a high temperature, ionized, conductive gas created within the plasma torch, by the interaction of the gas with an electric arc". The interaction breaks the gas down into electrons and ions, which enables the gas to become thermally and electrically conductive. This conductivity allows a means to transfer energy from the arc to the incoming process gas and, in turn, to the process or furnace. This state is called plasma and exists only within the immediate confines of the arc within the torch. The Plasma torch is the center of the plasma system. As the gas leaves the torch it recombines into its neutral (non-ionic) state, but still remains super heated.²

Plasma exists at extremely high temperatures. Lightning is nature's example of plasma.

3.5 Product Benefits

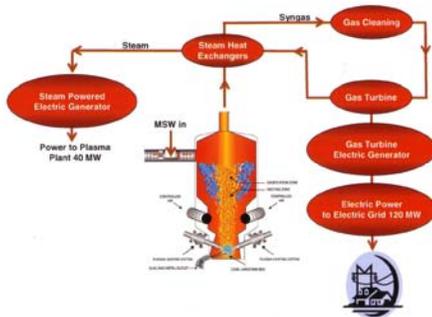
The high cost of waste management and the rising cost of energy are two significant financial challenges facing governments and industry today. Plasma arc technology helps solve both challenges through turning Municipal Solid Waste into a source of clean energy.

"The U.S. produces 1.4 Billion Tons of wastes and residue materials per year, impacting air and water quality, decreasing land values, limiting future use of land, and increasing costs to municipalities, industry and ultimately the consumer."

Source: Environmental Technology Opportunities Portal, U.S. Environmental Protection Agency, Project Plan, Waste to Energy Team, January 2005.

The Plasma Arc Technology process makes municipal waste an asset and a renewable resource rather than a liability. Waste streams become feed stocks, and the product solves waste issues, mines closed landfills, and eliminates both closed and current landfills. It can handle industrial, commercial, hazardous, medical, and used tire landfills safely and effectively. In an era of global warming and overstuffed landfills, Plasma Arc Technology offers a green, environmentally correct process for handling municipal waste.

The second challenge that fuels the need for plasma arc technology is the increasing demand for primary energy, which is growing at an annual average rate of 2.4%, and its potential negative impacts such as the depletion of natural resources, ecosystems, and the related generation of waste and



<http://www.geoplasma.com/content/com.geoplasma.filemanager.FileManager/8/resources/PlasmaGasificationSystem.pdf>



Waste to Fuel

Source: www.barlowprojects.com/200000.htm

¹ Sources: Notes from U.S. Science & Technology, AND The Regional Municipality of Halton, Step 1B, EFW Technology Overview, May 30, 2007 AND Video: What is Gasification?, accessed through <http://alternrg.ca/> September 26, 2007 AND <http://science.howstuffworks.com/plasma-converter1.htm>, accessed October 2, 2007

² Source: Industrial Plasma Torch Systems, Westinghouse Plasma Corporation