APPENDIX 1 - Plasco Energy Group[1]

Plasco Energy Group is an Ottawa-based company that has developed a proprietary plasma gasification process. It has a small 5-ton per day facility in Spain which is used in treating garbage there, and which allows Plasco to experiment with its process and equipment and the operation with different garbage content. Plasco is rapidly becoming the world leader in applying the technology to treatment of residual waste after recycling.

A number of companies have rushed prematurely to try to establish plasma gasification facilities for treating municipal waste promising performance without first demonstrating that their plant worked. This has created doubts in the public's minds when the systems failed or under-performed for either technical or economic reasons.

Plasco decided to conduct considerable research first before actually proceeding to make claims. The research involved testing out each part of the process first, and then all parts together. Along the way they patented various parts of the process, and introduced features to make sure that the energy recovered was much higher than the energy used in the process. The system was designed to ensure that the resulting synthetic gas (syngas) was always of the same quality so as to run internal combustion engines efficiently. Active feedback is built into their system so that the parameters can be adjusted to achieve the same quality of gas all the time.

Having dealt with the system, Plasco then sought a method to demonstrate to everyone that the system worked. Rather than try to sell a facility to a customer, they adopted a model whereby they would finance the facility themselves, own it and operate it, so that, as in the case for many earlier systems, buyers could not blame the system for operator errors. Ottawa was selected as the demonstration site (4 acres donated by the City of Ottawa at the Trail Road Waste site), and a contract drawn up. Ontario agreed on a set of emission specifications much tighter than the incinerator specifications (See Appendix 5) and agreed to treat this as an experimental demonstration bypassing the need for a full environmental hearing. The Trail Road facility is intended to demonstrate clearly that plasma gasification is the safest and best way of dealing with Municipal Solid Waste. Plasco has extended an open invitation to all interested parties to "come and see for yourself". This particular demonstration facility is designed to handle 100 Tons of waste per day, but is licensed for only 85 tons. The equipment is being built in modules by several large firms, and is expected to be operational in early 2007 with the first electricity to be generated in March 2007. Plasco estimates that it would require only 9-12 months to build the equipment and complete the installation in future facilities.

[1] http://www.plascoenergygroup.com

The Plasco model for the most efficient future facilities is to parallel two 100 ton/day streams, making the facilities able to handle 200 tons per day, with the ability to also generate steam, and use the steam to generate additional electricity (a 20% improvement). The 100-ton per day unit will generate 5-6 MW of electricity of which at least 4 MW will be sold to Ottawa Hydro. A 200 Ton unit with co-generation as described would generate up to 14 MW. Note that 200 tons per day is equivalent to 73,000 tons of waste per year. To put a 200 tons per day facility in place would require only 4 acres of land donated tax free to Plasco, a guaranteed stream of waste for 20 years, and a guaranteed price for the electricity. (Note that under Ontario's new laws effective in November 2006, the electricity from the Trail Road facility will be sold for $0.11 per kWh). A similar scheme elsewhere, whereby the electricity generated from waste is sold at a premium, would allow tipping fees for waste to be held at $50.00 per ton with only minor inflation increases over the 20 year period.

All parts of the Plasco system have been tested and shown to work as specified. Before starting an active marketing campaign, Plasco has elected to demonstrate a large-scale commercial system in operation, so that the general public will see that plasma gasification works. People are invited to come see the plant in operation. To alleviate public concerns over possible contamination in the gases, the gas emissions will be monitored all the time. In Ottawa, there will be a committee responsible for this monitoring and the analysis of the results. This will include representatives from the city, the province and environmental groups such as the Sierra Club. Already there is a contract in place in Ottawa for all the future garbage (additional facilities) which will become effective after the successful demonstration of the Trail Road plant. Other municipalities in Canada (for example, Montreal) have expressed strong interest in seeing the Trail Road facility in operation, while others, most notably Red Deer, Alberta, are already setting aside land for establishing plasma gasification facilities.

Plasco is well financed, reducing the economic risk to the customers. It has all the money it needs to put in facilities as requested. Many of the major world financial organizations are backing them. They will not, however, sell a facility, but will accept investment in a minority position in any particular location. For example, the Irvings of New Brunswick asked to buy a facility for their pulp and paper waste and were turned down by Plasco. They said they would buy elsewhere, but came back sheepishly saying they could not find someone else to supply what Plasco offered.