



## **Case Study Enerkem Technologies Inc.**

### **About Enerkem Technologies Inc.**

Enerkem Technologies Inc. is a frontier group in the development of leading-edge energy technologies that takes waste biomass out of the landfill cycle and transforms it into clean, sustainable energy.

### **Issue**

Two of the planet's most pressing problems are the need to reduce the amount of waste that goes to landfill and the need for new, usable, sustainable sources of energy. Landfill is becoming both scarce and expensive as society becomes more aware of the environmental damage that landfilling urban waste can cause. Costs of non-sustainable fuels such as fossil fuels are growing at an alarming rate and their contribution to undesirable GHG effects is now an accepted fact. Enerkem meets both of those problems head-on with a technology that gasifies residual solid biomass including common household garbage and specific industrial wastes, and transforms them into a synthetic gas that can be used as fuel for heating or to power turbines for the production of electricity. As well, the synthetic gas can also be used, after subsequent treatment, for the synthesis of alcohols. The process of producing synthetic gas is over 80% energy-efficient with essentially no atmospheric emissions since the synthetic gas is "as clean as natural gas". Any inerts present in the raw material are recovered as a dry powder-like material that can be further converted into aggregates or incorporated into well defined matrices such as bricks.

### **Action**

Enviro-Access has been involved with Enerkem since 1994, helping them through every stage of their growth from a University research team to a successful technology firm. Enviro-Access has also worked with Enerkem to establish the credibility of their process within the environmental community. They facilitated the company's contact with the City of Sherbrooke and conducted financing and feasibility studies which led to a successful on-going demo project with the city. Enviro-Access created technical documentation, a web site, calculations on projected reductions of greenhouse gas emissions, and other communications material that grew interest in the new process and led to additional business opportunities being now developed by the company.

### **Results**

Enerkem has enjoyed significant growth and success. The pilot project in Sherbrooke begins with the green garbage bags left on the appropriate containers by the citizens, collected weekly by the municipality and ends with a clean-burning synthetic gas. The process produces 2 Nm<sup>3</sup> (Normal Cubic Metres) of gas per kilogram of residual biomass (dry basis). Potential savings on the ever-escalating costs of sending garbage to landfill and on overall energy costs are huge. A variation of the



process is used in Spain, to convert residual non-recyclable plastics into synthetic gas used to power internal combustion engines for the production of electrical energy with significant reductions in the cost of producing that energy. An agreement has just been signed with the City of London, England for the conversion of sorted and biodried municipal garbage into synthetic gas in the borough of Havering. Permitting is underway. A demo project, using also sorted and biodried municipal garbage is underway at Edmonton. Permits will be lodged shortly.

### **Next Steps**

Enerkem is now preparing the demonstration of a second generation process that will convert the synthetic gas into liquid Ethanol that can be blended with gasoline to fuel automobiles. Given that Ethanol-containing gasoline is being adopted as a green energy solution, this process has incalculable potential in the marketplace. The Enerkem approach will literally use "your garbage to fuel your car".



"We called on Enviro-Access to establish a rigorous methodology to calculate greenhouse gas emission reduction. Results obtained allowed us to support the implementation of our financing strategy. Enviro-Access helped us maintain a constructive relationship with the federal government."

**Vincent Chornet**, Vice-President, Finance – ***Enerkem Technologies inc.***

### **For more information contact:**

**Manon Laporte, President and CEO  
Enviro-Access**

85 Belvedere Street North  
Suite 150  
Sherbrooke, QC  
J1H 4A7  
Tel: 819-823-2230, ext. 26  
Fax: 819-823-6632  
E-mail: [mlaporte@enviroaccess.ca](mailto:mlaporte@enviroaccess.ca)  
Web site: [www.enviroaccess.ca](http://www.enviroaccess.ca)

**Esteban Chornet, President  
Enerkem Technologies Inc.**

375, Courcellette Street  
Suite 900  
Sherbrooke, QC  
J1H 3X4  
Tel: 819-347 1111  
Fax: 819-347-1113  
E-mail: [echornet@enerkem.com](mailto:echornet@enerkem.com)  
Web site: [www.enerkem.com](http://www.enerkem.com)