



**Biothermica**  
Technologies Inc.



## Landfill Gas A resource to develop



The Landfill Gas Division's mission is to allow the landfill sites managers to :

- Meet landfill gas performance standards as required by environmental regulations in the most efficient manner;
- Maximize profits from the use of this landfill gas through energy sales and/or carbon emission reduction credits.

The Landfill Gas Division relies on innovative evaluation and management techniques adapted to the particular situations found at different landfill sites. Moreover, it provides assistance in the registration and accreditation of carbon emission reduction credits in official records. The Landfill Gas Division offers almost twenty (20) years of experience in the design, construction, operation and financing of landfill gas plants, collection and flaring networks. It has developed unique techniques for evaluating, recovering, managing and utilizing landfill gas resources. Through its ownership of Gazmont landfill gas plant (25MW), Biothermica has gained practical experience in operating landfill gas collection and utilization infrastructure.

## Landfill Gas Evaluation

### Evaluation of methane generation

- Georeferenced surface sampling
- Sampling of existing wells
- Dynamic pumping test
- Horizontal migration

### Landfill gas characterization

- Landfill gas sampling
- Laboratory analysis

### Projected landfill gas generation and energy potential using mathematical modelisation

## Landfill Gas Management

### Design and construction of gas collection system, pumping station and flaring system

### Operation and optimization of gas collection system

- Wells calibration
- Monthly performance reports
- Capture efficiency evaluation
- LFGSim: gas collection system optimization software

### Environmental performance follow-up

- Ambiant air sampling
- Migrations follow-up and atmospheric dispersion modeling



## Landfill Gas Utilization

### Analysis of the utilization alternatives

- Direct utilization
- Pipeline quality gas
- Electricity
- Heat

### Analysis of the applicable thermodynamic cycles

- Diesel cycle
- Simple or combined cycle gas turbine
- Steam cycle

### Landfill gas power plant construction

- Detailed engineering
- Field supervision
- Start-up

### Plant operation



Landfill gas combustion generate significant quantities of carbon credits



## Financing and Carbon Credits Sale

### Financing and installation of gas collection systems

### Financing of landfill gas power plant

### Carbon credit sales

- CDM (Clean Development Mechanism) and JI (Joint Implementation) projects
- Base line study and PDD (Project Design Document)
- Host country approval
- Validation report
- Sale and trading of CER (Certified Emission Reduction) and ERC (Emission Reduction Credit)
- CDM Executive Board approval



**Biothermica all around the world...**

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