

POWER PROJECTS



GLANBROOK LANDFILL GAS TO ENERGY PROJECT HAMILTON, ONTARIO



Owner: Hamilton Renewable Power Inc.

Duration: Fall of 2006 to Fall of 2008

Hamilton Renewable Power Inc. (HRPI) contracted Toromont Cat Power Systems to undertake a turnkey project to utilize available landfill gas from the Glanbrook Waste Management Site in the City of Hamilton for the purposes of electricity generation and odour control.

The scope of work generally included geotechnical investigation, landfill gas collection system design, plant foundation design, plant structural design, fuel gas conditioning system design, electrical systems design and utility interconnection design. Furthermore, Toromont was responsible to oversee and undertake all on site construction activities and mentor the plant commissioning process.

The project involved the installation of horizontal collection trenches and vertical extraction wells, landfill gas transmission piping, condensate management facilities, flare system and a generation facility complete with two Caterpillar G3520C 1.6 MW reciprocating gas generator sets, heat rejection radiators, fuel gas trains, ventilation systems and controls. The landfill gas collection field consists of 15 vertical extraction wells, 28 horizontal trenches and approximately 8500m of LFG collection piping. The landfill and collection field is manually controlled and monitored to allow LFG pressure and quality to be optimized.

A 6m x 10m pre-engineered structural steel and metal clad blower building contains the landfill gas blowers and gas conditioning equipment. An electrical module contains the motor control centre, control panels, metering cabinet and utility interface panel. Electricity generation is provided at 4160V and stepped up to the utility distribution voltage of 27.6kV. Excess landfill gas not consumed by the generator sets can be delivered to the enclosed flare. The plant is fully automated and remotely operated.

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