

POWER PROJECTS



**Customer: Mapleward Renewable
Generating Station**

Location: Thunder Bay, Ontario



Customer Requirement:

Generate renewable electricity from waste landfill gas

Scope of Supply: Equipment

Two of Caterpillar® G3520C 1.6MW generators

Power Need:

Thunder Bay Hydro Renewable Power Incorporated has inaugurated the first project under its' SEED Initiative (Sustainable Electricity Energy Development) the Mapleward Renewable Generating Station. The methane gas generation plant is expected to annually convert 263 million cubic feet of methane gas, that would have otherwise been released into the environment, and create enough electricity to power 3,000 homes in the City of Thunder Bay.

Solution:

The methane gas collected from decaying organic material in the landfill site by series of drilled wells – a provincial regulation makes it mandatory to dispose of it in an environmentally friendly fashion – is being sent to a conditioning room where moisture is removed and it is prepared for the generators. Low-emission internal combustion reciprocating engines are used to convert what remains into electricity.

“Each engine produces approximately 2,300 horsepower of power. That in turn drives a 1,600 kilowatt generator. The electrical power that’s in the individual generators is harnessed and synchronized to our local utility here and then it goes out on the transmission lines,” said Bruce Baxter, operations manager with Toromont Energy Limited.

City of Thunder Bay General Manager of Transportation and Works, Darrell Matson, likes it for a couple of reasons. First it follows Council’s clean, green and beautiful strategy and it takes a waste product and known greenhouse gas and turns it into an asset.

Result:

The Mapleward Renewable Generating Station is capable of producing 3.2MW of renewable electricity and is designed to expand by one more generator which would bring total capacity up to 4.8MW in the future. “The venture is a win-win for the City”, said Thunder Bay Hydro President Robert Mace, “It is a milestone moment.”

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