

POWER PROJECTS



WOODWARD AVE. WASTEWATER TREATMENT PLANT DIGESTER GAS COGENERATION PLANT HAMILTON, ONTARIO



Owner: Hamilton Renewable Power Inc. Commercial Operation on July 10, 2006

Hamilton Renewable Power Inc. (HRPI) contracted Toromont Cat Power Systems to undertake a turnkey project to utilize available digester gas from the Woodward Avenue Wastewater Treatment Plant in the City of Hamilton for the purposes of electricity generation and heat recovery.

Toromont was required to integrate the generation equipment into existing infrastructure and was responsible to undertake the detailed design, construct and commission the digester gas cogeneration system.

The 1.6 MW facility consists of one containerized Caterpillar G3520C reciprocating gas generator set. The system includes a jacket water/aftercooler waste heat radiator, digester gas drying and filtration equipment, hot water pumping systems, electrical switchgear, motor controls, and electrical protection systems. Electricity is generated at 4160V and stepped up to the utility distribution voltage of 13.8kV.

In addition to the electricity output, the facility produces thermal energy in the form of hot water that is distributed back to the water and wastewater treatment facilities which will be utilized for facility space heating as well as the wastewater digesters. Heat generation consists of recovery of thermal energy from engine lube oil, engine after-cooler, engine jacket water and engine exhaust. The plant is fully automated and remotely monitored.

Current operation of the Woodward wastewater treatment facility is producing approximately 17,000 cubic meters of digester gas through the normal wastewater treatment process per day. Electrical interconnection of the facility is “behind the meter” and the generation will effectively result in displacing 1.6 MW of the water treatment facility’s 8 MW load.

To help ensure HRPI meets its business objectives and optimize returns from this asset, Toromont Cat Power Systems and HRPI entered into a long-term operations and maintenance contract which leverages Toromont’s extensive parts and service infrastructure. HRPI currently holds a 20 year contract with Ontario Power Authority (OPA) to sell its renewable energy.

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