

Technology

Monitoring

Best Practices

SolarCity Partnership

BACKGROUND

The City of Toronto chose to install a 3.2 kW photovoltaic system at Fire Hall 334 to evaluate the performance of the technology and to showcase the City's environmental leadership. Installed in December 2006, the project is taking advantage of the Ontario Power Authority's micro Feed-in Tariff program.

MONITORING

Installed on site is a Fronius Data Acquisition System. Monitored parameters include solar irradiance, cell and ambient temperature, wind speed, and energy output by the inverter.



FINANCIAL

The project was entirely by City of Toronto from the Capital Budget. The system will pay for itself in approximately 20 years and continue generating electricity for years after.

STATUS

FIT payments began in July 2010 and should provide a reliable revenue stream for the City of Toronto for the next 20 years.

For more information, contact:

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Fire Station #334

3.2 kW Photovoltaic System



Project Overview

Project Owner: City of Toronto
Location: 339 Queen's Quay West, Toronto, ON
Building type and use: Fire Station
System type: Grid connected PV
System power rating: 3.2 kW
Installation date: December 2006

System Configuration

System Surface Area: 19 m²
Total number of Modules: 16
Module Manufacturer: Sanyo
Module Wattage: 200 W
Module Model: HIP-200BA3
Inverter Manufacturer: Fronius
Inverter Model: IG 4500-LV (4.5 kW)
Number of Inverters: 1
Array Angle: 25 degrees from horizontal
Azimuth: 15 degrees West of South
String Configuration: 4 modules per string, 4 parallel strings

Annual Performance

3 year average actual performance: 1,210 kWh/kW

Financial

System Cost (including tax): \$62,007
Grants: None
Annual Income: \$3,106*
Cost per kW: \$19,377
Simple Payback: 19.7 years

Environmental Benefits

Estimated emission reduction: 0.724 tonnes CO₂e /yr**

*based on FIT rate of 71.3 ¢/kWh

**based on 0.187 kg CO₂e/kWh

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