

Technology
Monitoring
Best Practices

SolarCity Partnership

BACKGROUND

The Toronto Parking Authority chose to install a 21 kW photovoltaic system at its St. Lawrence Parking Garage to reduce costs and to showcase their environmental leadership. Installed in August 2009, the project was designed to take advantage of the Ontario Power Authority's Feed-in Tariff (FIT) program.

MONITORING

The system is being monitored by a Fat Spaniel monitoring system. Monitored parameters include on-site radiation, cell and ambient temperature, wind speed and direction. Energy production is monitored via three inverters.

FINANCIAL

The project was funded primarily by the Toronto Parking Authority with the Toronto Environment Office contributing to monitoring and reporting expenses. The system will pay for itself in approximately 16.6 years and continue generating clean electricity for years after.



STATUS

Grid connection has been delayed due to changes in FIT metering requirements. The necessary changes have been completed and the project is awaiting final FIT contract approval, which is anticipated in early 2012.

For more information, contact:

Remy Iamonaco, P.Eng., Vice President, Design, Construction & Maintenance, Toronto Parking Authority
416-393-7335; riamonaco@toronto.ca

*based on FIT rate of 71.3 ¢/kWh

**based on 0.187 kg eCO₂/kWh

Toronto Parking Authority

21 kW Photovoltaic Installation



Project Overview

Owner: Toronto Parking Authority
Location: 2 Church Street, Toronto
Building Type and Use: Parking Garage
System Type: Grid connected PV
System Power Rating: 21 kW
Installation Date: August 2009
Installer: Carmanah

System Configuration

System Surface Area: 156 m²
Number of Modules: 120
Module Manufacturer: Sharp
Module Wattage: 175 W
Module Model: NT-175U1
Inverter Manufacturer: SMA
Inverter Model: SB7000US
Number of Inverters: 3 - in parallel
Array Slope: 65 degrees from horizontal
Azimuth: 15 degrees East of South
String Configuration: 4 strings of 10 panels per inverter (total of 12 strings)

Annual Performance

2010 Actual: 1,132 kWh/kW

Financial

System Cost (including tax): \$269,740
Grants: \$50,000
Annual Income: \$16,247*
Cost per kW (excluding external funding): \$12,845
Simple Payback (excluding external funding): 16.6 years

Environmental Benefits

Estimated Emission Reduction: 4.4 tonnes eCO₂ /yr**

© 2012, [City of Toronto, Toronto Atmospheric Fund, Toronto and Region Conservation Authority]. All Rights Reserved.

This feasibility study was carried out with assistance from the Green Municipal Fund, a Fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.