



BACKGROUND

In order to advance its commitment to corporate sustainability, Loyalty One chose to install a 163.18 kW photovoltaic system at its customer call centre in Mississauga, ON. This project was the largest of its kind in Canada at the time of construction. The PV system is composed of two main arrays: an angled ground-mount and a horizontal roof-mount. These arrays offset the facility's need for power from conventional sources and will generate substantial long term revenues from electricity sales through the Ontario Power Authority's Feed-in Tariff program.

MONITORING

A Sunny WebBox is installed on-site, which logs energy production data collected from each inverter. Yield data, along with solar radiation and temperature measurements, are accessible through the Sunny Portal website in hourly, daily, and monthly intervals.

FINANCIAL

The total installed cost of this PV project was reported to be \$1,850,000. Based on this figure, the system will pay for itself in approximately 15 years and continue generating clean electricity for years after.

STATUS

The PV system was conceived under Ontario's Renewable Energy Standard Offer Program (RESOP), which preceded the Feed-in Tariff (FIT) program. Construction began as the FIT program was being developed, and the project has successfully transitioned from RESOP to FIT.

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Loyalty One

163 kW Photovoltaic Installation



Project Overview

Location: 6696 Financial Drive, Mississauga, ON

Building Type and Use: Customer call centre

System Type: Grid connected PV

System Power Rating: 163.18 kW

Installation Date: Commissioned in November 2010

Installer: RESCo Energy

System Configuration

	Carport Array*	Rooftop Array
System Surface Area:	60 m ²	900 m ²
Number of Modules:	48	716
Module Manufacturer:	Sanyo	
Module Wattage:	205 W	
Module Model:	HIP-205 NKHB1	
Inverter Manufacturer:	SMA	
Inverter Model:	Sunny Boy 5000 US	Sunny Boy 4000 to 7000 US
Number of Inverters:	2	22
Array Slope:	35 deg.	0 deg.
Azimuth:	29 deg. East	0 deg. East

Annual Performance

Total System Performance: 1,076 kWh/kW

Financial

System Cost (including tax): \$1,850,000

Grants: Unknown.

Annual Income: \$121,523**

Cost per kW (excluding external funding): \$11,337

Simple Payback (excluding external funding): 15.2 years

Environmental Benefits

Estimated emission reduction: 31.5 tonnes eCO₂/yr***

*Portion of carport array under FIT contract.

**Based on FIT rate of 71.3 ¢/kWh

***Based on 0.187 kg eCO₂/kWh