
Green Energy Introduction

The government of Ontario triggered a barrage of activity in the green energy sector, when it launched its new Feed-In-Tariff (FIT) program. The FIT program provides financial incentives to residential, commercial and industrial tenants and landlords to incorporate green energy (solar, wind, biomass, water) in their property or developments. One green energy source to receive significant attention from the FIT program is solar energy. Alternative energy such as solar photovoltaic presents several benefits to real estate owners and occupiers including:

- The ability to generate revenue from an otherwise passive property type such as roofs, parking lots and empty land
- Promotes independence from fossil fuels using clean energy
- Predictable energy cost that you can budget
- Works towards achieving Leadership in Energy and Environmental Design (LEED) points in new buildings and retrofits
- Demonstrates a commitment to sustainability and the conservation of energy by user

Ontario FIT Program

On October 1, 2009, the [Ontario Power Authority](#) launched Canada's first Feed-in Tariff program where participants (building owners or tenants) are paid a fixed price for the renewable energy they generate. The approved types of energy include biomass, biogas, landfill gas, on-shore and off-shore wind, solar photovoltaic (PV) and waterpower. Ontario's FIT rates are among the highest in North America and are meant to assist the Province reduce its dependency on coal energy. The program rewards users in urban areas to generate energy that will feed back into the grid, thereby reducing high costs of grid improvements and assisting with peak energy demands in the summer.

What is the FIT Program?

The feed-in tariff (FIT) program was created to empower the green economy and offer investors greater confidence in the profitability of renewable energy projects. Born out of the [Green Energy and Green Economy Act, 2009](#) (GEA), the FIT program was passed into law on May 14, 2009 by the Ontario government and was unveiled one week after U.S. President Obama signed into law the America recovery and Reinvestment Act of 2009 that set aside billions of dollars to promote the build-out of new renewable energy capacity to make the U.S. more energy efficient. There are several examples of FIT programs around the world. The most notable pioneers include [Germany](#), France, Italy and the Czech Republic, [California](#), [Vermont](#) and [Washington](#).

Solar Projects in Ontario Today

So far, 510 projects are to be built in 120 communities across Ontario, ranging from 10 kw to 500 kw. Owners who have at least 40,000 square feet of useable rooftop space can lease the rooftop to a solar systems supplier for a yearly fee on a 20 year contract. Because each of these projects is less than 500 kwh the panels can be connected to Ontario's electricity grid without detailed impact assessments.

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Solar Costs in Ontario

Prices paid for renewable energy generation vary by energy source and take into account the capital investment required to get a project up and running. For example, landfill gas generation pays the least at 10.3 ¢/kWh and solar photovoltaic power pays the most from 44.3 ¢/kWh to 80.2 ¢/kWh. FIT contracts are for 20 years with the exception of waterpower which has a 40 year contract. The old rates were 42 ¢/kWh, the new solar FIT rates for Ontario solar rooftop projects are:

- Less than 10 kW - 80.2 ¢/kW
- 10 - 100 kW - 71.2 ¢/kWh
- 100-500 kW - 63.5 ¢/kWh
- Greater than 500 kW - 53.9 ¢/kWh

Note a new rule requires developers must meet a certain percentage of made-in-Ontario goods and labor at the time their FIT project reaches commercial operation. For solar projects larger than 10kwh, the requirement is 50 percent today and 60 percent on January, 1 2011.

Consider a 500kW solar roof system:

The FIT rate paid by the Province for a 500kW system is approximately 65 ¢/kWh of energy channeled back into the grid. The annual energy yield for a 500 kW system is about 700,000 kWh which represents an annual income of \$457,000 to the solar provider or solar equipment owner. If you extend the income over the entire 20 year FIT contract, the total revenue for the project is approximately \$9.14 million for a roof panel area of 70,000 square feet. Typically, a solar developer will pay about 8% of revenue or approximately \$0.50 per square foot per year of roof area, resulting in a passive income of \$35,000 per year to the landlord. Therefore the total rent received by the landlord over the 20 year FIT contract is approximately \$700,000.

Solar Panel Who's Who?

- 1) **The Solar Service Provider** is your project coordinator and the company you hire to make your project happen.
- 2) **The Financing Partner** is a lender (usually a bank) who may fund the construction of the solar system and also provide a long term loan to the project.
- 3) **The Building Owner/Tenant** (you) is the person who agrees to install the solar panel system on your property and either collect rent from the solar service provider in exchange for the use of your rooftop or collect money from the utility (if you own the system) from selling the electricity you produce back into the grid.
- 4) **The Utility** supports the project by connecting the solar equipment into the grid and provides credit for any solar power sent back through the meter to the grid (called net-metering).

How to Start a Solar Project: Two Ways

1. Building Owner Financed and Constructed: If the building owner wants to own the entire solar operation, he or she must be willing to make the necessary investments in the project including equipment, installation and construction costs, as well as bear all the operating and maintenance costs including applicable fees and charges applied by your local electricity company. In this scenario, the owner would sell the energy produced from the solar panels back to the OPA and in return, earn income at the pre-determined OPA FIT rates. Advantages to ownership of solar panels include the ability increase building value with the addition of a solar system as an asset to the balance sheet. Owning a solar power system is also a hedge against escalating future energy costs, as it is a means to provide known system costs and free fuel from the sun and less contracting.

2. Solar Panel Purchase Agreement (SPPA)- Project Financed and Constructed by Other Parties:

As a building owner, your organization contracts with a solar service provider that is responsible for financing, designing, installing, monitoring and maintaining the solar project. You do not pay for the installation but instead you lease your roof top to the solar service provider and earn rent per square foot, per year of roof area leased. Your building does not use the energy produced from the solar panels as it is fed back into the grid, but you earn a passive income stream from leasing your roof space. The solar service provider sells the energy from your roof to the utility and is paid by the utility for the power generated from the solar panels.

A second alternative to this option is that the building owner buys the electricity the system generates which your building uses. You make your payments to the solar services provider for the electricity the solar system produces. You determine the level of payment in advance so you know your power costs over the life of your contract. SPPA contracts avoid unexpected price fluctuations because the cost of the fuel is known (the sun is free).

Some solar developers or solar service providers will partner with the building owner so that the owner can receive a portion of the energy revenue earned from the OPA FIT rates, in proportion to the equity the owner invests in the solar system. Other arrangements include solar developers will cover the cost of roof improvements on older buildings in lieu of rent to the owner. What is important to understand that the options are negotiable and are best examined in a case by case scenario so both solar developer and building owner is satisfied.

Example A: Recurrent Energy

Recurrent Energy created an arrangement with ProLogis in Spain where Recurrent Energy leased the rooftops from ProLogis where they will finance, own and operate the solar power systems located on eight of the ProLogis distribution centres. The systems will be connected back to the Madrid and Barcelona grids feeding all the power generated by the solar projects back into the local utility through their Feed-in-Tariff program.

Example B: Loblaw Companies

Loblaw Companies has been approved for FIT applications for rooftop solar installations on 136 of its Ontario stores. The grocery retailer will launch four pilot projects in select stores across the province then evaluate further rollouts. Loblaw will partner with Northland Power Income fund to install the panels on the stores.

How to Have a Successful Solar Project

Step 1: Research current and projected kWh costs for your property: You need to know what you spend now to measure what you will save when executing your solar energy project in the future.

Step 2: Identify potential installation locations for your solar panel program: Account for things like roof replacement if that is a factor that will affect the installation or other structural elements to support the solar panels. To be cost effective, your SPPA project will usually be larger than 100kW. This equates to at least 10,000 square feet of roof space; however, some companies recommend a minimum of 40,000 square feet of roof space for a project to make financial sense. Other potential installation locations include the roof on a parking structure, erecting panels to create a sheltered parking structure or mounting panels in a field on the grounds outside a centre. You may also provide multiple installations sites for an aggregated project by using five buildings of 20kw each. As a building owner, if you know you will be replacing the roof in the near future, it may be ideal to consider starting your solar panel project in combination with roofing maintenance to substantially lower solar installation costs.

Step 3: Find a credible, reliable solar service provider or solar panel manufacturing company. They have relationships and expertise to install panels on a roof. Note that you will be working with this partner for the term of the contract, (15-20 years) so be sure to do your homework and choose wisely.

Glossary

kilowatt (kW) - 1000 watts. This is amount of power that electricity pricing is usually based on.

megawatt (MW) - 1,000 kilowatts or 1,000,000 watts.

kilowatt hour (kWh) - A unit of energy equal to 1000 watt hours. It is a measure of electrical generation or use per hour. For example if a clothes dryer used 1000 watts, it would use 1 kWh per hour.

kilowatt hours per kilowatt (kWh/kW) - Assume you have solar panels rated for 1 kW of capacity, the kWh/kW is the amount of power that you can expect them to generate in a given amount of time. In Ontario over the course of a year, you can expect to generate between 1100 and 1200 kWh/kW (see the PV Potential Interactive map of Canada developed by Natural Resources Canada [here](#)).

More Information

DTZ Barnicke is working with building owners and tenants to partner with solar developers on the Ontario Power Authority FIT program. If you are interested in pursuing a solar panel energy opportunity, for more information on our services, please see our contact information below.

Reading Material and Resources

News Articles:

<http://www.thestar.com/business/article/749441--rush-is-on-to-lock-up-rights-to-flat-gta-rooftops>

<http://cleantech.com/news/4232/ontarios-green-shadow-over-us>

<http://solarchargeddriving.com/going-solar/leasing-vs-buying/264-a-solar-expert-compares-leasing-to-buying.html>

Ontario Power Authority FIT Program:

<http://fit.powerauthority.on.ca/>

Natural Resource Canada Interactive Solar Map:

<https://qlfc.cfsnet.nfis.org/mapserver/pv/index.php?lang=e>

Renewable Energy Blogs/News Sites:

<http://www.renewableenergyworld.com/rea/home>

<http://www.greentechmedia.com/channel/solar/>

<http://www.altdotenergy.com/>

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