

CANADA'S SCIENCE SOURCE SINCE 1970

# EfstonScience

*The Energy & Better Living SuperStore*

# **eSolar** **Innovations**

*EfstonScience eSolar solutions  
combine turnkey integration and  
state-of-the-art technology with  
40 years of customer service.*



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[www.eSolar.ca](http://www.eSolar.ca)

# Now is the time to invest in renewable energy!

In late 2009 Ontario introduced the *Green Energy Act*, with major incentives to help supplement the provincial energy supply with clean, renewable energy. The Ontario Power Authority's new Feed-In-Tariffs (FIT and MicroFIT) have created an unprecedented opportunity to generate profit by selling your solar power to the grid.

EfstonScience offers complete Solar Energy Systems that meet the stringent Ontario content requirements for FIT & MicroFIT eligibility. Our experienced team looks after everything from system design, permits and applications to installation and support — so you can start earning solar income sooner.

Ontario Power Authority Feed-In-Tariff Program

**FIT**

vs

**MicroFIT**

**Systems more than 10kW**  
**44.3–71.3¢ per kWh**  
 Engineering and electrical impact assessments required  
 \$500–\$5000+ fees  
 Approval process: 6–12 months

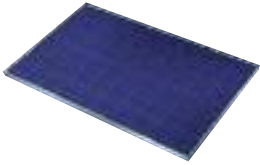
**Systems less than 10kW**  
**80.2¢ per kWh**  
 Streamlined application process with guaranteed approval  
 No application fee  
 Approval process: 1–2 months

## The MicroFIT 10kW Sweet Spot

10kW systems take full advantage of the MicroFIT program's fast-track application, minimal engineering requirements and offer the highest possible rates for your power.

EfstonScience offers components and turnkey solutions for any size FIT & MicroFIT system. Every installation is customized to the unique requirements of the site and structure to maximize your return on investment.

## Components of a FIT-ready Solar Energy System



### Solar Panels

**Crystalline silicon cells convert sunlight into electricity**

EfstonScience uses only trusted brand-name photovoltaic (PV) panels, with a 25-yr power rating warranty.

Many sizes, outputs wattages and trims available.



### Mounting System

**Supports the panels; optional trackers follow the sun to boost output**

Sloped roof, flat roof, ground and pole mounting systems available.

1 & 2-axis tracking systems can boost output by 25%+.



### Inverter

**Converts DC from the panels to grid-ready AC power**

String Inverters work with parallel strings of panels.

Micro Inverters attach to each panel to optimize output – ideal for shaded or multi-angle installations.



### Monitoring

**Web-based tools monitor system performance**

Systems can be monitored remotely from any web browser.

Monitors track system status, power output, income generated, carbon offset, weather data and more.



### Hydro Meter

**Connects your system to the grid**

FIT/MicroFIT systems use a dedicated meter installed by your local power distribution company, who pay you for the power you generate.

Since power is sent directly to the grid, FIT and MicroFIT systems need no batteries and do not affect your existing Hydro meter usage or billing.

### Did You Know? Locally-generated solar power is twice as nice!

At peak times, Ontario must import electricity from Quebec and the USA. Much of this power gets lost in transmission, making it expensive, inefficient and increasing its carbon footprint. Since locally-generated solar power is used immediately by the grid, there is virtually no transmission loss, making it cleaner and more efficient — a double benefit for Ontario.

## The EfstonScience Turnkey MicroFIT Installation Process

### Assessment

**Free preliminary site assessment**

Solar Energy System proposal & estimate

### Site Visit

Engineering review  
 System design  
 Detailed quote  
 Client approval

### Permit & OPA Applications

OPA FIT/MicroFIT application\*  
 Building permit application  
 Electrical permit application

### Installation

Roof upgrades if required\*\*  
 Mounting system installation  
 Panel installation  
 Electrical installation: inverters, disconnect, meter base, breakers

### Inspection

Building inspection  
 Electrical inspection  
 Hydro meter installation

### Power up!

Commission system  
 Accept MicroFIT contract and **start profiting!**

\*FIT projects over 10kW have additional steps, including engineering and impact assessments. Call us for more information, or visit the OPA website at [fit.powerauthority.on.ca/](http://fit.powerauthority.on.ca/)

\*\*EfstonScience will recommend contractors for structural or roofing upgrades

**EfstonScience makes it easy**  
 Our team looks after every step of the application and installation process, to provide you the shortest path to the highest returns.

# 10kW systems offer maximum ROI with all the benefits of MicroFIT

Here are some scenarios illustrating different possible 10kW MicroFIT system configurations. Scenarios based on current pricing, subject to change.



## Ground-mounted with 1-axis tracking

Self-contained Rack n Track system installs quickly and maximized sun exposure

66 x 175W panels		
Avg. output 14,893 kW/year <sup>1</sup> × 80.2¢	\$11,944	
Total MicroFIT income:	\$238,890	
Equipment	\$95,000	
Engineering	\$2,000	
Installation	\$3,000	
Total installed cost:	\$100,000	
<b>Net profit after 20 years:</b>	<b>\$138,890</b>	
A system like this would pay for itself in: <b>7.9 years</b>		

## Rack n Track 1-axis system

1-axis azimuth tracker tracks the Sun from East to West over the course of the day.

Boosts output by up to 25%

Helical Anchors make installation fast & simple.

Sturdy, rust-proof aluminum I-beam construction

Rugged, chain-driven motor drive.



## Fixed ground-mounted

Versatile and robust mounts make installation easy.

60 x 175W panels		
Avg. output 11,417 kW/year <sup>1</sup> × 80.2¢	\$9,156	
Total MicroFIT income:	\$183,132	
Equipment	\$72,000	
Engineering	\$2,000	
Installation	\$6,000	
Total installed cost:	\$80,000	
<b>Net profit after 20 years:</b>	<b>\$103,132</b>	
A system like this would pay for itself in: <b>8.5 years</b>		

## SolarGiant III fixed system

High-strength slide-in module rails provide a rugged PV mounting system that makes assembly and module installation exceptionally simple and fast.

Simple mounting footer design can be used on the most difficult sites and soil conditions with minimal site-preparation.



## Flat roof with ballasted fixed mounts

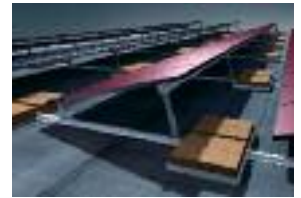
South-facing, non-penetrating ballast mounts pitched 25° and spaced to avoid shading.

52 x 220W panels (after spacing) 2400 ft <sup>2</sup>		
Avg. output 12,360 kW/year <sup>1</sup> × 80.2¢	\$9,913	
Total MicroFIT income:	\$198,262	
Equipment	\$63,000	
Engineering	\$5,000	
Installation	\$12,000	
Total installed cost:	\$80,000	
<b>Net profit after 20 years:</b>	<b>\$118,262</b>	
A system like this would pay for itself in: <b>7.5 years</b>		

## Ballasted mounts

Ballasted mounts don't penetrate roof membranes, are quick to install and easy to move.

Ideal for newer roofs that meet structural engineering requirements.



## Sloped Roof

South-facing sloped roofs are ideal candidates for a solar energy system.

60 x 175W panels	850 ft <sup>2</sup>	
Avg. output 11,435 kW/year <sup>1</sup> × 80.2¢	\$9,171	
Total MicroFIT income:	\$183,424	
Equipment	\$57,000	
Engineering	\$2,500	
Installation	\$10,500	
Total installed cost:	\$70,000	
<b>Net profit after 20 years:</b>	<b>\$113,424</b>	
A system like this would pay for itself in: <b>7.25 years</b>		

## Quick Mount PV

Quick Mount PV aluminum roof shingle is an all-in-one watertight flashing and mount that quickly and easily installs on shingled, sloped roofs with no cutaway required.



## Clean, zero-emission power

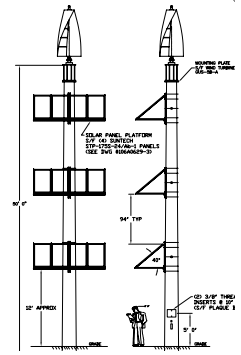
Over 20 years, a 10kW solar system will offset more than 153 tonnes of CO<sub>2</sub>

<sup>1</sup> Est. average output in Southern Ontario as calculated by Natural Resources Canada RETScreen ([www.retscreen.net](http://www.retscreen.net))  
Output estimates are averaged over the 20 years of the MicroFIT contract

# ePole: Hybrid Wind+Solar Off-Grid LED Streetlight

The EfstonScience ePole is a breakthrough in environmentally responsible street lighting. Combining wind and solar co-generation, integrated batteries and charge controller and ultra-high efficiency LED lighting, the ePole is a completely self-contained, off-grid solution that requires no additional wiring or trenching.

Compared to traditional streetlights, each zero-emission ePole will save thousands of dollars in installation, electricity and maintenance costs and offset more than 12 tonnes of CO<sub>2</sub> over its 30-year lifetime.



Also available:  
custom-designed ePole  
hybrid wind+solar pole

The self-powered ePole costs nothing to operate, saving hundreds of dollars in electricity costs every year.

Self-contained, direct-burial spun-concrete pole requires no trenching, base or wiring.

Ultra-efficient LED bulb produces as much light as sodium vapour bulbs with 1/10 the power consumption.

LED bulbs last for 70,000+ hrs – that's every night for 24 years!

Programmable sensors for custom scheduling.

Innovative Vertical Axis Wind Turbine design is efficient, silent, and wildlife-friendly.

Rugged all-weather design handles snow, ice and 130+ kph winds.

Multiple colour and style options available.

## The EfstonScience Advantage

**Simplicity.** EfstonScience's turnkey Solar Energy Systems include everything from site analysis and system design to engineering, installation and support. Our team of qualified installers and electricians will look after all technical and administrative details, permits and applications.

**Reliability.** The EfstonScience Service Commitment means lifetime technical support on your system. With more than 40 years in business, you know EfstonScience will be there for you down the road.

**Selection.** As Canada's largest science retailer, we have access to the full range of solar products on the market. In addition to FIT & MicroFIT systems that meet the OPA's strict made-in-Ontario guidelines, EfstonScience offers off-grid, wind power and hybrid wind+solar solutions.

**Experience.** Our passive-solar heated SuperStore is home to the eSolar Resource Centre, with functioning solar and wind power systems on display, as well as LED lighting, educational kits, green reference books and innovative eco products. Come in and see it for yourself!

Partnering with the knowledgeable team at EfstonScience will ensure that you get the most from of your solar investment.

## Now is the time to profit from solar power

Visit [eSolar.ca](http://eSolar.ca) to request your **FREE** site assessment

Visit [www.eSolar.ca](http://www.eSolar.ca) to find out more about how solar energy can earn you a guaranteed income for 20 years. Fill out our simple online eSolar Inquiry Form and we will get back to you with a free preliminary assessment of your project.

You can also visit the EfstonScience SuperStore to check out the hands-on solar and wind power displays in the eSolar Resource Centre and talk with one of our knowledgeable solar energy specialists.

Of course, you can just call, or email [FIT@eScience.ca](mailto:FIT@eScience.ca); we are happy to answer any questions you might have. That's just good, old-fashioned customer service — the kind we've been delivering for the last 40 years!

for more information, visit

[www.eSolar.ca](http://www.eSolar.ca)

EfstonScience  
40  
years



EfstonScience  
The Energy & Better Living SuperStore

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