

3G Energy MicroFIT Solar Systems Frequently Asked Questions



Does the 3G system meet the OPA Ontario Content Requirements?

Yes, the Ontario content of the system currently exceeds 40%. The power inverters, racks and tilt controller are made in Ontario. Beginning in 2011 the PV panels will also be made here. We warrant the content requirements in our sales contract.

Does 3G have General Liability Insurance?

Yes, we carry Commercial General Liability Insurance of at least \$2 million. We also verify that all our subcontractors have adequate insurance.

Is 3G a member of any Industry or Professional Associations?

Yes, we are a member of the Canadian Solar Industries Association (CANSIA) and the Ottawa Better Business Bureau. In addition one of our staff is a director of the Ontario Sustainable Energy Association. .

Do your installers meet all the safety, licensing and certification requirements?

Yes, our installers are experienced, insured and certified as required.



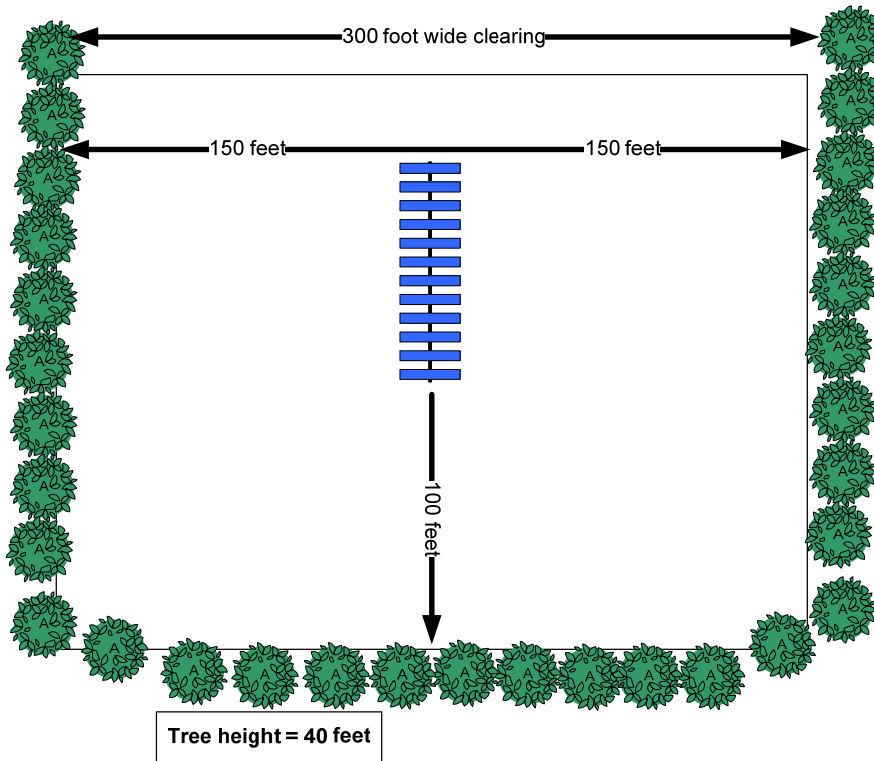
Does 3G arrange for all approvals and permits as well as look after connection arrangements with the local utility?

Yes, 3G offers a turnkey solution whereby we take care of all the applications, permits and regulatory requirements.

How Much Land Is Required?

The ideal site is flat, dry and free of shade. The system's footprint is about only about 1,600 square feet, we generally recommend a clear site of 2-3 acres because the surrounding land must also be free of trees and other tall structures which can shade the panels and reduce their output. We recommend 150 feet of cleared land to the east and to the west, and about 100 feet of cleared land to the south. Shorter clearances may cast shadows on the unit and reduce the energy output.

**Forested Land Scenario –
Recommendations for Setbacks**



How Long does it Take to Get One Installed?

Due to back-lags at the OPA, the wait times are now 4-6 months. We hope that the wait times will be reduced to 2-4 months by the end of 2010.



2 ways for you to Participate: Power Producer or Landlord

You can buy a system from us for \$90,000 and we will do all the permits and applications and install the system ready to deliver power. We can arrange financing through a major Canadian bank (subject to standard credit approval terms). 10 year loans of up to \$50,000 are available and the interest rate is competitive.

Alternatively we will lease 2-3 acres from you for 20 years (with two 5 year renewal options) and pay you an annual rental. If we install our own system on your land, we will monitor it remotely and perform maintenance once or twice per year. Our land lease contract gives you an option to purchase the system, commencing in Year 4. The price is based on the amount of power revenue expected over the remainder of the initial 20 year contract.

Siting Decisions

The ideal site is flat, dry and free of shade. Nearby trees or shrubs maybe OK if they offer a visual barrier and create privacy without shading the system. Access to the power line at the roadway is important and our price assumes that we can locate the system within 200 feet of the existing meter. Greater distances may attract additional charges but we will identify this at the preliminary site visit. We also need to avoid septic fields and other underground services.. You should be able to continue using most of the surrounding land as before but we may need to erect a fence to keep out animals and protect against machinery.

Will the System Increase my Property Taxes?

There is some uncertainty whether MicroFit solar installations will increase property taxes. We expect that if the Municipal Property Assessment Corporation (MPAC) does decide to assess these installations, they will do so on the basis of a fixed value per installed kilowatt which has been their approach with utility scale wind turbines. Applying the same formula to the Can-Track system would add only \$400 to the assessed value of the property.

What is Tracking Solar System?

A PV solar system whose panels are moved to follow the sun's position in the sky is called a "tracking" system, or a "tracker". The Can-Track system sold by 3G sells is manufactured by UC Solar Generation of Brockville. It uses a simple hydraulic arm to rotate the unit around its horizontal axis during the day. This motion keeps the panels at the optimal angle to the sun as it moves from east to west across the sky.

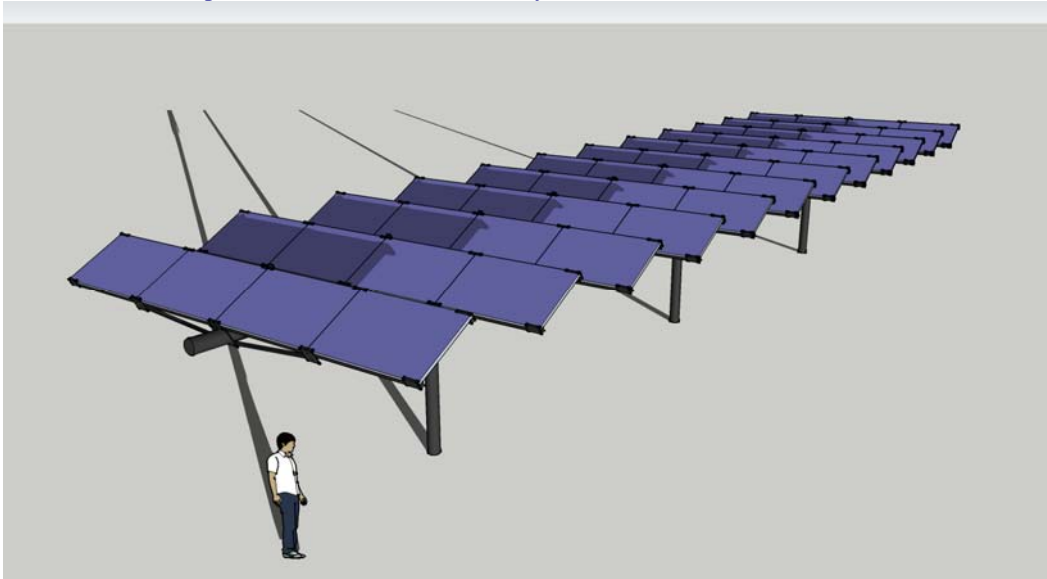
The point of the tracking system is to enhance energy capture, and compared to a fixed mount system where the panels don't move, the tracking function can increase energy capture as much as 25%.



Check out the 3G's shade modeling results shown below.

Early Morning Shade on a Fixed Mount PV System

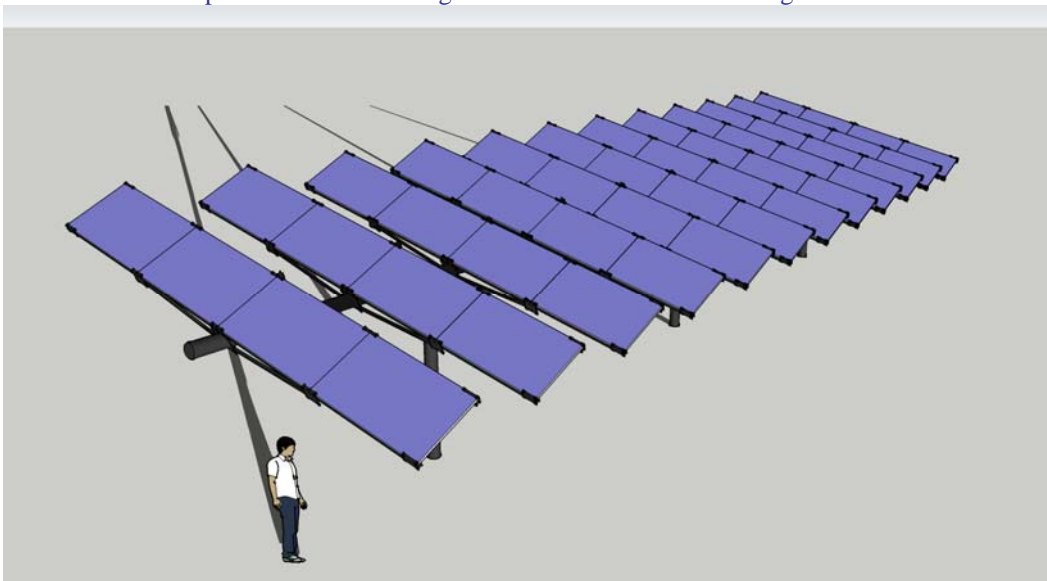
Note: the panels are mounted horizontally and don't tilt



See the shaded panels?

Early Morning – No Shade on a Tilted PV System

Note: the panels are tilted 15 degrees toward the sun and shading is eliminated



Shade is eliminated



Is There a Reduction in My Home Energy Bills?

No, the system is separately metered from your home system. This ensures that you are paid for 100% of the output of your Can-Track system. Your house consumption account remains un-affected. So even though your house might consume the energy produced by the solar system, the accounting of the sale and purchase remains separate.

The economics are simple – you can sell the energy from the Can-Track system at 80.3 cents and buy electricity for home use at about 8-12 cents. Clearly it is better for you to sell all the output from the Can-Track system than use it for yourself.

How does it work?

A solar cell generates electricity using the potential difference that arises between certain materials when they are exposed to electromagnetic radiation (i.e. sunlight). Electrical output is produced in a direct current (DC) format which must be converted to alternating current (AC) before it can be used by the power grid. The conversion is done by a power inverter.

The output of a solar panel varies with the intensity of the sunlight, and operating temperature. Shading of any of its constituent cells by clouds or adjacent structures will adversely affect output, corresponding to the degree of shading experienced. In addition, daily and seasonal variations in the azimuth and altitude of the sun, which vary by latitude, will affect output. The combination of these effects can often be counterintuitive. For example, the solar resources in Toronto ON outperform those of Miami FL in the summer (source: CanSIA) because while Miami may experience a greater peak power output, clearer weather in Toronto combined with longer days and cooler temperatures allow the Toronto panels to operate at higher efficiency for longer periods of time, resulting in a higher total energy output.

The tracking system uses a hydraulic piston and pump of a type commonly used in many types of agricultural machinery. They are simple and rugged and easy to repair at most agriculture machinery dealers. The hydraulic unit runs on non-toxic vegetable oil and is controlled by a solid state clock which is programmed to activate the pump at set intervals during the day. These intervals are automatically adjusted throughout the year to accommodate the seasonal changes in daylight.

The Can-Track system uses 48 polycrystalline solar panels and 2 power inverters. The panels are arrayed in 12 rows of four, achieving a total DC power output of 11 KW.

How Long Will the Equipment Last?

PV Panels have no moving parts and do not change chemical composition or consume materials when they produce electricity. As a result they are expected to last 30-40 years.



They do experience a decline in power output over time but this is not expected to exceed 20% over 25 years. Panels and inverters can be individually replaced.

What about warranties?

The panels come with a 2 year replacement warranty provided by the manufacturer. This means that if they don't work during that time they will be replaced.

The power output of the panels is warranted by the manufacturer for 20 years. This means that if they do not produce power at the rate warranted the manufacturer will make up the loss of power at the contract rate.

The inverters come with a 10 year replacement warranty.

The tracking system has a 6 year mechanical warranty.



What Happens After the 20 Year FIT Contract?

We cannot tell what the pricing or regulatory arrangements will be in 20 years but we are confident that there will still be a market for solar power and you will be able to continue to sell the power at some price. The basis of our confidence is that historically the demand for electricity has risen over the long term which provides an incentive to keep existing generation technologies operating even as new technologies are introduced. As an example we note that many hydro-electric generation facilities are still in operation and making money after more than 100 years of operation despite the advent of new technology such as nuclear, wind and solar generation.



Who Are the Installers?

UC Solar Generation does our installation work. They have installed over 30 systems in the last 8 months. They hire local certified electricians for the hook-up work and the hydro company uses their own contractors for the electrical connection and meter installation.

Are Permits Required? A MicroFit installation does not require an environmental assessment or zoning approval. Under the Ontario Building Code ground mounted solar installations are “designated structures” and as such do not require a building permit. A permit from the Electrical Safety Authority is required before the facility can become commercially operational. 3G will make all the required permit applications on behalf of your installation.

Maintenance and Insurance

3G and UC Solar Generation will monitor and service the system. A service package that includes insurance coverage is being created. Details will be available shortly.

Performance Claims?

3G expects that the Can-Track systems will generate an average of \$1,000 per month and may even exceed \$1,400 per month in some cases. So far 2010 has been unusually sunny and output has exceeded expectations but you should be aware that output can vary 10-20% from year to year. .

Who is 3G Energy?

We have been in the renewable energy industry for 9 years. Check out our website at www.3g-energy.com. We are project managers and renewable project developers. We work with strategic partners, such as Canadian Solar Energy Inc and major Canadian finance institutions to create successful projects and system offerings.

Should I Buy Now or Wait?

The current solar tariff offered by the Ontario Power Authority is one of the highest in the world and is designed to kick-start the industry in this province. Experience in Europe suggests that governments often reduce the tariff once the industry becomes well established. While most industry observers expect that the cost of solar power will continue to fall, these gains may be offset by tariff reductions.



How Do I Get Started?

Call Graham @ 613-769-1300 or Brian @ 613-851-5374 and tell us about your property: where are the buildings, power lines, electrical meters, water well and septic systems? Is it hilly or flat? Is the soil rocky or wet? Are there trees nearby and how high are they? If your property sounds suitable, we will come and do an on-site inspection. Once you give us the go ahead, we will take care of all the applications.

