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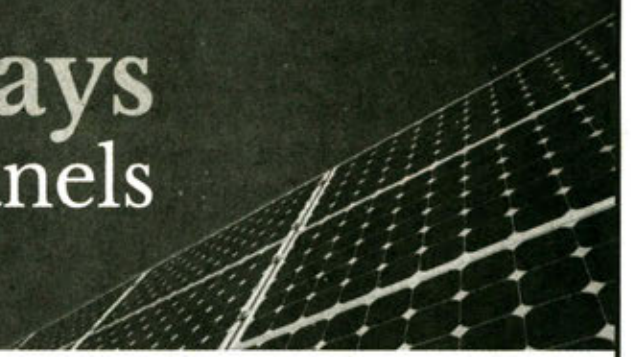
Sunny Days for Solar Panels



As a multi-residential rental building ages, maintenance costs rise. Governments prohibited the passing of certain costs to their tenants and rent controls continue to reduce profitability. Landlords are increasingly faced with the challenge of keeping costs down and finding innovative ways to create supplemental income to mitigate large capital expenditures.

The roof can offer various revenue-generating opportunities, such as billboard signage, cell towers, green gardens and solar power generation.

Much has been written about Ontario's FIT (Feed-in Tariff) and microFIT incentive programs, North America's first comprehensive, guaranteed pricing structure for renewable electricity production. It offered stable prices under long-term contracts for energy generated from renewable sources, including solar photovoltaic (PV), wind, water, biomass, biogas and landfill gas.

Generally, costs associated with the purchase and installation of renewable energy property is considered capital costs of depreciable property, using capital cost allowance (CCA) in Class 43.1 (30%/year) or 43.2 (50%/year). These classes provide an accelerated CCA rate for specified clean energy generation equipment. There are a number of variables involved. This article specifically addresses the installation of solar panels on the roof of a building in southern Ontario, Canada.

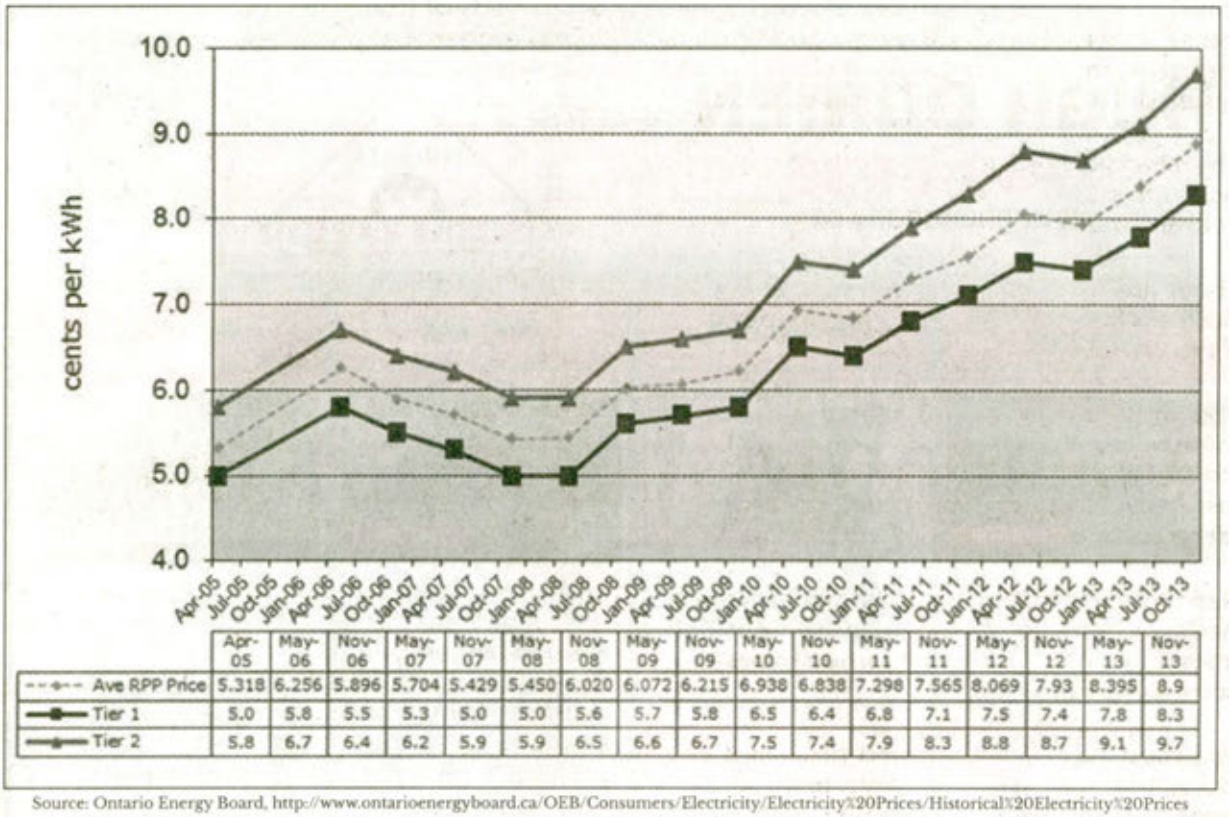
In southern Ontario, for a mid-size building with southern exposure, a solar PV system requires around 850 sq ft of sloped roof and a $30,000 to $40,000 capital outlay (plus interest/leasing costs) 10 kW AC rooftop system, down from $75,000 only three years ago.

Government incentives have also dropped to around $0.40/kWhr on a twenty-year contract for residential solar systems, probably because of high demand. According to the Ontario Power Authority website (Apr/2014) there were 13,015 rooftop solar applications, of which 4,487 (34.5%) were approved and 3,871 (29.7%) were unsuccessful. There were 169 ground-mount PV, 10 hydroelectric, 35 wind, and 0 bioenergy applications.

Average gross income of our example solar generation system is estimated around $4,800/yr; over 20 years equals $96,000 versus a $35,000 cost of acquisition. You'll recover the initial investment in 7 to 8 years, and the income over the remaining term is arguably 90% or more bottom line profit.

Having a profitable solar system in Ontario is directly tied to system performance, and the yearly averages for solar radiation in your location. Accurate data on solar system performance is readily available from reliable sources. You'll be surprised which municipalities get the most sunshine. Average hours of sunshine between 1981 and 2010 ranged from 1,567 Sherbrooke, QB (40% sunshine) to 2,396 in Calgary (52%). Other municipalities:

St. John's	1,633
Toronto	2,066
Tokyo	1,965
London, ON	1,793
Saskatoon	2,268
Berlin	1,837
Vancouver	1,938
Aswan, Egypt	3,863
Paris	1,700
Montreal	2,051
El Paso, Texas	3,763
London, UK	1,494



	Apr-05	May-06	Nov-06	May-07	Nov-07	May-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	May-12	Nov-12	May-13	Nov-13
Ave RPP Price	5.318	6.256	5.896	5.704	5.429	5.450	6.020	6.072	6.215	6.938	6.838	7.298	7.565	8.069	7.93	8.395	8.9
Tier 1	5.0	5.8	5.5	5.3	5.0	5.0	5.6	5.7	5.8	6.5	6.4	6.8	7.1	7.5	7.4	7.8	8.3
Tier 2	5.8	6.7	6.4	6.2	5.9	5.9	6.5	6.6	6.7	7.5	7.4	7.9	8.3	8.8	8.7	9.1	9.7

Source: Ontario Energy Board, http://www.ontarioenergyboard.ca/OEB/Consumers/Electricity/Electricity%20Prices/Historical%20Electricity%20Prices

There are powerful reasons for considering so'ar power, but equally compelling reasons to be fully aware of all the implications before committing to such a project.

Pros:

- The 20-year income stream and full repayment of the investment in the first half of the contract term remains a major benefit.
- Electricity costs have sky-rocketed. In Ontario, electricity prices have increased 63.3% over the last five years, from $0.0545 in May/08 to $0.0890 in Nov/13. Ontario rate increases have far outpaced Stats Canada's CPI index ("inflation rate").
- The reason this is a positive consideration is that electricity prices are unlikely to ever decrease, so when your contract expires in twenty years, your system can still supplement your building's energy consumption, reducing your operational costs.
- No moving parts and low maintenance make solar PV systems very reliable and long lasting. Some PV systems are still operating after 40 years.
- Solar panels act as a kind of quasi-second roof that can possibly lengthen the lifespan of your property's roof.
- You're making a personal and direct contribution to clean sustainable energy for the community and the world, with less reliance on controversial nuclear power and undesirable fossil fuel power.
- You have sustainable, renewable energy with very little impact to the environment.
- Today, solar-generated electricity can't be stored. However, I believe that in less than twenty years, on-site storable energy will fundamentally transform the solar-generated electricity business model for the better.

Potential Cons:

- If your tenants are paying their own electricity costs, the business case becomes much less attractive for just the "common area" heating and lighting costs.
- Tenants will complain to landlords first and seek properties where electricity is inclusive in the rent.

- If most of your common area electricity expense is heating water (laundry and/or rent inclusive), then a UV-based solar water heater system is likely a more cost-effective solution

- The effects on the life span of solar panels exposed to extreme weather elements are not yet well understood.

- There are a lot of young companies in the business and a 20-year warranty is worthless if the company is gone in five years.

- You must determine whether the building infrastructure can carry the weight and spot loads (eg. gusts of wind 'pulling" on the panels, heavy snow accumulating on a much larger surface area of panels and rooftop, etc.).

- Repairing the roof after a solar panel system has been installed can be expensive. Consider installing a new roof at the same time as the solar panel installation.

- You must have a dry, covered place, not exposed to the weather elements, to install the large inverter device, measuring perhaps 6' high x 6' long x 2' deep.

- Make certain the racking system that is affixed to your roof is properly installed and doesn't' create water and stress-related (wind, storms, etc.) problems later on. Be certain, for example, that bolts that breach flat roof membranes are hermetically sealed. Better still, find a racking system that doesn't require it to be bolted down onto the roof; maybe it can be simply 'weighted" down, although this factors into stress load considerations.

- Make certain your insurance will cover all damages; for example, high-force winds tear panels off your roof and damage, not only your property, but someone else's (or they injure someone).

- Solar panels are constantly improving. It is possible that panels in five years will be much more efficient. It would be great to replace existing panels with more efficient ones without replacing the racking system that holds them in place.

- Visit the Canadian Revenue Agency webpage for information regarding potential tax implications of owning a microFIT project. Your property taxes could be affected. Also, if the entire property was sold, a reasonable portion of the sale price must be allocated as proceeds of disposition of the renewable energy property and reported to Canada Revenue Agency (CRA), which may result in a 'recapture' into income of any CCA claimed on the property or system.

- Make certain you contact your electricity retailer to ensure that by entering into a microFIT contract, you will not be violating the terms and conditions of your retailer's contract.

- Solar generation competes with rooftop green initiatives for roof real estate. Solar panels need to find compromise and balance with trees and gardens. Each addresses important environmental concerns and each has distinctive and sometimes material pros and cons. However, 'green' is often a euphemism for increased costs. Landlords faced with major capital costs are likely going to give the highest priority to the use that makes the best overall business sense, with return on investment generally being a major factor.

- While the list of negatives outnumbers the positives, the weight of the positive attributes, perhaps most importantly the seemingly uncontrolled price hikes, are a pivotal consideration in determining the long term net value of solar-generated electricity to rental property owners.

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