



To the Editor:

This is the text of a speech delivered Wednesday, September 15, at BOMEX 2010, by Oleg Popovsky and Bryan Bentrott. Editors and reporters are welcome to publish excerpts of the speech, free of charge, so long as the source is cited. For more information, please contact Angie Forster at 647.258.9077 or aforster@sunedison.com.

I want to thank all of you for coming this morning, and for your interest in Solar. I am Oleg Popovsky, business development manager for SunEdison

During this session we will provide you with the key points you need to look at when you are considering a solar rooftop installation.

After my presentation, I will introduce Lisa Borsook, Managing Partner, with WeirFoulds LLP, who will speak about the legal considerations of solar installations. And after that, we will both answer any questions.

So let me start by talking about the things you need to know before you go solar.

Some are financial – you CAN maximize your revenue in the short and long term. Others points are focused on protecting your roof.

Off the top there are a range of reasons to go rooftop solar

Environmental Advantages

- Creates clean, renewable energy

Social Advantages

- Sustains and supports the health of future generations
- Gives your company a good public image
- Creates good, local jobs for the new energy economy

Revenue Generation

And of course, pursuing a greening of your energy supply actually makes financial sense. Your 50,000 square foot rooftop can make you easily over a million dollars in lease revenue over its 20 year life.

Whatever your reasons, when done correctly, rooftop solar installations are too valuable an opportunity for companies such as yours to waste.

Because of government incentives called the Feed-in Tariff or FIT, Ontario is one of the most lucrative locations in the world to generate solar. It's no wonder that there are hundreds of new solar companies starting up in Ontario since the FIT program was launched a year ago.

But there's a downside to this as well. With all these new companies, there is a lot of misinformation about solar and its simplicity. During these early stages of solar development in Ontario you want to make sure you use a developer that has actually built system, has a track record, monitors their systems, and has clear path to financing the projects.

Ontario isn't the first solar rush that we at SunEdison have been witness to. I'm here today to share some of the lessons we have learned. Our goal is to ensure that going solar is a positive experience for rooftop owners such as yourselves and that solar is an important part of Ontario's energy mix.

Let me talk a bit about how we've gained our expertise. As an organization with over 380 installations around the world, SunEdison is the largest North American solar energy services provider.

We are full-service, providing everything from development, construction, financing, to owning and operating solar power plants. And we've done it not just in Canada, but every continent except Australia and Antarctica. By the way, SunEdison is owned by MEMC, a Fortune 1000 and S&P 500 company.

Some of our rooftop customers include Staples, Walmart, Whole Foods and locally, Remington, LaSalle, CanFirst, and announced this week, GE Capital. We are the proud builders of the first utility scale farm in Canada – called First Light is located near Napanee Ontario.

But Solar installations are complicated.

Don't let anyone tell you differently.

I'd like to introduce Bryan Bentrott who has been with SunEdison for over four years and has actively been involved in development of projects in California, Connecticut, New York, and Ontario.

So let's start with the 5 most important things you need to think about and be aware of, before you commit yourself and your building.

Does your prospective solar partner have a strong track record of developing solar installations?

Sounds pretty basic right? But very few installers across North America actual experience installing a commercial size system.

Successful solar is more than slapping up panels onto to a roof.

There are rooftop warranties to consider, tenants to keep happy, and at the end of the day solar isn't your primary revenue source and shouldn't become your primary headache.

Your solar contracts will have a 20 year term. Going with an established provider increases the chances that your lease payments will be made on time, your project will be properly sized, and your payments will be made for the full 20 year term of the Feed-in Tariff (FIT) agreement.

Permitting, interconnection, structural constraints, optimizing production, a company that has faced these issues before will be more prepared to ensure that your projects and your payments start on time.

I have been surprised at the number of solar meetings we have sat through and the number of solar RFPs we have reviewed where previous installation experience has not considered a top priority.

When it comes to choosing the right solar provider, experience is key!

The second and related consideration: How do they manage their supply chain?

Although rooftop solar isn't new, the supply chain that services it is.

Globally, the solar industry's supply chain is in its infancy, so understandably most companies are experiencing a steep learning curve when managing supply risks. Provincially, the curve even steeper.

This will become an even greater issue under the new regulations that come into play next year that will dictate 60% domestic content for solar systems built under the FIT. Panels, inverters, and racking will need to be produced locally. Sourcing components required for solar energy installations will become an issue for many solar providers in Ontario.

You really need to ask about their ability to source materials for your installation and be skeptical. Where are they specifically sourcing the components needed for your installation? We've seen a tremendous number of projects within Ontario undergo delays or become uneconomical because providers have assumed they could buy materials easily.

Consideration #3 is determining your installer's ongoing energy production performance.

In other words, how much energy is your rooftop producing? How will your solar provider track this performance?

There is a big focus in the industry on \$/W installed cost. Yes, this is important, but how the asset performs is equally, if not more important.

You want a provider with a track record of maximizing system performance.

Can they deliver the right PV system design to maximize generation from your rooftop within its structural limitations?

Many solar energy providers use the same design time and again. Not all rooftops are the same, which means that care needs to be taken to ensure that the best design is created for you. Your provider should maintain relationships with several solar industry manufacturers and choose the design and related technology for each and every site. Having multiple technologies

also ensures that your installer is not held hostage to pricing or timelines of panel and inverter suppliers that may impact your projects timeline.

Do they have a comprehensive solar monitoring system?

Knowing how well your rooftop is performing is key to your project's success.

Has the company actually monitored a solar system before and what is their track record? Again, the installed \$/W is important, but if monitoring is lax or service poor, then it is irrelevant how cheaply they installed the system or how much they promised in lease payments. There are 2 criteria to assess monitoring – what data do they collect and what do they do with it.

At a minimum data should be available at 15 minute intervals and can be displayed in daily, weekly, monthly, annual or just about any way you want it.

A system should allow customers to monitor insolation rates, ambient temperature, and cell temperature at any individual sites. For example, SunEdison's monitoring program called SEEDS is collected in 1-minute intervals and is available through our customer portal Client Connect.

Client Connect uses weather information and system capacity to display System Expected Energy, Actual Energy, and Operational Performance Ratio.

By the way we have a Client connect demo running at our booth if you are interested in checking it out.

Assuming a company collects all this data, the next step is to use it to maintain and improve system performance.

So, have they got automatic triggers that provide alerts when there are inverter faults, system outages, communication errors, or other issues? And what happens when these alerts are triggered. Can they diagnose and fix problems remotely?

Dispatching a crew every time there is an issue with a system is expensive, and is an additional headache for your property manager, so this remote ability is key.

Some companies have no monitoring systems and some companies buy them off the shelf. For those with no monitoring system, you will only find out that your system isn't performing when the Ontario Power Authority stops paying you.

Could you imagine going back to your senior management team a year from now to tell them that the business case you presented, which was suppose to easily add revenue is now only providing 70% of what was expected and is going to take several more years than expected to pay off.

Now for my shameless SunEdison plug....our technicians currently monitor over 380 commercial-size PV systems totalling more than 150MWs of capacity globally. Our fleet

operates at 99% uptime and 108% of forecasted production. Add this together and you have a system that is performing 7% better than expected.

Now 7% may not seem like a lot, but overtime it adds up.

Imagine going back to your senior team or CFO to tell them that the business case you presented a year ago is performing better than expected and the investment will be paid off sooner! Now who wouldn't like to have the conversation? I know I would.

You need to ask your prospective supplier whether they have actually installed a system, you need to ask whether they have actually monitored systems before and ask them for verifiable data on how their fleet has operated.

The next thing you need to do is evaluate your solar energy provider's maintenance strategies.

As Lisa will likely touch on, knowing how your provider plans to deal with snow and making sure they have a regular maintenance schedules ensures proper care of your solar system and performance is maximized.

The fourth consideration is: Know the expected solar production rates for your area.

A solar system produces energy based on the average levels for any particular area.

So for example, a site in Timmins could not be expected to produce the same levels of energy as one located here in Southern Ontario. These energy baselines are predetermined by several government sources and should be used by solar energy providers when calculating accurate expected output of a given system.

Unfortunately, some providers will exaggerate production estimates associated with a particular product or system – we've heard all sorts of numbers being used. Again, many questions come to mind. What is their source for their data? Has a 3rd party verified it? Do they have actual production data to test their assumptions against? Does their model accurately reflect losses due to snow, dirt, or other issues? Do they understand the losses associated with inverters and other technologies? And where is their data coming from – best guesses, industry averages, their own experience....

I know which one I would prefer.

The fifth consideration and I expect this is a big one for all the Building Managers in this session is

Don't allow unproven racking technologies on your roof and make sure they incorporate your other business needs.

There is a risk of voiding roof warranties with unproven mounting technologies. Ensure mounting structures are pre-approved by your roofing manufacturer and that they will uphold manufacturer warranties.

Providers should use the roofing supplier that carries the warranty for your roof whenever possible to ensure all roof warranties are maintained.

Additionally, your solar installer should provide workmanship warranties for their system (PAUSE) and inspect the roof and rooftop mounting structure on a regular basis as part of their preventative maintenance program.

A proper solar energy design should ensure that access is mapped out to rooftop equipment – to make it just as easy for your facilities manager as it was before.

In many ways this next and final point should be the number one consideration. Find out about your solar provider's financial partners.

How does the prospective installer intend to finance the project? Similar to issues with the supply chain, gaining financial backing for solar energy projects is not easy.

When assessing a solar installer for your renewable project, make sure you choose a vendor with a proven record of providing predictable, long-term returns for investors. Find out which financial institutions are partnering with your provider? How do they plan to secure new project capital? Ask yourself if they have a solid history of financing projects.

Again, solar isn't simple and financing is likely the most difficult aspect about it.

If you are not aware, these deals are highly leveraged – 70, 80, and even has high as 90% debt. The duration is 15, 17, and sometimes even 20 years in tenure.

This simply isn't something that many banks will provide.

This may sound scary but this is why you want to work with a solar provider who has experience.

So existing relationships are key and you know, just as in real estate, that good relationships only come through previous successes and a demonstrated track record. With thousands of projects and developers around the world to select from, lenders are very careful about who they want to work with. And you should be too.

Another thing to consider is a vendor's commitment to bringing green jobs to your community. SunEdison has already moved our racking manufacturing to the province and the first pieces will be rolling of the line in Scarborough within weeks. Altogether, SunEdison will be creating several thousand green jobs in this province. This is something we are very, very proud of.

In conclusion I want to remind you that Ontario is the best place for you to be doing rooftop solar. It would be foolish not to take advantage of this fabulous opportunity.

It's going to take a little work, and as I have outlined there are a number of questions you need to ask your vendor.

But SunEdison's slogan for years has been "simplifying solar" and that's what we have been able to do for our partners in Canada, the United states and around the world.

Thanks for your time today and I would like to welcome up my co-presenter, Lisa Borsook.