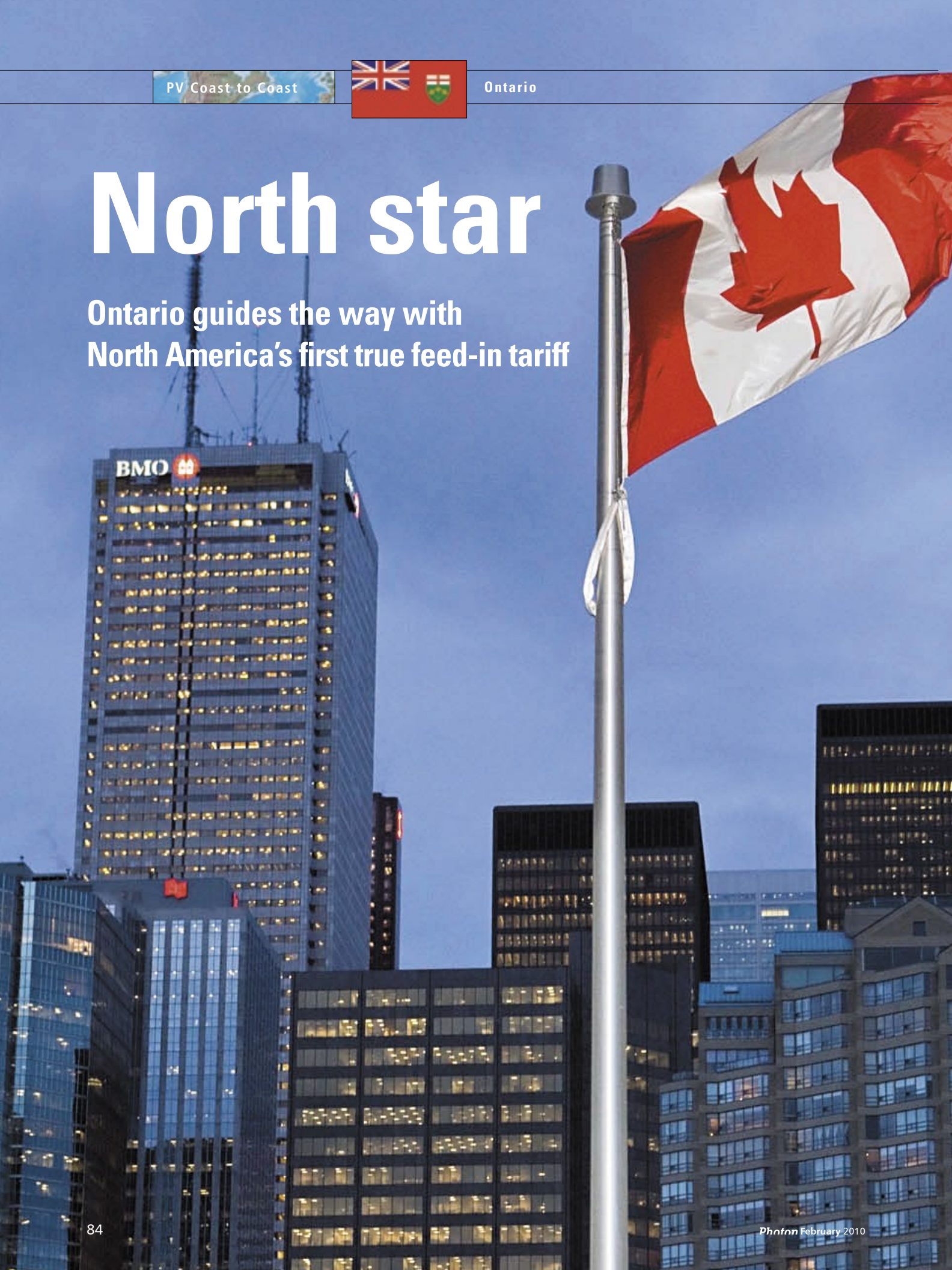
North star

Ontario guides the way with North America's first true feed-in tariff



Rolf Schulten / photon-pictures.com

Until recently, there was no solar energy to speak of in Ontario's energy mix. At the beginning of 2008, the Ontario Power Authority estimated the entire province's grid-connected capacity at 300 kW. Since then, the provincial government under Premier Dalton McGuinty has taken dramatic steps toward major market growth. The key to the most recent advance: a carefully designed, very generous feed-in tariff.

In 2007, when Jerry Austin joined Arise Technologies Corp. in Toronto as an installation sales representative, it was, he says, due to an »overwhelming demand« for new residential solar installations in one district of Toronto. Arise had been selected as the vendor for the West Toronto Initiative for Solar Energy (WISE), a community initiative cutting homeowners a deal on PV and solar thermal installations by contracting with installers as a group. At the time, the utilities were paying 42¢ CAD (40¢) per kWh for electricity fed into the grid under the Renewable Energy Standard Offer Program (RESOP). Under a 20-year contract, earnings for energy produced would be paid to generators separately from their monthly electricity bill, and would go toward paying off the system.

In the two years that the WISE program operated under the RESOP, Arise installed a total of 34 systems – or more than a third of the 124 total RESOP projects that connected to the grid in all of Ontario in 2007 and 2008. Austin says that most of the buyers in the WISE program were motivated by a commitment to the environment. The RESOP tariff rate was set low, partially to measure demand, and was just enough to incentivize people who could already afford the investment, and were contemplating going solar anyway.

Then, in 2009 the Ontario government initiated a more aggressive incentive policy for renewable energy. The Green Energy and Economy Act, which passed in Ontario in May and was enacted in October, established a feed-in tariff for renewable energy which would pay a maximum of 80.2¢ CAD (76.3¢ USD) per kWh and a minimum of 44.3¢ CAD (42.2¢ USD) per kWh for PV installations, depending on their size and location (see chart p. 98).

At the community meetings to discuss WISE, Austin says, many homeowners expressed a desire for quicker payback before installing solar on the roof. It was a decent investment then, but »it didn't have the sizzle that a hedge fund or a mutual fund could inject into a meeting,« he says. With the feed-in tariff, small rooftop

Ontario feed-in tariff rates

PV location	Size	Feed-in tariff CAD (USD)
Any	≤ 10kW	80.2¢ (76.3¢)
Rooftop	>10 ≤ 250 kW	71.3¢ (67.8¢)
Rooftop	>250 ≤ 500 kW	63.5¢ (60.4¢)
Rooftop	> 500 kW	53.9¢ (51.3¢)
Ground mounted	≤ 10 MW	44.3¢ (42.2¢)

Source: Ontario Power Authority

installations like the WISE program's systems now earn the maximum rate. Between October 1 and December 1, a total of 1,166 applications for PV systems 10 kW and smaller, comprising 8.4 MW, were submitted to the Ontario Power Authority, along with applications for nearly 1,300 MW for larger projects. The first 700 small systems were approved on December 16. A month later, the total microFIT applications had risen to 3,600, totaling 31 MW. Jim MacDougall, the manager of distributed generation resources for the Ontario Power Authority (OPA), said that the deluge of applications probably means the OPA wouldn't be able to adhere to the planned 30-day application review process until after the first quarter of 2010. For Ontario, the definition of »overwhelming demand« just swung from kW to MW to GW. »The whole landscape has changed,« Austin says.

Refining the approach

To be fair, even before the new Green Energy Act took effect, Ontario had established itself as a North American leader in renewable energy policy. By February 2009, when the act was introduced, the OPA had approved 525.4 MW of projects under the RESOP. About 57 MW of those were completed in 2009, mostly in three large solar farms, making Ontario the second largest solar market in North America, behind California. The 200 to 300 MW to be built in 2010, according to OPA's estimates, are almost entirely contracts signed under the RESOP.

The cookie-cutter rate of 42¢ CAD (40¢) per kWh, however, was not enough to capture the interest of a serious residential market for PV power. In its 2006 write-up explaining the program, the Canadian Solar Industries Association (CanSIA) described the program as a catalyst to motivate early adopters, which would in turn bring industry to Ontario and drive down prices. The RESOP was very

Ontario-based solar companies brace for game-changing growth

The announcement of Ontario's generous feed-in tariff meant some changes in the 2010 business plans for many in the PV industry. They would have to ramp up manufacturing in the province in order to take advantage of the incentive. But for the three Ontario-based businesses described below – a module manufacturer, a CPV start-up, and a silicon company – it was more like striking gold in your backyard.

1 Sentinel Power Systems: A full-time hobby

Rolf Schulten / photon-pictures.com

Adam Webb, president of Sentinel Power Systems, shares a facility with SolGate, the only company manufacturing panels in Ontario before the feed-in tariff.

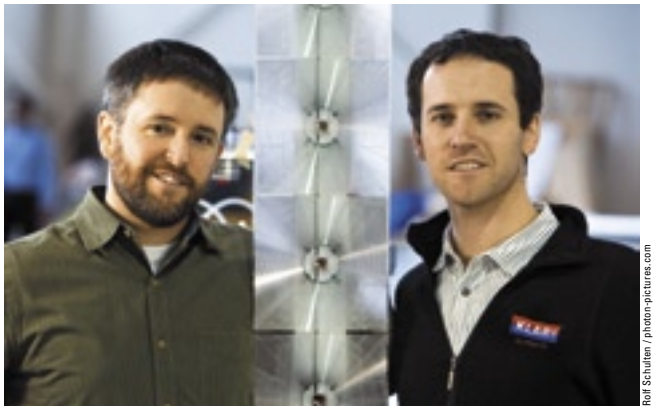
Adam Webb, president of Sentinel Power Systems based in Woodbridge, near Toronto, has probably felt the change in Ontario's policy more dramatically than anyone. Webb's company shares a facility with SolGate, which until recently was the only company assembling – or planning to assemble – panels in Ontario. Webb, who has been in the industry since 1994, says he didn't get into the business expecting to make a lot of money. Until now, most of his clients were environmentalists and hobbyists – the kind of people willing to spend $7.50 per W for a residential system without the prospect of ever fully recovering their investment. Nonetheless, Webb says, his business has grown by about 25 percent a year.

In 2009, Sentinel and SolGate's sales increased 50 times over. »I haven't gotten much sleep,« says Webb. In response to the spiking demand, SolGate is expanding their 3 MW line to 15 MW in 2010. Webb says that for him and Vadim Lyubchenko, CEO of Solgate, the Ontario incentive system has offered more freedom to invest in capital expansion, which in turn should help them bring down prices through economies of scale.

»Solar power in Canada until now has been a hobby,« Webb says. »For 15 years I've been having fun. And now it seems it's going to be a business.« Webb does have some reservations, though. For SolGate, 2010 demand will far exceed supply. Like many, Webb says that he's not entirely confident that the feed-in tariff is well-crafted enough to survive when it goes for review in 2011. Webb uses clear logic: if too many systems are installed at too high a tariff rate, the cost won't be sustainable. If the program becomes too expensive it will lose its political backing, and could fall apart entirely. That's one event Sentinel and SolGate would prefer to miss.

② Morgan Solar: Starting up strong

If Morgan Solar is any evidence, the frenzy around solar in Ontario has already begun to trickle past installers and panel manufacturers. Nicolas and John Paul Morgan, brothers and co-founders of the Toronto-based start-up, say the company has been getting a lot of attention since the entire PV industry started flocking to Ontario. At the CanSIA conference in December, says Nicolas, the 2½-year-old start-up, which uses advanced optical modeling to create a cheaper, more resilient PV concentrator, received three investment offers on the spot. They hadn't changed their strategy, they just suddenly found themselves in the middle of an event where the whole world seemed to be watching.



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Concentrated attention: Since the Green Energy Act, Nicolas Morgan (left) and his brother, John Paul, have raised more than $10 million USD for their CPV start-up.

It says something about Ontario's growth as a solar superpower if a concentrating PV start-up, which really only makes sense in the sunniest southern part of the province, becomes such a hot item: Ontario is cultivating not just a solar market, but a high-tech hub for exportable technologies. And according to Nicolas, the company had the right idea about working in Toronto even before the launch of aggressive incentives. With several top-tier university science programs in the vicinity, Nicolas says, it's a great place to recruit for R&D. »There are too many people down there in San Jose,« he says, »there's competition for the best and brightest. There's just as much talent per capita here.«

Moreover, it's easier to attract investor attention in a place like Toronto, Nicolas says, »by being an exciting, cool, hip solar company.« Of course riding the bleeding edge of solar-tech is a tricky sport. »You know as soon as you say we're cool and hip,« admits John Paul, »you lose any hipness.« Fortunately, the government doesn't care about what's »hip« anyway. In January, Morgan Solar announced it had received 2.3 million CAD ($2.19 USD) from the Sustainable Development Technology Canada fund through the Ministry of Natural Resources – a nice sum to top off an $8.2 USD funding round that began in October 2009.

③ 6N Silicon: The silicon cycle

About a year ago, things weren't looking good for 6N Silicon, Inc., an early-stage silicon company. When the financial crisis hit, the Vaughan, Ontario-based company was in the middle of assembling a 2,000 ton facility entirely for export. But when the market tightened, customers began to demand higher purity silicon at lower prices, and 6N quickly changed gears.

6N Silicon Inc.

Back to work: 6N Silicon is ramping up production again to meet Ontario's domestic content requirements.

Then, with the implementation of the feed-in tariff in October, everything changed again. Now the company is experiencing heightened demand. »It looks like a number of our customers are certainly looking to us for the same kind of deliveries that we had discussed a year ago,« says David Dunnison, the company's vice president of business development. Unfortunately, this is the second time 6N has had to change their strategy suddenly. For 2010, Dunnison predicts, the company will be exporting silicon that will then be re-imported for installation in Ontario. The company's current goal of a 1,200 ton capacity won't meet demand. »It's great when the market develops around you when you're already in the industry,« says Dunnison, adding that there's a great labor force in Ontario for manufacturing and metal work.

For the time being, 6N isn't making any dramatic predictions about future capacity. After all, the business is largely incentive driven, and 6N is waiting to see whether the market in Ontario is sustainability. »Spain was an anomaly that the solar industry is quite familiar with and does not want to repeat,« says Dunnison. »Let's hope the market doesn't get too strong and die, becomes good and solid, and provides something more long-term.« *mb*

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Speeding up the process: Up to now, much of SolGate's module assembly has been manual. Here, employees tighten each module with a tension strap to allow the silicone (which seals the laminate to the frame) to harden. As they ramp up to 15 MW to meet domestic content requirements, they'll be adding more automation.

Point, click, PV

If anything demonstrates Ontario's commitment to making the feed-in tariff accessible, it's the Ontario Power Authority's website for the program. The site hosts detailed instructions for both the FIT and microFIT programs, as well as all the necessary forms for applying.

The microFIT application to connect a system under 10 KW can be completed entirely online. Applicants who receive a conditional offer have 12 months to connect a system, which is guaranteed approval for the tariff so long as it meets the requirements in the conditional offer.

In theory, applications should turn around within 30 days. In reality, the OPA has been a bit slower. But microFIT applications are getting approved. The first FIT approvals should be announced in late February and March. *mb*

For information visit:
fit.powerauthority.on.ca

and commercial projects. The market for these small installations was virtually untapped. And, while big installations did create jobs for installers, the RESOP projects weren't stimulating local manufacturing. The three large plants completed in 2009, totaling 55.9 MW DC, used exclusively modules from US thin-film manufacturer First Solar, Inc. The feed-in tariff, which aggressively targets both large projects and distributed generation, is also designed to ensure that manufacturing takes place in Ontario.

Forging the perfect policy

When the feed-in tariff officially replaced the RESOP program at the beginning of October, it was greeted with skepticism. A few cities and states in the US have toyed with feed-in tariffs – some, like California, offer rates too low to stimulate demand.

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In the field: Solar pioneers at William Lyon Mackenzie Collegiate Institute

William Lyon Mackenzie Collegiate Institute – a secondary school not far from central Toronto – is an official looking, boxy, red brick facility. On a chilly afternoon in early December, the school was looking decidedly unlike the kind of place that would be leading the PV charge in Ontario. But as the few remaining students on campus waded through the melting snow and slush that covered the grounds, David Percival, manager of the Toronto District School Board's (TDSB) energy system, was sloshing around on the roof, showing off the first PV installation of what he expects will be many more on rooftops all over the district. With 257,000 students at 561 schools, the TDSB is the largest publicly funded school board in Canada, and one of the largest in North America. The annual energy bill for the district is around $70 million CAD ($67 million USD).

The project at Mackenzie has been a long time in the making. It began two years ago, partially in response to demands from students. A student-run campus club named Solar and Wind Initiatives Toward Change (SWITCH) formed in 2006 to advocate for the use of renewable energy in the district. The group went to the school board with its lobbying efforts and succeeded in attracting public attention to its cause. »They got the attention of the politicians,« Percival says, »and the politicians got our attention.«

The TDSB, which already has very progressive climate change policies when compared with the rest of Canada, must consider the cost of each investment to lower carbon emissions. The board usually selects energy efficiency measures with a maximum 8-year payback. When they ran analysis for investing in solar power under the Renewable Energy Standard Offer Program (RESOP), which was recently replaced by Ontario's new feed-in tariff, the investment didn't make sense. But they decided to go ahead with the 10 kW project on Mackenzie nonetheless. »We knew that we were probably going to end up in the solar business anyway, so we went ahead,« Percival says. The system worked as a trial run for future projects.

TDSB not only used in-house builders to install the district's first PV system, but it also designed its own mounting structure. The district is big enough, Percival says, that using in-house builders saves money. But there's another reason the work was done in-house: TDSB found it difficulty to locate people in the industry they could trust. In the beginning, the project's supervisor, Greg Cummins, says he felt that people were trying to sell him something he didn't need. Building a PV system for the first time made it difficult to select the

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Self-service: The Toronto District School Board had this racking system designed in-house, as a pilot for many upcoming projects.

First of many: Greg Cummins (left) and David Percival coordinated the first PV system installation for the Toronto District School Board.

right panel manufacturer. The industry in Ontario lacks standardization, Cummins says, and different suppliers have different ways of rating their products.

Obtaining permits for the system proved to be another challenge. The project had to be approved by the local building authority, and because it was one of the first projects in the area – and the first to be built by the school board – there was disagreement on how to categorize it. Initially, the building authority wanted to categorize the system as a building addition, which would have made the permitting process more complicated due to height restrictions. The TDSB had to fight to have the system categorized as a mechanical unit.

Now, with the passage of the 2009 Green Energy Act, Percival hopes that the building authority and the local electricity distribution company will facilitate PV installations. »It's kind of a question of whether they've been given marching orders to make it work,« he says.

Fortunately, the schools are not only eligible to participate in the feed-in tariff, but they may also receive significant support from Canada's economic stimulus funds. They now have $30 million CAD ($29 million USD) in applications pending for renewable energy project grants. And while a second project recently completed on an elementary school was also about 10 kW in size, Percival says the school board is thinking more in the 100 kW range. *mb*

About this installation

System size (DC)	9.36 kW
Panels	52 180 W panels
Panel maker and model	Day4 Energy 48MC180
Inverters	2 x Xantrex GT5.0 (5000 W)
Racking	12 x SolarDock 25 degree (custom), 1 x In-house system
Connected to grid	Pending
Feed-in tariff	80.2¢ CAD (76.3¢ USD) / kWh – Pending
Estimated annual production	12,000 kWh
Mackenzie annual total consumption 2008/2009	631,000 kWh

And the city of Gainesville's attractive 20-year tariff program capped at a meager 4 MW. When examining the various incentive programs for renewable energy in North America, one notices that feed-in tariffs are a fairly exotic, untested policy tool. Fortunately for Ontario's policymakers, the decade-long success of Germany's feed-in tariff, as well as the experience of other European feed-in adopters, provided plenty of examples for North America's first serious feed-in tariff program. In fact, Ontario's feed-in tariff is largely modeled on Germany's example. The rates are designed to encourage substantial growth, but also to split it between large plants and small, distributed generation.

But there is one very big difference. When the FIT and microFIT were finally enacted October 1, they contained domestic content requirements. From the beginning, projects under 10 kW were required to contain 40 percent domestic content. Larger projects were required to contain 50 percent domestic content. Both of those requirements would increase in 2011 (see charts page 107). Many in the industry say that the domestic content requirements, and especially the high starting levels, came as a surprise. Some installers had sold systems based on the new feed-in tariff only to discover that they in fact wouldn't qualify. On the homeowner side, early adopters who had committed to 20-year contracts at 42¢ CAD (40¢) per kWh felt cheated. The incentive had doubled for those who hesitated. On the manufacturing side, panel and inverter companies complained of protectionism. And for large project developers, the new feed-in tariff entailed a slight decrease in rate and a big, new hurdle to obtain enough domestic content to build MW-scale projects.

The domestic content rules were doubly frustrating for those who had been waiting since May for the Green

Rolf Schulten / photon-pictures.com

A big job: As manager of distributed generation energy resources for the Ontario Power Authority, Jim MacDougall has been keeping very busy. As of January, the OPA had more than 2,400 microFIT applications to sort through.

Energy Act to be implemented. The industry was stuck in limbo between the old RESOP program and the new feed-in tariff. Installers couldn't very well market PV to homeowners until they knew the details of the new program for which they would be applying. »We couldn't do any business for eight months,« says Derek Wilson, whose company, Eco Alternative Energy, had recently changed its business model to focus on grid-tied installations to take advantage of the incentive programs.

The OPA has been steadfast in upholding its original plans for domestic content, but has, at the behest of system owners, granted a one-time pass for systems that had been built before the announcement of the feed-in tariff. And while the waiting game may be frustrating for some, the fact that the OPA has taken longer than hoped to process applications only reveals how successful the program is. They're overwhelmed with the response. »Typical government though,« says Wilson, who has struggled to keep his solar installation business afloat while waiting for policy announcements, »they don't announce it until October 1, and now it's winter.« But then, maybe the winter hiatus is a blessing too, in that it offers some time to iron out the policy kinks and ramp up manufacturing. Even Wilson is loath to criticize too much. »It's a difficult process,« he says, »but nobody's going

Ontario domestic requirements to increase in 2011

Year of commercial operation	Minimum domestic content
2009 to 2010	40% (‹10kW) – 50% (›10kW)
2011 and later	60%

Source: Ontario Power Authority

Minister Sandra Pupatello on investment, energy, and 50,000 green jobs

Much of the buzz about green energy lately is tied to an idea now supported by many governments: investing in the industries of the future means creating long-term jobs. Promoting solar manufacturing can take a variety of forms, from direct subsidies for manufacturers to policy tools that aim to foster PV installations. So far, Ontario's 2009 Green Energy Act seems to have been remarkably successful in attracting manufacturing. PHOTON recently caught up with Ontario's Minister of Economic Development and Trade to discuss what the province is doing to create new jobs.

PHOTON Ontario has a lot of manufacturing, particularly in the auto industry. To some extent, is the idea to transfer jobs from suffering industries to green energy manufacturing?

Minister Sandra Pupatello That really is the key, because we've had such a difference in volumes in automotive production – the whole of North America has – and that means that there's a lot of capacity in our manufacturing plants today. So we've done a lot of work in our ministry, to help our manufacturers diversify their customers and their products, while using the skill sets that they have in their plants. As opposed to making automotive parts, they're making inverters for solar panels. It really takes advantage of what we have. Add training, and you're into a whole new industry. What's interesting is that some manufacturers who used to do 100 percent of their work for the automobile industry, are now doing just 50 percent.

PHOTON What is your ministry doing to help facilitate this transition?

Pupatello We've made lots of funding available to enhance training efforts. For example, we have an organization called Yves Landry Foundation (a Canadian NGO supporting technology education and training). We gave them 25 million CAD ($24 million USD). They take that money and work directly with companies to offer grants that pick up 50 percent of the cost of training that might be done right on site. We've done a lot of to introduce them to the OEMs in the energy sector. They know the automotive industry – it's Ford, GM, Chrysler, Honda, Toyota etc. – but in a whole other industry, they need to learn how you get into the supply chain. So we bring people to them. We host seminars.

Ontario Ministry of Economic Development and Trade

Ontario's Minister of Economic Development and Trade Sandra Pupatello.

PHOTON There's the idea that Ontario is doing something totally unique in North America – something that might serve as an example. What has the response been like from outside Ontario?

> »The contracts that we're signing are 20-year contracts. And that really is the differentiator for Ontario, because it's bankable«

Pupatello We're certainly getting a lot of interest from journalists from different jurisdictions who hear about these things. Two years ago the New York Times dubbed Ontario the alternative energy capital of North America. We've been at this policy development for some time, and now, with the launch of the Green Energy Act, it's really ramping up. We're taking a huge step forward. In 2003, when we (the Liberal party in Ontario) formed a government, we had about 10 windmills operating in Ontario. Several years later we have hundreds and hundreds, and we need to take that up a big notch. Premier McGuinty was really quite impatient that things just weren't happening fast enough, and so...the launch of the Green Energy Act.

PHOTON Spain's experience with feed-in tariffs was mentioned frequently at the Canadian Solar Industries Association (CanSIA) conference this year. What do you say to

investors who fear the feed-in tariff might be drastically cut, or disappear, if it's not set at the right rate?

Pupatello Well, I think Germany is probably the better example, and it's certainly the example that we used. They've been at it a few years already, and there is an acknowledgement that, over time, that number (tariff) will come down. But the contracts that we're signing are 20-year contracts. And that really is the differentiator for Ontario, because it's bankable. Companies can go to the bank and know that they're going to have a secure source of revenue from the government of Ontario for 20 years. Ours would be described as the most lucrative (feed-in tariff) available, currently.

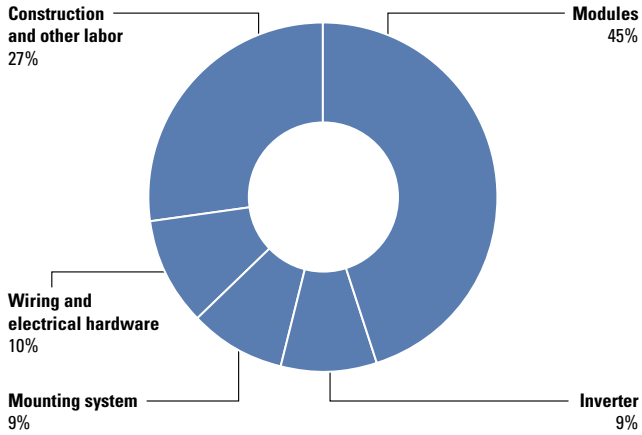
PHOTON There's been talk that the banks are still figuring out how to work with the feed-in tariff, because they might not understand how secure the investment is…

Pupatello That's right. Or how it works. What we've done in our ministry to facilitate this is we've actually had sessions for bankers and the financial sector. We call them in and introduce them to companies in the green energy sector, and then we have the folks from our Ministry of Energy sit down and walk them through the feed-in tariff, how it works. And in fairness, they wouldn't have had any experience with programs like this. They need to have that education too, so that they can sort out how the financing will work. Well, when they hear the government of Ontario is backing this, the largest province in Canada, the largest GDP, a significant economy in North America, then that gives them the kind of comfort to say ›okay, this is something I can be involved in.‹

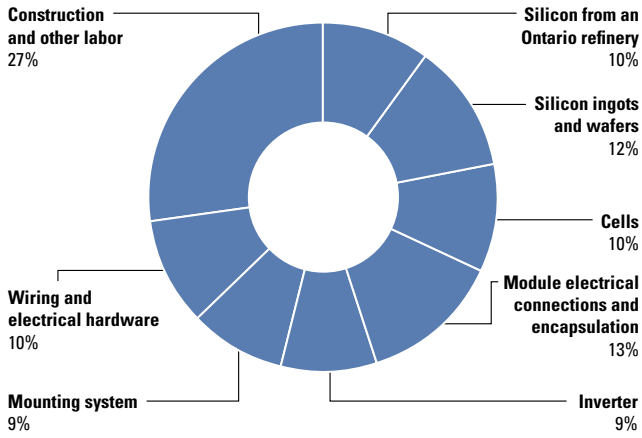
Interview: Melissa Bosworth

Domestic content qualifying percentages for FIT and microFIT systems in Ontario

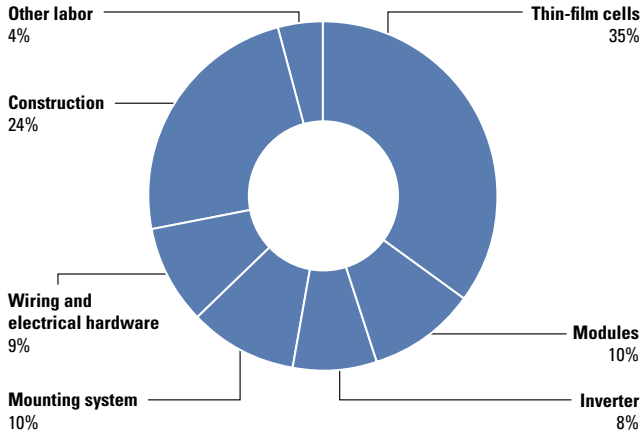
microFIT projects (10 kW or smaller)



FIT projects (crystalline silicon modules)



FIT projects (thin-film modules)



In the field: Raquel Cader installed one of Ontario's very first PV systems

Until 2009, installing small PV systems didn't make a whole lot of financial sense. But that didn't stop committed environmentalists like Raquel Cader from making the choice to go solar. Cader, one of Ontario's first solar adopters, doesn't think much about the 3 kW PV system on her roof. But she does get the occasional reminder – like the email that came from her sister not long after the new feed-in tariff had been implemented in Ontario. »Can you send me the name/email of the guy who did your solar panels?« she asked. »I get emails like that once in a while,« says Cader, who feels her decision to get a solar system came natural for her and her family. But while she has long considered herself an environmentalist, PV was hardly on her radar before 2007, when she went to a meeting to check out a new neighborhood program called the West Toronto Initiative for Solar Energy (WISE). At the time, there weren't even 100 grid-connected solar systems in all of Ontario.

After attending the WISE meeting, which was publicized through a neighborhood residents' association on behalf of a non-profit group called Our Power, Cader was eager to sign up. Her husband, David Beutel, had some minor concerns about aesthetics, but he quickly came around to the idea. They weren't looking to benefit financially from the system, which would include a solar thermal and a PV installation. »The question, I think for us, was would it eventually pay for itself,« Cader says. »We looked up at our roof and thought, ›the sun shines on it all day, if we're not capturing it, what a waste.‹«

Rolf Schulten / photon-pictures.com

Out of sight: Raquel Cader's PV system is invisible from the front of the house.

When discussing Ontario's 2007 Renewable Energy Standard Offer Program (RESOP), both the Canadian Solar Industries Association (CanSIA) and the Ontario Power Authority (OPA) described homeowners like Cader and Beutel as the most likely participants. The program's 42¢ CAD per kWh incentive was enough to eventually pay off a solar system in about 20 years. Still, the decision to purchase a system would likely be backed by an already strong commitment to the environment.

Cader, who says she considers herself one of Ontario's »solar pioneers,« joined 25 other homeowners in her neighborhood who in 2007 opted for PV systems through the WISE program. The installation came with a new meter to track the electricity that Cader and Beutel fed back into the grid. At the end of each month, the family would get their electricity bill just as before, but they would also receive a direct deposit from the local distribution company for every kWh the system produces.

For Cader, not only was the choice to get PV a natural one, but the process was simple. The WISE program obtained discounts by signing up multiple houses in the same neighborhood and selecting the installer – Arise Technologies – through a bidding process. »I felt like they did all the leg work,« Cader says. »All we had to do was put our hand up in air and say ›sign us up.‹« The system cost $28,000 CAD ($26,600 USD), and was installed on the west side of the roof – the accompanying solar thermal system took priority placement on the south. Since then, the panels have been quietly bringing in about $840 CAD ($800 USD) a year under the RESOP, or approximately 2,000 kWh of electricity. It's been a healthy offset to their $1,800 CAD ($1,700 USD) electricity bills.

In 2009, the RESOP program was replaced with a feed-in tariff, giving Cader and Beutel something of a windfall benefit. After some pleading with the OPA, homeowners who already had PV systems became eligible to nearly double their earnings. Cader and Beutel, who were recently approved for the microFIT program, now expect to earn closer to $1,500 CAD ($1,430 USD) a year. With that kind of return, Cader should expect to field a lot more questions about the investment on her roof. *mb*

to complain about 80.2¢.« At the very least, the price is right to stimulate demand.

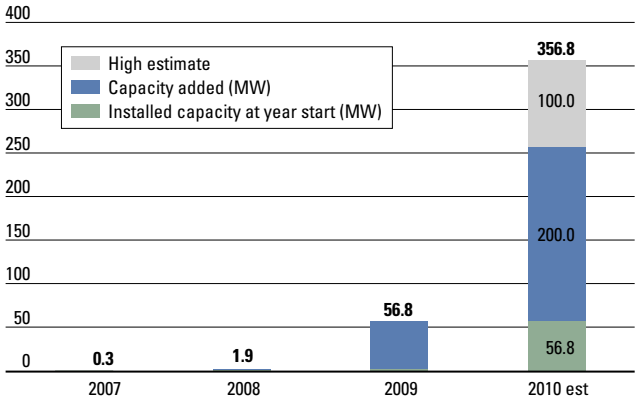
Job creation

It seems that the price is right for FIT as well as microFIT installations. By the time the CanSIA conference met in December, the consensus among manufacturers had quickly transformed from huffing and puffing about discriminatory content rules to announcements of plans to get panel and inverter manufacturing online by 2011. Canadian Solar announced plans to add 200 MW of panel manufacturing in Ontario, and a host of others announced similar plans with aggressive ramp-up schedules, but few details. Still, the Ontario government's real policy success is that the announcements from Canadian Solar and others bring with them the promise of hundreds of new jobs.

What forms the backbone of Green Energy Act, and the root of the domestic content requirement, is Ontario's goal of creating 50,000 jobs during the next three years. While Canada's most populous province is home to the country's financial center, Toronto, it also borders the US rust belt and, especially in the south, has similar economic features. Ontarians have felt the impact of the financial downturn, and the collapse of the North American auto industry. Unemployment in Ontario reached 9.3 percent in December, according to the Canadian statistics office, and some southern cities still have rates in the low teens.

PV in Ontario

Ontario's upward trajectory*



*Numbers are approximate; based on Ontario Power Authority estimates

Exponential growth: Since 2007 Ontario has become a leader in installed capacity.

Rolf Schulten / photon-pictures.com

Frozen market: Icy weather makes it impossible to install PV in Ontario through most of winter, but integrators are building inventory for a spring rush.

It seems the content requirements are working as expected. A wave of new hires is sweeping across Ontario, from assembly lines to installation to silicon refineries. Just about everyone in solar says they're hiring. SolGate, Inc., which before the Green Energy Act was the only panel manufacturer in Ontario, is more than tripling its manufacturing work force from 17 to 60 employees. Over at 6N Silicon, Vice President of Business Development David Dunnison says orders have returned to pre-2009 levels since the act was announced. In previous years, Dunnison says, almost all of the company's silicon went to export. But now, exported silicon for wafer manufacturing will likely return to Ontario to help meet the domestic content requirement. 6N Silicon is taking advantage of metallurgical expertise in the Ontario workforce, and will increase its staff to original levels, that is 130 employees instead of the company's all time low of 60 workers. Jason Kruusmagi, has been trying to expand his company, Advenergy, into solar even before the downturn. He was forced to cut staffing for that effort to 2 employees. Now he hopes to hire 8 more workers.

Just enough of a good thing

One thing about the 50,000-job forecast, which was modeled using a multiplier for the assumed quantity of renewable energy to be installed during the next three years, is it will ultimately be a test for the domestic content requirement as a policy tool. And with Ontario set to be one of the biggest markets for solar in years to come, each element that proves the effectiveness of feed-in tariffs helps guarantee the policy's longevity.

The tariff is scheduled for review after two years, and will likely begin to degress, like Germany's tariffs, as capacity grows and installations become more affordable. But with the most lucrative feed-in tariff rates in the world, some fear that Ontario, like Spain, will grow too fast. Stimulating the provincial economy, however, is one way this policy can earn and maintain political favor. If it turns out that policymakers have successfully set a tariff rate that balances growth and sustainability, perhaps the rest of the continent will look to Ontario as the first to get it right. And even if Ontario's policy needs some adjustment, well, it's probably still worth emulating.

Melissa Bosworth