

The magazine of the Canadian Solar Industries Association Spring/Summer 2011

SOLutions



STAND UP FOR SOLAR



CanSIA LAUNCHES INTERNET-BASED ADVOCACY CAMPAIGN

+

Growing Pains

Ontario FIT Experiencing Rapid and Significant Growth

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Tremendous Appetite

Edmonton PV Pilot Adds to Alberta Market

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A Forward-Thinking Complex

Giving Voice to Solar Excellence at Canada's Winter Games

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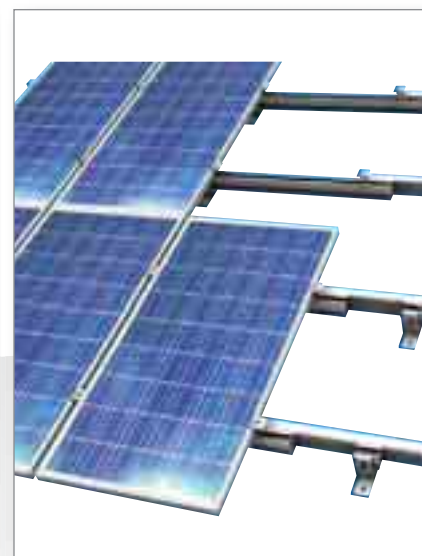
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ON THE COVER: Panels of the Enmax-Paralex Demonstration 10kW rooftop system at Strathcona-Tweedsmuir School, Okotoks, Alberta. PHOTO COURTESY SUSTAINABLE ENERGY TECHNOLOGIES

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ABOUT CanSIA

CanSIA represents the interests of its members by working to increase the use of solar energy in Canada. In addition, recognizing that the development of solar energy technologies carries obligations to the purchasers and users of these technologies, it is an objective of the Association, through its programs and activities, to ensure that the solar industry in Canada provides systems and services that meet Canadians expectations of value, performance, and safety.

CanSIA's Specific OBJECTIVES

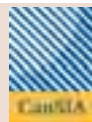
I. To develop and implement programs and activities directed at enhancing and accelerating the widespread use of solar energy in Canada; (b) To develop and

improve the solar energy industry and the individual members of the industry by facilitating the delivery of training and continuing education;
 II. To ensure that governments in Canada have a good understanding of the contribution a viable solar equipment industrial base can make to Canada's industrial and social development;
 III. To coordinate and assist its members with regard to the development and revision of product standards and building codes for the solar equipment industry, with special emphasis of safety, performance and economic impact;
 IV. To collect and disseminate statistics and other useful information on solar energy and the solar industry to

various stakeholders and to carry out conferences and publications that advance the purposes of the Association;
 V. To carry on and assist in research on issues that impact the solar industry and its support from various stakeholders;
 VI. To develop a working relationship with other associations having an interest in the furtherance of the objectives of the Association and to ensure optimum support and cooperation;
 VII. To undertake such other programs and activities as may be proper to enhance or promote the welfare of the industry and that address the needs of the Canadian solar industry.

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STAND UP FOR SOLAR

CanSIA LAUNCHES INTERNET-BASED ADVOCACY CAMPAIGN

By Drew McKibben

CanSIA HAS LAUNCHED STAND Up for Solar (www.standupforsolar.ca), an Internet-based advocacy campaign with links to social media that empowers individuals to advocate to their provincial government representatives to make a commitment to support solar energy in their province.

The campaign provides individuals who support solar energy with a complement of simple tools to contact their provincial representative to express their support for solar.

A crucial element of the portal is the facility to dispatch email and social media messages indicating solar support directly to a visitor's provincial government representative.

"This is an industry, particularly on the electricity side, that is governed provincially," says **CanSIA President Elizabeth McDonald**. At this point, Stand Up for Solar has been launched exclusively for Ontario and only Ontarians can use it to send a message to their provincial representatives. McDonald says the objective is to eventually help all Canadians connect with their elected provincial officials. While seed money for the project was derived from the association's successful 2010 conference, to make it successful in every province, CanSIA members must now take up the challenge.

In Ontario, a growing number of CanSIA members have been getting the electronic ball rolling, and now McDonald wants them to encourage their contacts and customers to Stand Up for Solar. "We want all Ontarians who support clean energy to Stand Up for Solar because if they don't, the political will may not be there to help the industry thrive."

"We want all Ontarians who support clean energy to Stand Up for Solar because if they don't, the political will may not be there to help the industry thrive."
— ***Elizabeth McDonald, CanSIA President***

Stand Up for Solar will be the focus of Summer Solstice 2011 in Toronto, June 21. It is an annual gathering of CanSIA's Ontario members, as well as people from government and provincial organizations peripheral to the solar industry. This event will raise the profile of the campaign, garner further support and provide an

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to learn more about the Stand Up for Solar campaign

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opportunity to understand the success to date and future strategy as the ever important Ontario provincial election draws closer.

"There is a second part to Stand Up for Solar in Ontario, which will involve more traditional media," says McDonald. "We're just talking to members now about doing a more aggressive campaign associated with advertising in regional newspapers."

McDonald credits her son, Sean McDonald, with the idea to launch Stand Up for Solar. While he has nothing to do with its implementation, his education and profession, director of digital strategy at the marketing and communications company TAXI, prompted him to suggest social media as a means to address the particular challenges the solar industry faces in Ontario.

Sussex Strategy Group, specializing in government relations and strategic communications, is the company hired to implement the program. **Sussex Principal Brett James** says social media has become the norm for spreading public information and allowing people to express opinions, but it is also very much a part of contemporary political and government processes and the media that shape public opinion. Right now, there is heated public debate over the value of solar power and other renewables in the context of Ontario's future electricity supply, and James believes social media will influence the direction of that discussion.

"It's important to note this is not about the industry expressing its opinion," says James. "This is about providing tools and getting some education to the general public that already believes solar is a good thing and asking them to express that opinion. People have to understand they need to speak up, and that's part of what this program does."

GET SOCIAL WITH SOLAR

James also points out Stand Up for Solar is a non-partisan tool for political persuasion. Whether it's representatives of the current government or potential future governments, he says "it's important they all know there's a high level of support for solar as well as a program that encourages solar generation."

CanSIA board

member **Dave Egles** is a principal of BC-based Home Energy Solutions, and is chair of the CanSIA BC Caucus. He says British

Columbia is on track to be the next province to fully adopt Stand Up for Solar.

"We've had successions of meetings in both Vancouver and Victoria," he says. "They were well attended, and lots of people are keen on this. We've identified issues that need some help here."

BC has a legacy of inexpensive hydro power, says Egles, and a government motivated to keep electricity rates low, among the lowest on the continent. But the province also has a 2 per cent annual growth of electricity consumption; it has a need for new generation, which cannot possibly be produced at a rate economically competitive with existing supply; and it has a mandate for clean energy, free of carbon emissions. What it doesn't have, or has never indicated, is an interest in solar power. The BC Caucus wants solar to be part of the new generation mix, as in Ontario, but convincing the government is an uphill battle.

"The solar industry does not have a bottomless media budget," says Egles, articulating his belief that Stand Up for Solar is a cost-effective communications strategy.

"There are a lot of people employed in this industry all across the province. There were 1,000 at one point because there are some big manufacturers here, as well as installers. We're trying to get everybody in the industry to participate, to get the word out to their clients to join us and to tell their friends."

Egles says the presentation of Stand Up for Solar BC is on the agenda for the annual CanSIA Solar West 2011 Conference and Trade Show, May 30–31 in Vancouver.

He also speculates that Alberta could be an early adopter and that New Brunswick and Nova Scotia could follow. While it will take member organization within each province, he says, CanSIA will be supportive.

"CanSIA has put an effort into getting it right," says Egles. "Ontario is the model, and now there's a thrust to transfer skills and expertise to other provinces." ●

REAPING THE

FIVE REASONS TO STAND UP FOR SOLAR IN ONTARIO

ONTARIO'S LONG-TERM ENERGY PLAN sets a course for solar power to supply up to 2 per cent of the province's electricity supply by 2018. Allowing the solar energy industry to grow to achieve this goal will reap major benefits for Ontario that extend beyond the province's energy industry into Ontario's

REAL ECONOMICS A RESIDENTIAL ROOFTOP MICROFIT SOLAR POWER INSTALLATION

A typical 5kWp solar power system installed on the south-facing roof of an Ontario home costs the homeowner \$50,000. This price is paid in full by the homeowner – NOT the government, NOT the taxpayer AND NOT the hydro rate-payer. It covers the cost of the equipment, the supplier's sales, marketing, staff wages and other business expenses and is subject to applicable taxes. All on-going repair, maintenance and operation of these solar systems bears NO COST to the government, the taxpayer and the rate payer. It is paid in full by the owner of the system.

In return for the 5.5 MWh of solar power this system would produce annually, the system owner would be paid approximately \$4,400 per year, every year for 20 years – with a portion of this revenue going to the provincial government as income tax. When all expenses and income is balanced, the system owner can expect to recover their costs after 12 years and the revenue received for the remaining seven years covers the system's operation and maintenance and provides a return on investment.

communities. The cost of doing-so will be far less than the industry's initial start-up costs.

Remember: Canada is an energy superpower. Energy underlies nearly every aspect of the Canadian and Ontarian economy employing over 365,000 individuals in Canada and 95,000 in Ontario. Canada and Ontario's energy industry have grown to achieve their successes as a result of federal and provincial government support over many years.

The Canadian traditional energy industries receive tax breaks amounting to billions of dollars every year paid for by the Canadian tax-payer.

In comparison, Ontario's solar energy industry requires and deserves a minor amount of support to deliver its fair share of benefits to Ontario and Canada.

Standing Up for Solar in Ontario will:

1. Attract the injection of billions of dollars of private-sector investment into Ontario's economy for the benefit of Ontarians.
2. Contribute to Ontario's Green Energy and Green Economy Act's targeted 50,000 new green jobs.
3. Establish a world-class solar manufacturing hub in Ontario.
4. Ensure a reliable, secure and affordable energy supply for Ontario.
5. Contribute to the environmental sustainability of Ontario's energy industry.

1. Attract the injection of billions of dollars of private-sector investment into Ontario's economy for the benefit of Ontarians.

Solar energy is a free resource but the equipment and skills required to harness

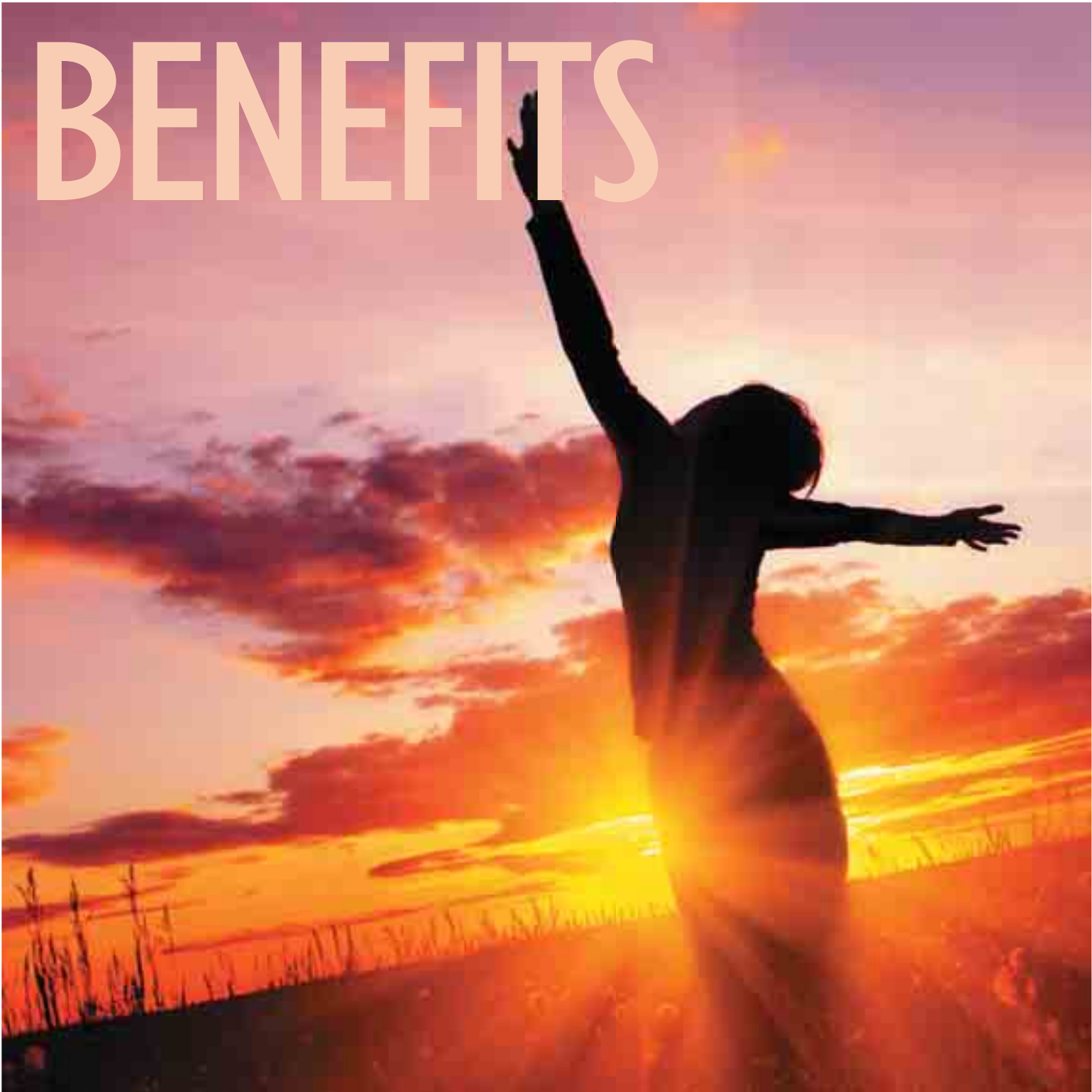
it requires significant upfront investment. This investment is made by private individuals and companies – NOT the government, NOT the taxpayer AND NOT the hydro rate-payer.

Ontario's revenues have declined steeply since the global economic downturn. In fact, no other Canadian jurisdiction experienced a sharper decline in corporate tax revenues between 2007-08 and 2009-10. As many other jurisdictions have shown, encouraging the development of a solar energy industry with Feed-In Tariffs encourages major private sector investment in the economy and energy infrastructure and generates significant tax revenue that would not have occurred otherwise.

Every 10MW of solar power systems (the equivalent of 2,000 residential systems) installed in Ontario in 2010 resulted in at least \$50 million of private-sector investment in Ontario.

The solar power systems installed in Ontario in 2010 resulted in over \$750 million being injected into Ontario's economy that year. As the microFIT and FIT programs only pay for energy produced and do not cover the start-up costs, operation or maintenance, this \$750 million was invested in the province before a single cent was paid to any member of the solar industry in return. In fact, the capital costs for these systems are typically not recovered by the system-owner for at least 10 years – during which time, Ontario receives all of the benefits of the operating solar systems without paying for the equipment and its maintenance or operation.

BENEFITS



2. Contribute to Ontario's Green Energy and Green Economy Act's targeted 50,000 new green jobs.

A recent study has shown that the cost of establishing Ontario's solar energy industry would be less than the equivalent of the cost of a Tim Horton's donut per month, per household. In fact, solar power creates

more jobs per dollar invested than any other energy source and is an industry where technological development and innovation will continue to create new opportunity for employment and industry for the foreseeable future.

In 2009, Ontario's solar industry employed less than 2,500 people. If the

microFIT and FIT programs are allowed to continue, this number will increase many fold. These jobs will be distributed across the province in local communities – many of which in the regions hardest hit by the global economic recession due to their reliance on the manufacturing sector.

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Nature provides us with the gift of energy through the sun, but unfortunately, nature's wrath may not be all that friendly to your PV system under stressful conditions. Snow, wind, extreme heat or cold, and seismic activities can wreak havoc on underengineered, underdesigned and insufficiently tested racking structures. Only UNIRAC solar structures have been engineered and third-party tested to withstand the harshest of elements and events for a long and enduring service life. Complies with IBC, IRC, ASCE-7-05, ADM, AISI, AISC, NEC and UL. For the highest level of engineering and construction with the lowest cost of ownership in the business, Unirac is the 24/365 solution for performance in and out of the sun. Visit unirac.com for more information.



Not just for sunny days.

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3. Establish a World-Class Solar Manufacturing Hub in Ontario.

Ontario's solar manufacturing industry has grown more in the last year than any other sector of the manufacturing industry. With over 30 internationally recognized solar manufacturing companies now established in Ontario, and many more committed to do so in the near future, Ontario has become a world-class solar manufacturing hub.

While many sectors of the province's economy have recovered steadily since the global economic crisis, soft demand in the United States (Ontario's main export market) has led to our manufacturing industry struggling to surpass pre-recession levels. The global demand for solar equipment has been increasing annually by 30–50 per cent for the past decade and represents a major opportunity for Ontario-made products, engineering and intellectual property to lead the world.

4. Ensure a Reliable, Secure and Affordable Energy Supply for Ontario.

Introducing a small proportion of solar power to Ontario's current energy supply will complement our energy portfolio. Solar technology is proven, robust and reliable, and the resource is predictable and free.

Most importantly, as a Feed-In Tariff only pays for the solar power produced by a solar system, Ontarians are not subject to any financial risk in the event a solar power system or solar technology does not function optimally.

There are a number of jurisdictions in different parts of the world, each of which are similar to Ontario in many ways (including Germany, Italy, Japan and California, for example), that have significantly higher volumes of solar power in operation than Ontario is likely to achieve in the next five years. These jurisdictions don't have a compromised energy supply and nor do the availability of sunlight and the effects of clouds and precipitation not impact the availability of reliable and secure electricity in these jurisdictions. In fact, where the peak electricity demand occurs in the summer, as a result of demand for air-conditioning,

solar is a key component in the energy supply that ensures that peak demand is met.

The cost of solar power has decreased significantly in the past decade and investment in the technology and the industry is expected to drive the cost down by a further 30 per cent worldwide by 2013 in comparison to 2010. As sunlight is free, solar power is not subject to price fluctuations from regional political instability or the volatility of traditional energy markets.

5. Contribute to the environmental sustainability of Ontario's energy industry.

Solar power is virtually silent in operation, has no moving parts, does not produce any form of pollution or emissions, has no lasting effects on the natural environment where it is situated and it is recognized as being one of the most environmentally friendly energy sources in the world.

Solar power will contribute to moving Ontario from dirty coal dependency to a clean, modern and reliable energy economy. ●



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CANADA'S PHOTOVOLTAIC INDUSTRY HAS

enjoyed rapid and significant growth in Ontario, stretching the capabilities of the province's regulatory organizations, electricity infrastructure and budding manufacturing base.

Under Ontario's Feed-In Tariff (FIT) in 2010, Ontario installed 168 MW of PV, elevating grid-connected solar generation capacity in the province to more than 215 MW and making it one of North America's leading PV markets, ahead of New Jersey and behind California.

"This is a new program that began in October 2009. It is complex and layered over years of tradition. It affects the most ubiquitous resource in the world and incorporates what is essentially new technology," said **CanSIA President Elizabeth McDonald**. "The program in Germany – the world's leader in solar –

was introduced in 1994 and only took off in the past decade – today 17,300 kW of solar energy is feeding their grid. At 215 MW in Ontario, we have done well against the highest measure in a very short time. And this is provincial government policy –

not federal. The strides made are quite remarkable."

McDonald points out that the yearly PV potential for Germany at 848 is far below Canada's 1,161 in Toronto and 1,361 in Regina. (See chart below.)

Source Chart

City	Yearly PV Potential (kWh/kW)
Los Angeles, California, USA	1485
Regina, Canada	1361
Calgary, AB	1292
Winnipeg, MB	1277
Edmonton, AB	1245
Ottawa, ON	1198
Toronto	1161
Washington D.C., USA	1133
Victoria, BC	1091
Halifax, NS	1074
Vancouver, BC	1009
St. John's, NL	993
Tokyo, Japan	885
Berlin, Germany	848

Source: NRCan



PHOTO COURTESY EDF EN CANADA

The Arnprior Solar Project is a 23.4 MW solar farm near the town of Arnprior, Ontario. Arnprior generates enough power to provide electricity to 7,000 homes. It consists of 312,000 PV thin film solar panels a 200-acre field. The Arnprior Solar Project is by EDF EN Canada.

That being said, the new program, coupled with new entrants and the enthusiasm of the industry, has made for a few growing pains.

“Nothing like Spain,” McDonald points out, highlighting the country’s explosion of solar projects and the problems that resulted, many of which were carefully assessed in Canada to ensure the same pitfalls were avoided.

Constricted transmission and distribution capacity is a big problem across North America and Ontario’s electricity system is not exempt. In the second-round FIT application period, projects larger than 500 kW were subject to transmission and distribution availability tests. Then, in February 2011, 40 new contracts for more than 872 MW of renewable energy were announced, with 35 contracts promising 257 MW of new PV. Second-round projects that were not offered contracts due to

insufficient transmission and distribution capacity, however, were channelled into a new assessment procedure called the Economic Connection Test (ECT). The ECT determines whether the benefits of the proposed development justify the cost of electricity system upgrades, and the process is evaluating applications totalling 1,732 MW of potential PV generation.

“And crucial for the solar industry,” said **CanSIA Policy and Research Analyst Patrick Bateman**, is the interpretation of Ontario’s 20-year long-term energy plan (LTEP) and the resultant integrated power system plan (IPSP).

The Ministry of Energy released the LTEP in late 2010, declaring non-hydro renewable energy sources will play a significant role in meeting Ontario’s rising energy demands. It also outlines \$87 billion in new generation, transmission and conservation investments it says will be needed to meet electricity demand in 2030. The Ontario Power Authority was then tasked to implement the LTEP by consulting with stakeholders and producing the IPSP, which will specify the power supply mix.

CanSIA is an active contributor of information to this process, said Bateman, and the association is preparing for further

involvement as it deepens. While it is premature at this point for CanSIA to identify its 20-year Ontario goal for installed PV generation capacity, Bateman said the association expects the IPSP will help clarify long-term transmission and distribution allocation, “allowing the solar industry to plan and adapt accordingly.”

“CanSIA is seen as an ally,” said McDonald. “We offer resources, honesty and contribute regularly in the many discussions that the government has been careful to have because this is such a new industry.”

CanSIA Chairman Jon Kieran, who is also director, Solar for EDF EN Canada, points out that one of the largest discussions and challenges has been about the commercial reality of creating an industrial base for domestic content, which Ontario called for beginning 2011.

It’s a demand-pull issue, he says, explaining the path developers must follow to complete a PV project has not always been completely clear. “Everybody wants to buy domestic content compliant panels and inverters and cabling and so on, but they don’t want to give manufacturers binding purchase orders until they know

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their projects won't be terminated or diminished," said Kieran.

Developer caution means Ontario's PV manufacturing sector is not getting a strong enough economic signal to, paradoxically, ramp up the production capacity to satisfy market demand.

In order to inspire developer confidence channels of dialogue were essential, a fact not missed by the association that went about initiating meetings to address issues and open communications amongst the parties.

The issues that needed to be discussed stem from problems related to rapid growth.

Under Ontario's FIT in 2010, Ontario installed 168 MW of PV, elevating grid-connected solar generation capacity in the province to more than 215 MW and making it one of North America's leading PV markets.

As Bateman points out, CanSIA is involved in a working group with representatives from the Ministries of Energy, Environment, Natural Resources and Tourism and Culture. The group convenes on a two-month rotation and is focused on resolving issues. Bateman says the inter-ministerial group is "a very effective forum for industry stakeholder consultation on an ongoing basis."

"CanSIA is continually working with the government and its agencies to improve all aspects of the FIT program," said Bateman.

Kieran believes all these issues can be understood as the gap between government policy and the successful implementation of resultant programs. It's one thing to pass the Green Energy Act, he said, "and it's another thing to connect 10 MW sites on the distribution system over and over and over again."

"Implementation obstacles were not necessarily understood at the time policy was created," adds Kieran.

Ontario's Liberal government, which initiated renewable energy tariffs in 2006, followed by the passage of the Green Energy and Green Economy Act in 2009, reaches

the end of its term October 6, when it hopes to be re-elected as the province's governing party. CanSIA is working to make the case for solar energy, and for the continued implementation of the FIT program, by highlighting the economic benefits and demonstrate the value of the program to all government parties.

"If you step back," said **Michelle Chislett, CanSIA vice-chair and chair of the Ontario PV caucus**, "the biggest issue is to make sure we have a program in Ontario."

She agrees advocacy work is important to ensure the public understands the value of solar energy and that all politicians understand the importance of stable policy and program continuity.

"We think the proof is in the facts," said McDonald. "The facts are in the manufacturing plants opening up in Ontario, the jobs being created and the power being fed into grid – all from the cleanest energy resource there is: the sun." ●

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TREMENDOUS

EDMONTON PV PILOT ADDS TO ALBERTA MARKET

By Drew McKibben

THE CAPITAL CITY OF

Canada's energy province, Edmonton, Alberta, has 22 new rooftop photovoltaic systems installed through a municipal pilot. It may not seem like a lot to other jurisdictions, but it is a good example of how Alberta's solar industry is growing in the absence of provincial renewable energy policy.

"I've been in a meeting speaking directly with the Minister of Energy, and Alberta just can't tolerate a Feed-In Tariff (FIT) with fixed-price contracts for 20 years," says **CanSIA Alberta Solar Caucus chair Brent Harris**, vice-president of product

development for Calgary-based Sustainable Energy Technologies.

"We're resource-rich and policy-poor in Alberta. In the end, good policy attracts investment."

— **Russ Smith, Medicine Hat Manager of Energy Sustainability**

"It's not that the province is anti-solar," he says, explaining solar energy wasn't rejected by the Department of Energy, just the FIT. "The government is thinking about solar," says Harris.

In the absence of provincial policy, and when compared to an advanced renewable tariff, the Edmonton PV pilot exemplifies a more "traditional North American" style of PV deployment, which is actually working pretty well in Alberta, says Harris. "Buy-downs work great here. They get picked up and sold out immediately."

In September 2010, at a rate of \$3 per watt, the city of Edmonton told its homeowners it would chip in as much as \$9,000 toward the installed cost of a new PV system, and up to \$18,000 for a commercial installation. The pilot program had a \$200,000 budget. Within a month, 80 applications were received and the submission window closed. On the residential side, 21 grants were approved and 17 projects installed. From the commercial applications, six were approved and five installed.

"I think we just touched the tip of the iceberg of people who were seriously thinking, even preparing, to go ahead with an installation," says **Barbara Daly, project manager of the pilot**. "The fact that people could step up with the fairly demanding paperwork we were asking for in such a short period of time means they had been thinking about it. There's a tremendous appetite out there."

While Daly believes this is true of residential applicants, she says commercial respondents clearly wanted more time to consider an investment in PV. The city also uncovered and corrected hiccups in its planning and development office, with regard to front-line workers and inspectors dealing with the permitting and approval process. It also evaluated the capacity of the solar industry, as well as program design. Daly says research indicated Edmontonians were more amenable, when given the choice, to a lump-sum grant as opposed to a lease. Either way, test marketing showed people want to own the PV systems on their rooftops.

"I think we learned from the pilot what we were hoping to learn around our policies and what the appetite is out there, and what an incentive might look like."

At this point, while Edmonton digests its findings, it is too soon to know whether the city will turn its PV pilot into a full-blown program. Daly speculates, however, that stacking a municipal incentive onto a longer-lived, wider-based incentive "might have legs."

PHOTO COURTESY SUSTAINABLE ENERGY TECHNOLOGIES



SUNERGY Inverter for the Enmax-Paralex Demonstration 10kW rooftop system at Strathcona-Tweedsmuir School, Okotoks, Alberta

APPETITE



10kW Pivot Irrigation System, Picture Butte, Alberta

PHOTO COURTESY SUSTAINABLE ENERGY TECHNOLOGIES

10kW Pivot Irrigation System, Picture Butte, Alberta

Surprisingly, and without direct government involvement, Alberta has a long-term province-wide PV incentive program offered by Enmax Corporation, a private company owned by the city of Calgary. In Alberta's deregulated, competitive electricity market, Enmax is a vertically integrated utility that provides electricity to a provincial customer base. In 2010, Enmax announced it would put solar electric systems "in the homes of its customers at a significantly reduced cost," and declared its goal was to install 8,300 PV modules across the province by 2016. By early 2011 Enmax launched Generate Choice, a program that promised a six-panel 1.3 kW system, valued at \$10,000, for a \$1,500 installation fee and monthly lease payment of \$40, with no option to own.

It is important to note, while there is no direct government participation, Generate Choice is supported by a \$14.5 million contribution from the Alberta Climate Change and Emissions Management

fund, managed by the non-profit CCEMC. The fund was created through provincial government regulation that requires large industrial emitters to meet greenhouse gas reduction targets or, alternatively, make structured payments to CCEMC.

No one from Enmax would be interviewed, but Daly says eight or 10 PV applications related to Generate Choice are now in the Edmonton municipal permitting process. Also, Generate Choice is expected to introduce a lease-to-own option. In fact, while details are not available, Enmax representatives are alerting potential customers to the imminent arrival of this change.

While Generate Choice is the only PV incentive program in Alberta at the moment, that may soon change. Medicine Hat, in the southeast, calls itself "Canada's Sunniest City" and is contemplating the spring rollout of HAT Smart 2.

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Inverters on a 30kW rooftop system, Medicine Hat, Alberta

PHOTO COURTESY GOOSECREEK RENEWABLES



Picture of the inverters on a 30kW rooftop system, Medicine Hat, Alberta

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The original HAT Smart began mid-2008 and concluded March 2011. It offered energy efficiency and renewable energy incentives, both solar thermal and PV, to

While HAT Smart 2 will not offer a 50 per cent PV buy-down, the city has thought carefully about how Generate Choice will fit with whatever it does, and Smith is in favour of the lease-to-own deployment model.

...Research indicated Edmontonians were more amenable, when given the choice, to a lump-sum grant as opposed to a lease. Either way, test marketing showed people want to own the PV systems on their rooftops.

commercial and residential applicants. Another buy-down program, the rebates for residential PV were up to \$6,000 at 50 per cent of installed costs, and 40 systems are now operational. The commercial PV incentive was up to \$20,000, also at 50 per cent of installed costs, and 10 systems are now nearly complete.

“What we were doing was effective,” says **Russ Smith, Medicine Hat manager of energy sustainability.** “It was pretty funding intensive. As a municipality, we cannot continue at that pace, but we wanted to get some active installs in the community, and we’re evolving to some different stuff.”

“We like to think we’re active here,” he says. “We’re resource-rich and policy-poor in Alberta. In the end, good policy attracts investment.”

Harris expects HAT Smart 2 will be welcome news to the Alberta solar industry, and that PV programs with innovative financing options represent the province’s future. Generate Choice, he adds, might attract a different customer than what the industry might normally go after and be able to win.

Given the political situation in Alberta, he says – referring to the impending departure of Premier Ed Stelmach, a Conservative



PHOTO COURTESY SUSTAINABLE ENERGY TECHNOLOGIES

Panels of the Enmax-Paralex Demonstration 10kW rooftop system at Strathcona-Tweedsmuir School, Okotoks, Alberta

leadership race and growing support for the Alberta Wildrose Alliance party – “We’re not going to try to get any provincial policy passed this year.”

“We’re going to take the CanSIA Solar Vision 2025 document and adapt it to the Alberta reality. We want to get this information out to all the new leaders and all the parties, so they all have the right story about solar and what it can do.” ●



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A solar trough in the Nevada desert pointing towards the sun. An approximately 100m x 100m field of a similar type of trough will be installed in Medicine Hat, adjacent to the city's power plant, as a part of the city's Solar Thermal Power Project.

CONCENTRATED ENERGY

MEDICINE HAT TO HOUSE A CANADIAN FIRST

THE ALBERTA GOVERNMENT IS investing \$3 million in a pilot project in Medicine Hat to demonstrate the potential of using solar energy to produce the steam needed to generate electricity, instead of using fossil fuels.

The Medicine Hat Concentrating Solar Thermal Energy Demonstration Project will be the first in Canada to add a solar-powered steam generation system to an existing power plant, allowing the plant's turbines to generate a portion of its electricity from a renewable energy source.

"Alberta has once again set a benchmark for developing energy-

The Medicine Hat Concentrating Solar Thermal Energy Demonstration Project will be the first in Canada to add a solar-powered steam generation system to an existing power plant...

efficiency technology that will help secure a clean energy future," said **Rob Renner, Minister of Alberta Environment and MLA for Medicine Hat.** "This is another step forward in our efforts to reduce greenhouse gases at the source in Alberta."

The Medicine Hat power plant generates electricity for customers within the City of Medicine Hat, Redcliff, Dunmore, Veinerville and outlying rural areas adjacent to the city. The project is expected to be completed by fall 2012.

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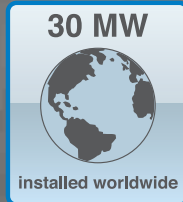
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The solar thermal power demonstration project will be Canada's first commercial-scale demonstration facility using concentrated solar thermal energy.

Solar thermal energy is a carbon-free, renewable alternative to the power generated with fossil fuels. To generate energy, lenses or mirrors are used to focus a large area of sunlight into a small beam. The concentrated heat is then used as an energy source. The technology combines the benefits of solar thermal energy (zero carbon footprint) with the flexibility of a fossil-fuelled power plant. The result will yield a hybrid fossil-solar system capable of producing energy with reduced carbon intensities.

This pilot project will provide a starting point to evaluate the potential use of solar energy in applications beyond power generation with the ultimate aim of reducing greenhouse gases...

This pilot project will provide a starting point to evaluate the potential use of solar energy in applications beyond this type of power generation with the ultimate aim of reducing greenhouse gases in Alberta and Canada. Once completed, it will offer scientists and technicians a strong background in this type of solar thermal technology, which is currently very limited in Canada.

"Medicine Hat is proud to house such an important project in the continued exploration of renewable energy sources," said **Medicine Hat Mayor Norm Boucher**. The project will cost \$9 million in total. The Climate Change Emissions Management Corporation, which administers Alberta's Climate Change and Emissions Management Fund, is directing \$3 million towards the clean energy project and the City of Medicine Hat is also providing \$3 million.

The Government of Alberta's \$3 million comes from its portion of the Canada

ecoTrust program announced in 2007.

"The Medicine Hat Concentrating Solar Thermal project will help us understand how this innovative commercial technology might be applied in northern climates," said **Eric Newell, chair of the Climate Change and Emissions Management Corporation**. "Funding projects like this is one way we can support efforts to develop clean technology and help achieve Alberta's climate change targets."

To develop and support a healthy energy business, in 2005, the Medicine Hat City Council created a \$1-million fund (Nature's Best Reserve Fund) for exploring renewable energy alternatives.

An early application to the new fund was for the Alberta Solar Municipal Showcase project, half funded by the Federation of Canadian Municipalities and supported by Climate Change Central. The city fund covered Medicine Hat's portion of the costs to install a one-kilowatt solar PV system on a municipal building.

Living up to its claim as Canada's sunniest city, it was the first Alberta community to install a solar PV system under the Solar Municipal Showcase. Installed in May 2006, the PV array sits on the roof of the Medicine Hat Public Library, a high-traffic location and a community educational hub. This site provides excellent opportunities to educate residents about alternatives to non-renewable energy sources.

This renewable, environmentally friendly electricity source has helped Medicine Hat better understand the long-term potential of solar PV and complementary technologies such as domestic hot water, aquifer thermal energy storage and swimming pool heating.

"Medicine Hat is proud to be part of the Alberta Solar Municipal Showcase. We believe the future is in using our existing resources wisely, while turning our focus to sustainable alternative energies. Our city has been dependent on natural gas – a non-sustainable resource – for more than 100 years, so we are very interested in pursuing other sources of renewable energy," said **former Mayor Garth Vallely**. ●

ALBERTA'S ECOTRUST PROGRAM

The Medicine Hat project is partly funded by the ecoTrust Program. It is the sixth ecoTrust project announced by the Alberta government. The most recent was a \$25-million investment into Carbon Management Canada, a University of Calgary-anchored, nationwide research network that brings together more than 100 experts to advance clean energy development in Canada.

Enbridge's CO₂ Slurry Pipeline Project received \$1 million to explore ways to compress captured CO₂ into a liquid, pump it through a pipeline to efficiently transport materials over large distances and then store it underground.

A unique international partnership between the University of Alberta and the Helmholtz Association of German Research Centres received \$25 million in provincial support to drive innovation towards cleaner energy production, with particular focus on the province's oil sands.

The Otoka Energy Corporation also received \$20 million to develop a first-of-its-kind waste-to-energy production facility in the Town of Drayton Valley. The project will turn waste from the forestry sector into sellable electricity. The City of Edmonton was awarded \$7.45 million for a renewable energy project that will transfer residual energy from a biofuels facility to heat a neighbourhood in Strathcona County.

The Canadian government established the Canada ecoTrust for Clean Air and Climate Change in 2007 by distributing \$1.5 billion among all the provinces and territories to assist with clean air and climate change initiatives. Alberta's share of the ecoTrust is \$155.9 million. To date, \$81.5 million has been invested into clean energy research and waste-to-energy projects.



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People in the crowd ready to videotape the Closing Ceremonies of the Canada Winter Games, 2011



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Designed by DSRA | Envision Architecture, the 176,000-square-foot sports and recreation facility is the largest of its kind in the Atlantic region. It incorporates 200 solar thermal water panels on its roof and 36 SolarDuct modules preheating the ventilation air for the field house.

CanSIA issued a release making this fact known to the world and the message was quickly picked up by wires and zines reaching the likes of The Energy Store™ and as far as AZOcleantech.

As host facility for the Halifax 2011 Canada Winter Games, the development is a legacy project for the community and region.

The building includes an eight-lane competition pool, a leisure pool with waterslide and deck toys, 52,000 square-foot multi-sport fieldhouse, a 11,500 square-foot health, fitness and wellness centre, a 200 metre six-lane running track, community rooms, and fitness and exercise areas, meeting rooms and offices.

"The Halifax Regional Municipality is to be congratulated for having had the vision to commission such a forward-thinking complex," said **Heather MacAulay, LEED AP, CanSIA Board of Directors (Atlantic Region)**. "The entire facility is designed with an emphasis on energy efficiency and to promote a healthy indoor environment, and the inclusion of solar energy to that end was key."

HRM's commitment to sustainability mandates that all municipal buildings be constructed to a minimum LEED-Silver standard. The Leadership in Energy and Environmental Design green building

standard encourages designers to incorporate on-site energy generation, such as solar air and water heating, so that new facilities like the Canada Games Centre consume 50–60 per cent less energy than older buildings.

"The entire facility is designed with an emphasis on energy efficiency and to promote a healthy indoor environment, and the inclusion of solar energy to that end was key."

— Heather MacAulay, LEED AP, CanSIA Board of Directors

The urban environment presents particular considerations when integrating larger scale renewable energy systems. Space, noise and aesthetic concerns can challenge design teams and building owners. The solar air and water heating systems on the Canada Games facility, projected to deliver 400 MWh/year of solar heat, integrate seamlessly in the built environment. That energy capacity is comparable to the output of three 50kW wind turbines, yet requires no additional development footprint.

"City dwellers exploring renewable energy for their homes and businesses may find a particular location is not conducive to wind, biomass or geothermal applications," but as MacAulay points out "urban or rural, solar is a natural fit...or is easily integrated".

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One Size Does Not Fit All... Customized Solar Mounting Systems

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With stronger solar irradiance than industry leading countries such as Germany and Japan, Halifax presents strong solar potential.

Building designers anticipate that the Canada Games facility's Veissman flat plate collectors will deliver 1,200 GJ toward annual water heating needs. The rooftop SolarDuct ventilation air pre-heating system is designed to heat 9000cfm of Halifax sea air and reduce the required energy load by an estimated 66 MWh annually.

"The adoption of solar heating technology is a very cost-effective measure," said **Richard MacLellan, SEMO (Sustainable Environment Management Office) Manager, Halifax Regional Municipality.** "In this building – where the use of hot water is quite high – there was a large opportunity for savings by reducing the long-term operating costs on the facility. We'll be continuing to explore the most innovative and promising renewable technologies on any of our projects going forward to continue to see what makes the best sense to adopt."



Figure skating pairs, Halifax 2011

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Halifax Mayor Peter Kelly, Premier Darrell Dexter and Defence Minister Peter MacKay unveiled the \$45-million venue at the beginning of the year.

The Canada Games are a national, multi-sport competition for young Canadian athletes who represent a total of 10 provinces and three territories in 20 different sports, including sport events for athletes with a disability.

The Games have become a stepping stone for many of Canada's celebrated athletes and Paralympic and Olympic champions, including: Hayley Wickenheiser, Steve Nash and Nova Scotia's own Sidney Crosby.

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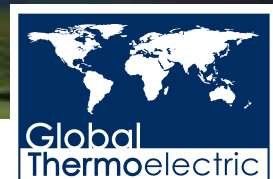
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STATING OUR CASE

CanSIA ASKS PROVINCIAL GOVERNMENTS TO GROW SOLAR INDUSTRY THROUGH SOUND POLICIES

By Nick Gustav

AS GOVERNMENTS AROUND THE

globe tighten their belts to deal with budget shortfalls, investments in tomorrow often take a back seat to the urgency of today. To combat this problem, CanSIA is making its case to provincial governments across Canada, touting the solar industry's ability to create well-paying jobs and tackle environmental problems such as climate change.

After all, with budgets, as in life, you might not get everything you ask for, but if you don't ask for it, you surely won't get it.

Wes Johnston, CanSIA's director of policy and research, said the association prepared pre-budget submissions for several provinces' ministries of finance in February, making the case for budgetary provisions that would benefit the solar industry. The policy recommendations were the result of CanSIA members coming together to form working groups and create a set of proposals they call could stand behind.

Johnston said working groups have been formed in Ontario, British Columbia and Alberta and efforts are underway to create one in Saskatchewan and another for the Atlantic provinces.

"We're making a more concerted effort to communicate with the provincial governments," Johnston said. "We have members in pretty much every province across Canada and we're reaching out now. As our membership continues to grow, we're trying to expand the reach of CanSIA and really trying to bring solar to all provinces across Canada."

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Johnston said that after the pre-budget submissions are made, CanSIA tries to arrange for a formal meeting with government officials so it can illustrate the benefits of solar. In February, for example, CanSIA presented a 12-page pre-budget submission for the Ontario Ministry of Finance outlining short-, medium- and long-term policy recommendations that would benefit the industry and Canadians at large.

In the submission, CanSIA points out that the 2009 Ontario Green Energy and Green Economy Act provided a framework to create 50,000 jobs for Ontarians in its first three years while fostering a culture of conservation. The solar-thermal market grew by 35 per cent globally in 2008, and by continuing to invest in the industry, the province can become a world leader in green energy.

In its Ontario proposal, CanSIA recommended the following:

- Implementing a two-year continuation of the Ontario Solar Thermal Heating Incentive in conjunction with a residential solar-thermal program operating independent of the federal government and administered by the Ontario Ministry of Energy and Infrastructure, with an annual investment of \$5 million. Such a program would help lower the upfront capital investment required by homeowners and business owners to go solar.
- Implementing a conservation program whereby solar-thermal energy technologies are used to displace the use of electric hot water in Ontario. This program could be administered through the Ontario Power Authority in conjunction with similar electricity-conservation programs and expanded to included residential applications.
- Reconvening the Ontario Solar Task Force, including government and industry stakeholders, and building upon its initial findings to explore new ways to integrate solar thermal into Ontario's culture of conservation.
- Implementing a carbon-neutral policy related to all government buildings and operations in an effort to lead by example.
- Establishing a solar-energy research institute to leverage the current base of high-quality university and commercial research and development. This institution should support high-level research and development and forge relationships with the industry to commercialize intellectual property. This

institute could be similar to the Wind Energy Institute of Canada on Prince Edward Island.

“Each submission is tailored to the provinces to some degree, but there’s definitely some overlap as well,” Johnston said. “One of the main things that we’re looking for is a program that will help lower the upfront costs of solar energy and enable consumers, households and businesses to adopt solar into their homes and buildings. Consumer incentives make it easier for people to invest in solar and take advantage of the environmental benefits that it provides.”

CanSIA’s 14-page pre-budget submission to Nova Scotia’s Department of Finance also included five recommendations:

- Including solar-thermal water and air on the lists of approved measures for all provincially funded programs investing in energy efficiency, sustainability and job creation. A minimum annual investment of \$2 million targeted at solar-thermal implementation is recommended.
- Expanding energy-efficiency incentive programs to include all forms of base energy displaced and not just electricity.
- Implementing a carbon-neutral policy for all provincial government buildings and operations.
- Creating a solar-energy task force to ensure that solar energy plays a significant role in Nova Scotia’s future energy mix.
- Establishing a chair in solar-energy research.

Heather MacAulay, a CanSIA board member and the president of Halifax, Nova Scotia-based My Generation – Green Energy, said one current obstacle in Nova Scotia is that the province’s incentive programs target only energy-efficiency projects that offset electricity use, and in Nova Scotia, oil is the primary heating fuel.

“That leaves an awful lot of folks out in the cold, pardon the pun,” she said. “The programs shouldn’t only support folks that are offsetting electricity costs, particularly when you’re looking at programs targeting business owners and owners of commercial buildings. If you put two competitors side by side and one of them is eligible for some incentives that will help them cut their energy costs and the other one isn’t because they’re using oil, that certainly provides a competitive advantage to the electricity users and a disadvantage to the oil users that shouldn’t be there.”

MacAulay also said CanSIA has recommended changes to building codes that would benefit the industry.

“Currently, building homes to the standard that’s known as ‘solar-ready’ is recommended, though not required, and we’ve made the recommendation that solar-ready be required in the next incarnation of the building code,” she said. “If you’re trying to retrofit a building, it becomes much more labour-intensive and expensive, and in some cases, it might not even be possible. So, this way, future homeowners will have the option to go solar. We’re confident this is a change that’s going to happen.”

Johnston said that in today’s difficult economic climate, it can be hard to persuade government officials to find money for forward-looking programs. But one advantage

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CanSIA has is the fact that the solar industry's success directly and demonstrably benefits provinces.

"A lot of what we're recommending in our pre-budget submissions really taps into what the provinces are trying to achieve," Johnston said. "No. 1 is job creation. That is one of the overriding objectives for all governments at this time, so that's a key thing that the solar-energy industry can contribute toward. And the environmental

aspects are key for all provinces as well. As they try to lower their carbon footprint and become more sustainable, solar

energy definitely can play a key role in that.

"And if we look at the global picture, this industry is growing at such a pace that it's a matter of us being a part of it and trying to be leaders or instead being laggards and having the rest of the world lead us.

"...Building homes to the standard that's known as 'solar-ready' is recommended, though not required, and we've made the recommendation that solar-ready be required in the next incarnation of the building code..."

— Heather MacAulay, CanSIA Board Member

Provinces can play a very proactive role in terms of tapping into this high-growth industry, which is creating new jobs." ●

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SETTING THE STANDARD

CanSIA'S WORK ON CSA COMMITTEES GIVES THE INDUSTRY A VOICE

By Nick Gustav

IF YOU BELIEVE THAT you can judge an industry by the standards it sets for itself, then prepare to give CanSIA and the solar industry high marks.

Wes Johnston, CanSIA's director of policy and research, represents the association on the Solar Photovoltaic Technical Sub-Committee, which operates under the Canadian Standards Association's Technical Committee on Industrial Products (C232). As chairman of the subcommittee, Johnston works with industry stakeholders on key objectives such as the adoption of the IEC 61730 international standard.

The IEC 61730 standard, known as the "photovoltaic module safety qualification," consists of two parts – requirements for construction and requirements for testing.

Part 1 defines the mandatory design characteristics of the modules (such as the minimum distance of conductive parts from the module edges and the wall thickness of the junction boxes) as well as requirements on the materials used in the module (UV stability, temperature parameters, protection class, etc.).

Part 2 defines three different application classes for a module design (general applications, restricted access and low-voltage applications), specifying the type of use, the related qualification tests and the resulting safety class.

Johnston said the subcommittee began work on the adoption of IEC 61730 in January and he expects it to be adopted later this year.

"This is an international standard regarding the safety of PV modules that has been adopted throughout most other countries, so this is one of the key objectives of this committee," Johnston said. "Essentially, this helps to streamline Canada with the rest of the world in terms of safety standards and helps remove trade barriers."

The Solar Photovoltaic Technical Sub-Committee also played a role in the development of the new CSA F378 series of standards, which address solar collectors. Part 1 of the standards focuses on glazed and unglazed liquid-heating solar collectors capable of being tested as independent units with forced circulation of the heat-transfer fluid. Part 2 focuses on glazed and unglazed

"By creating that higher standard, you create greater confidence in the marketplace. The fact that we're meeting these standards can give consumers and government officials more comfort that high safety standards are being met."

— Wes Johnston, CanSIA's Director of Policy and Research

air-heating solar collectors capable of being tested as independent units operated in either open- or closed-loop systems.

"Canada actually created the first standard for solar air collectors," Johnston said. "It's the first of its kind in the world and many countries are looking to Canada to see what we've done. We're really a leader in that area."

The Solar Photovoltaic Technical Sub-Committee serves as a direct link between the photovoltaic industry and the development

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and adoption of photovoltaic standards in Canada. The subcommittee bridges several other committees that deal with standards affecting the industry.

For example, photovoltaic standards currently are under the jurisdiction of the CSA's Technical Committee on Solar Energy (C420), while standards for photovoltaic products are under the jurisdiction of the Canadian Electric Code. Electrical safety and performance standards are the responsibility of the Technical Committee on Industrial Products.

"This subcommittee is really seen as being the hub of the PV standards throughout the CSA organization," Johnston said. "A lot of the PV standards are not under one umbrella, so we see this committee as being the hub of all those different PV standards. We're looking to create relationships and liaisons with those different committees so the solar industry has a stronger voice in advocating for changes or amendments that need to be made with those PV standards and just to make sure that they're up to date."

Johnston said it's important that solar-industry stakeholders be represented on CSA committees so their input is considered when it comes to the development and adoption of standards.

"CanSIA is playing a leadership role here," he said. "We definitely are involved in most committees, if not all committees, and we're really trying to ensure that CanSIA members play a vital role within these committees to ensure that industry needs are being met and the safety standards are being met as well."

Johnston said the adoption of high standards benefits the industry in several ways.

"By creating that higher standard, you create greater confidence in the marketplace," he said. "The fact that we're meeting these standards can give consumers and government officials more comfort that high safety standards are being met."

"At the same time, it ensures that all manufacturers are meeting that standard and it helps to reduce trade barriers when everybody's meeting the same standards. The solar industry is a global industry, so the more harmonization with standards, the more beneficial it is to the overall global industry." ●



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CanSIA RESTRUCTURES CAUCUSES AND WORKING GROUPS

CanSIA CAUCUSES AND WORKING Groups have long been recognized as an effective means of refining, communicating and advocating the priorities of Canada's solar industry to governments and other stakeholders.

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2011 CanSIA Board Caucuses and Working Groups

CAUCUS	CURRENT BOARD SPONSOR	CAUCUS CHAIR	CANSIA STAFF LIAISON
Ontario PV	Michelle Chislett (International Power Canada Inc.)	Michelle Chislett (interim)	Emily Wood
Manufacturers	Jonathan Weisz (Torys LLP)	Jonathan Weisz (interim)	Wes Johnston
BC Solar	Dave Egles (Home Energy Solutions)	<i>To be determined</i>	Patrick Bateman
Alberta Solar	Dave Egles (Home Energy Solutions)	Brent Harris (Sustainable Energy Technologies)	Patrick Bateman
Solar Thermal	Heather MacAulay (My Generation)	Heather MacAulay (interim)	Patrick Bateman

WORKING GROUP	CAUCUS	WORKING GROUP CHAIR	CANSIA STAFF LIAISON
REA	Ontario PV	James Pagonis, SkyPower Ltd.	Emily Wood
Rooftop	Ontario PV	Bryan Bentrott, SunEdison	Emily Wood
MicroFIT	Ontario PV	Bob Waddell, Centrosolar Canada Inc.	Emily Wood
Technical	Ontario PV	David Wills, Axio Power	Emily Wood
CFIT	Ontario PV	Chris Stern, Pure Energies	Emily Wood
Solar Thermal Air	Solar Thermal	Chris Vachon, Enerconcept Technologies Inc.	Patrick Bateman
Solar Thermal Water	Solar Thermal	To be determined	Patrick Bateman

WANT TO LEARN MORE?

Caucus

As an ad hoc group constituted by the CanSIA Board, it examines commercial issues of interest to a specific segment (i.e., technology, geography) of the Canadian solar industry.

Caucuses work to engage CanSIA members on important issues that further the business objectives of members; and it facilitates staff analysis, external information and industry perspectives to advocate to stakeholders on issues that are vital to the interests of members.

Working Group

As an ad hoc group established by a proposal of one Caucus and constituted by the CanSIA Board, it addresses a specific problem or issue by further engaging CanSIA members – within the structure of an existing Caucus – to further the objectives of the Caucus. The Working Group integrates staff analysis, external information and industry perspectives to make recommendations to the Caucus and the Board on issues that are vital to the interests of CanSIA members.

In effect, a Working Group is a “Task Force” that is created as an outcome of Caucus discussions. The need to create a Working Group is driven by the sense of urgency felt by the Caucus. To the extent that Caucus issues and concerns are typically complex in nature (i.e. covering large geographies, multiple business interests or diverse technologies/products), the Caucus may wish to establish a Working Group to address one specific element of the Caucus agenda. This arrangement further concentrates CanSIA resources to achieve results.

Alternatively once the issue identified by the Caucus ceases to exist, the Working Group can be disbanded and efforts concentrated in another area. The structure and processes of Working Groups are very similar to Caucuses – except in their relationship with the Caucus and communication with the Caucus Chair in the work they do.

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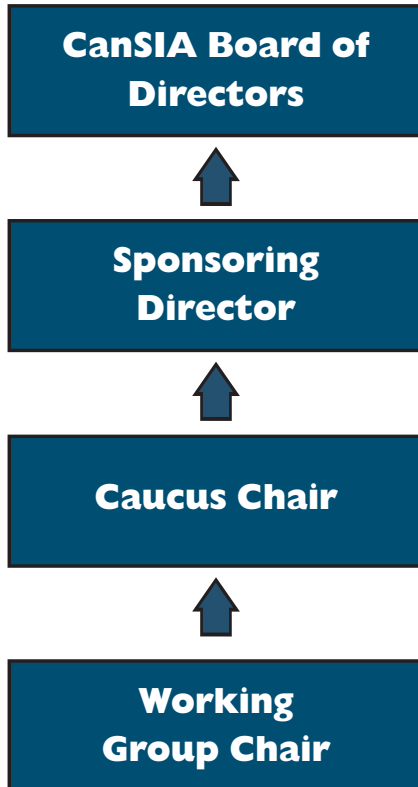
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As the solar market accelerates in Canada, so should CanSIA members enhance their voice and presence on matters of common interest. To this end, on Jan. 21, 2011, CanSIA's Board of Directors ratified new procedures to ensure Caucuses and Working Groups grow and strengthen.

Caucus / Working Group Authority Flow Chart



New procedures have been formalized, under which Caucuses and Working Groups will place a greater emphasis on member-driven action. Terms of Reference for each Caucus and Working Group has been approved, including identification of one Sponsoring Board Director and specific duties of the designated Caucus/ Working Group Chair.

All CanSIA members can read the Terms of Reference documents associated with each Caucus and Working Groups at www.cansia.ca. These documents explain the structure and functioning of these CanSIA organizations and the processes put in place to ensure they operate efficiently and quickly. ●



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CLEAN ENERGY FUND ANNOUNCEMENT IN BRITISH COLUMBIA

CanSIA WAS PLEASED TO see the federal government recognizing the value of solar energy with its announcement of \$3.9 million from Natural Resources Canada's Clean Energy Fund for the City of Colwood's community-scale solar project, early in the year. It cautioned its support with hopes the program, which has been sunsetted, would be extended.

"The government is to be congratulated for its announcement and encouraged to continue to take proposals for this fund," said **Elizabeth McDonald, CanSIA President**. "Canada needs a strong commitment to renewable energy and we look forward to seeing this government put forward a clean energy policy that will be the platform from which Canadians can see the country take its place setting an example around the world for clean energy production," said McDonald.

"Investing in clean energy technologies stimulates the growth of a domestic clean energy industry, creating high-quality jobs

for Canadians," said **Honourable Gary Lunn, Minister of State (Sport)** during the announcement in British Columbia.

"We are aiming to help retrofit up to 1,000 Colwood homes with solar hot water and other clean energy upgrades over the next three years."
— David Saunders, Mayor of the City of Colwood

The funding is to develop a multi-faceted plan for the community that includes retrofitting municipal buildings with solar energy, working with developers to build new model energy-efficient buildings, working with homeowners to retrofit up to 1,000 homes, and install

electric vehicle-charging infrastructure throughout the city.

"We are aiming to help retrofit up to 1,000 Colwood homes with solar hot water and other clean energy upgrades over the next three years," said **Mayor David Saunders**. "Solar Colwood incentives will cover a significant portion of the cost of installation of solar hot water heating. Our mission is to help residents and business owners achieve significant savings on their energy bills at a time when costs are on the rise."

In the month after the announcement, nearly 100 people had already signed up online for more information about home retrofits. The program offers financial incentives to homeowners to have solar panels on their roof heating their household water.

The first 10 homes retrofitted will be given \$3,800 towards the costs and the next 200 will get \$3,000. **Colwood City**

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PHOTO COURTESY KEN GARY, PHOTOGRAPHER

David Saunders, Mayor of the City of Colwood; Judith Cullington, Colwood City Councillor; Gary Lunn, the Minister who made grant announcement



PHOTO COURTESY KEN GARY, PHOTOGRAPHER

Ironically enough, the announcement of the solar grant took place on a rainy day



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J. Scott, the BC Representative of CanSIA

Councillor Judith Cullington said the first 10 to receive new water heaters will be selected by lottery after the project's official launch in May.

"Everyone who has signed up so far will have an equal chance of getting the greater incentive if their homes qualify," Cullington said, noting that a home must have a south-facing roof that receives sunlight from 10 a.m. and 4 p.m. to take part in the program.

J. Scott, CanSIA's representative in BC said there is a common misconception that BC doesn't get enough sun to support solar energy.

"Because solar collectors work with UV rays from the sun, you can heat your water even on overcast days," she said, pointing out that Victoria (immediately adjacent to Colwood) actually receives more sun than Germany, the current world leader in solar energy.

When solar hot water is installed in a home, it uses a pre-heat tank which runs alongside the existing water heater, so there will still be hot water even at times when there isn't enough sun.

"You never need to worry about running out of hot water," Scott said. "You get free hot water with the sun's energy, but your domestic hot water tank will kick in when it is needed." ●

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CanSIA Solar Membership Continues to Grow



“CanSIA offers firms in Canada an informed and credible voice, one that gets heard by governments and strengthens public awareness about the advantages of solar,” said **CanSIA Chair Jon Kieran**. “On the international front, CanSIA is a respected ‘first point of call’ among global solar firms that seek to participate in Canada’s expanding solar market. CanSIA’s service commitment to members and its ability to engage policy makers explains the rapid growth of interest in our association.”



“Governments across Canada and around the world see that solar energy is the key to economic stimulus. Our growing membership is proof of the possibilities that lie in our industry,” said **CanSIA President Elizabeth McDonald**.

New Corporate 1 Members¹



Advanced Energy is a global leader in innovative power and control technologies for high-growth, thin-film manufacturing and solar power generation. Specifically, AE targets solar grid-tie inverters, solar cells, semiconductors, flat panel displays, data storage products, architectural glass and other advanced product applications.

www.advanced-energy.com



Ameresco Inc. is the leader in providing sustainable renewable energy solutions to clients across the education, health care, government, social housing, commercial and industrial sectors. From solar photovoltaic to solar thermal solutions through its two solar technology divisions, Ameresco develops affordable green solutions to meet customers’ energy needs. Ameresco’s renewable energy and solar solutions provide our customers with pollution-free, sustainable forms of energy but also price stability. With more than 35 years of experience in energy services, Ameresco has constructed billions in successful energy projects.

www.ameresco.ca



A vertically integrated manufacturer of solar silicon, wafers and high-performance cells, Calisolar

has manufacturing operations and headquarters in Sunnyvale, California; silicon purification operations at the company’s wholly owned subsidiary located in Ontario, Canada; and a state-of-the-art research and development center in Berlin, Germany.

www.calisolar.com



Toronto-based Celestica delivers innovative manufacturing

and supply chain solutions that accelerate our customers’ success in the Ontario solar market. Through our extensive experience in advanced electronics, we deliver a broad range of scalable services including global supply chain management, process development, design, lean manufacturing and product qualification. We are solid partners who are committed to helping our solar customers stay ahead of the technology curve, rapidly innovate and get to market quickly, while reducing costs and improving quality.

www.celestica.com



DEGERenergie Germany is the global market leader in solar tracking systems, with more than 30,000 systems installed in 38 countries. The focus of DEGERenergie’s activities is the design, development and production of tracking systems to control photovoltaic modules in solar technology systems. These tracking systems maximize solar energy, achieving increased energy yields of up to 45 per cent. In 2001, the German state of Baden-Württemberg presented its Inventor Award to the patented control module DEGERconecter: today, more than 57,000 units have been deployed worldwide.

www.DEGERenergie.com



Eaton’s Electrical Sector is a global leader in power distribution, power quality, control and automation, and monitoring products. When combined with Eaton’s full-scale engineering services, these products provide customer-driven PowerChain Management® solutions to serve the power system needs of the data centre,

industrial, institutional, public sector, utility, commercial, residential, IT, mission critical, alternative energy and OEM markets worldwide. PowerChain Management solutions help enterprises achieve sustainable and competitive advantages through proactive management of the power system as a strategic, integrated asset throughout its life cycle, resulting in enhanced safety, greater reliability and energy efficiency. www.eatoncanada.ca



EllisDon is an employee-owned company that completes in excess of \$2.5 billion in new construction annually and delivers construction expertise to clients throughout the world. The company offers not only construction and project management but also a growing range of construction consulting services in risk management and technology such as BIM Modelling, ICT and Renewable Energy. www.ellisdon.com



Eltek Valere is a leading global provider of high-efficiency energy solutions, with over 40 years

of experience offering reliable power conversion systems. Eltek Valere proudly offers the Theia HE-t family of isolated PV inverters suitable for the Ontario microFIT program, featuring efficiency exceeding 97 per cent, and built-in webserver for monitoring and control. With North American headquarters in Richardson, Texas, Eltek Valere employs over 2,200 employees globally with sales in over 100 countries. www.eltektvalere.com



Enfinity is a global renewable energy leader in the finance, design and construction of PV systems for institutional building owners and financial

partners. Worldwide Enfinity exceeds 4,000 MW offering unsurpassed access to technical and financial expertise in creating turn-key PV systems for both rooftop and ground mount projects. In Ontario since 2008, Enfinity has over 30 MW of fully permitted PV projects through its comprehensive rooftop and land lease model. The Canadian team understands the unique constraints of the Ontario climate and creates robust systems providing stable revenue and building safety at no cost to the building owner. www.enfinity.ca



International Power Canada (IPC) is the Canadian subsidiary of International Power PLC, a global power generation company with over 32,000 MW of power generating capacity in 21 countries around the globe. IPC is a renewable power developer, owner and operator-based in Toronto, Ontario, which takes wind and solar power projects from initial concept through testing and permitting to construction and operation. To date, IPC has brought nine projects totaling 180 MW to operation in Canada, of which eight projects (80 MW) are owned and operated by IPC. An additional three projects (totaling 75 MW) are went to construction in 2010. www.iprcanada.com



LDK Solar is one of the largest vertically integrated manufacturer and largest multi-crystalline wafer producer and supplier in the world. Today LDK Solar manufactures polysilicon, mono and multi crystalline ingots, wafers, cells and modules as well as engaging in project development activities in selected segments of the PV market. Our unique vertical integration manufacturing system ensures that we can tightly control our materials and production quality, offering

customers leading product durability and sustainable performance. www.ldksolar.com



Navigant Consulting Inc. (NCI) is a NYSE-traded company with approximately 1,700 consultants, located in North America, Europe and China. In 2009 its revenues were US \$707 million. The Energy practice – its largest industry practice with over 270 consultants – makes it one of the largest energy-consulting firms in the world. NCI is also a leading consulting firm in renewable energy and energy efficiency, and its staff has provided consulting services in this area for more than 25 years to manufacturers, utilities, government agencies and financial institutions. www.navigantconsulting.com



The PCL family of companies is a group of independent construction companies with an annual construction volume of more than \$6 billion, making them the largest contracting organization in Canada and one of the largest in the U.S. PCL's century-long track record of adapting to market need to provide top-quality construction in a wide range of applications has positioned them to also take the lead in the rising field of alternative energy, providing EPC and BOP construction services for customers in wind, solar, hydropower and bioenergy. www.pcl.com



Power-One designs and manufactures energy-efficient power conversion and power management solutions, including its Aurora range of power inverters for alternative/renewable energy (solar and wind) as well as products for routers,

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We just don't promise, we deliver

From this spring, Silfab Ontario delivers a wealth of good news:

- a new 90 MW manufacturing plant slated to ramp up to 180 MW
- 30 years of experience in high-efficiency photovoltaic modules production brought by a team of international founders
- a production process 100% compliant with the domestic content of Ontario's FIT program
- CSA UL-ULC certified mono and multi-crystalline high-efficiency modules with a proven, decades-long track record
- an OEM partnership program that provides an immediate and strategic access to the Ontario photovoltaic market
- mono-axial sun trackers that improve ground-mounted PV systems output by 25-30%.



Silfab Ontario Inc. • 240 Courtney Park Drive East
Mississauga, ON L5T 2S5 (Canada)
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data storage and servers, wireless communications, optical networking, semiconductor test equipment, industrial markets and custom applications. Power-One, with headquarters in Camarillo, Calif., has global sales offices, manufacturing and R&D operations in Asia, Europe and the Americas and is a public company listed on NASDAQ under the ticker symbol PWER.

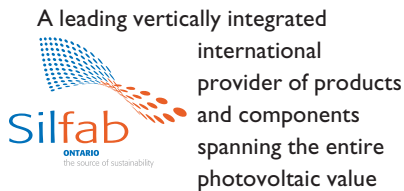
www.power-one.com



Premier Solar Inc. is Canada's premier solar provider specializing in residential gridtie and offgrid systems; commercial power generation and supplementation with solar energy.

Premier Solar provides turn-key solutions (with financing) including consultation, design, materials, engineering, permits, installations and inspections of photovoltaic solar systems. Canada's largest network of trained dealers allows Premier Solar to serve Canadian customers locally.

www.premiersolarinc.com



A leading vertically integrated international provider of products and components spanning the entire photovoltaic value chain is nearing completion of a 180 MW solar module manufacturing plant in Ontario slated in early 2011. Silfab Ontario will share part of its production capabilities with domestic and international OEM partners seeking to enter the Ontario solar market with Canadian certified products. Silfab Ontario is also licensed to assemble and distribute sun trackers in Canada and the U.S.

www.silfab.eu



A large-scale photovoltaic panel manufacturer, with a 20,000 square-

foot manufacturing facility just north of Toronto offering high quality PV crystalline modules. The current annual capacity is 20 MW of PV power production. Professional staff offer extensive experience in the PV manufacturing industry and PV module fabrication process and are strongly committed to continually producing the highest quality solar module in Canada. A strategic alliance with Kvazar, Ukraine's largest PV solar cell manufacturer, gives Solgate a high quality silicon cell supply and access to industry-specific technical expertise going back to 1961.

www.solgate.ca



One of the world's leading providers of dual-axis tracking photovoltaic systems. The astronomic solar power systems controls, developed in an exclusive cooperation with SMA Solar Technology AG, ensure optimum alignment of the solar generators all day long. The company's high-precision tracking systems enable stable and reliable solar power output that outstrips fixed installations by up to 45 per cent. sonnen_systeme Projektgesellschaft mbH offers direct sales to system partners as well as complete turnkey solutions for solar parks.

www.sonnen-systeme.de



Suntech Power Holdings Co., Ltd. (NYSE: STP) is the world's leading solar energy company as measured by production output of crystalline silicon solar modules. Suntech designs, develops, manufactures and markets premium quality, high-output, cost-effective and environmentally friendly solar products for electric power applications in the residential, commercial, industrial and public utility sectors. Suntech offers an extensive range of customer-centric innovations, including its patent-pending Pluto technology for crystalline silicon solar cells, which improves power output by up to 12 per cent compared

to conventional production methods, its Reliathon™ module and platform, the industry's first fully integrated utility-scale solar platform and its broad range of building-integrated solar products.

www.suntech-power.com



www.solarworld-usa.com

The SolarWorld group is a worldwide leader in offering brand-name, high-quality, crystalline solar-power technology. Its strength is its fully integrated solar production, from silicon as a raw material to turn-key solar systems, including recycling. With headquarters in Bonn, Germany, the company operates production sites in Germany, the U.S. – the company is the largest and oldest solar manufacturer in the Americas – and South Korea. Worldwide, SolarWorld employs more than 2,700 people. Since 1999, SolarWorld AG has been quoted on the Frankfurt Stock Exchange.

www.solarworld-usa.com



Unirac is celebrating its 10th anniversary in the solar racking industry. Unirac was incorporated in 1999 and quickly became the industry leader with a reputation for superior mounting solutions, responsive support and outstanding services. Speed and high-quality residential and commercial installation options are the trademarks of all the company's PV mounting solutions. Unirac delivers innovation, on time and with award-winning results.

www.unirac.com

In order to qualify as a Corporate 1 member, companies must have more than 25 employees or revenue of more than \$3 million per year. ●

¹As of Jan. 31, 2011
* Moved up to Corporate 1

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WHAT CanSIA DOES FOR YOUR ORGANIZATION



The Canadian Solar Industries Association (CanSIA) is a national trade association that represents more than 650 solar energy companies throughout Canada. Since 1992, CanSIA has worked to develop a strong, efficient, ethical and professional Canadian solar energy industry with capacity to provide innovative solar energy solutions and to play a major role in the global transition to a sustainable, clean-energy future. The services that CanSIA provides to the Canadian solar industry include:

Government Relations and Lobbying

CanSIA engages its member-base, government and industry stakeholders collaboratively to develop and expand solar markets and industry capacity. CanSIA regularly represents the industry to the Federal Government and its standing committees and maintains close contact with all key bodies and agencies. CanSIA is intimately involved in the on-going development of Ontario's Feed-In Tariff program and with provincial governments and municipalities across Canada. CanSIA also works in a network with the Canadian Hydropower, Wind Energy and Geothermal trade associations to collaboratively pursue and improve renewable energy policy in Canada.

Public Awareness, Advocacy and Consumer Support

CanSIA's publications, external communications and advocacy campaigns educate the public, press and politicians about the truths, benefits and possibilities for solar energy.

Press and Media Relations and Marketing

CanSIA is a valuable contact for the media. CanSIA also assists members to release their news items through its database of media connections. Through CanSIA, each and every member also has the means to communicate directly to potential customers and other stakeholders via: the *SOLutions* magazine, Solar Beat newsletter (bi-monthly publication), *Canadian Solar Industry Directory*, Solar brochures and fact sheets and CanSIA's website.

Standards, Codes and Regulations Development

CanSIA represents the industry for the development of solar standards, codes and regulations.

Education and Training

CanSIA has worked with the Association of Canadian Community Colleges (ACCC) to develop solar college curriculums that are now freely available to all community colleges across Canada. CanSIA is currently analyzing and exploring options with solar industry members, various stakeholders to improve solar installer certification programs in Canada.

Events

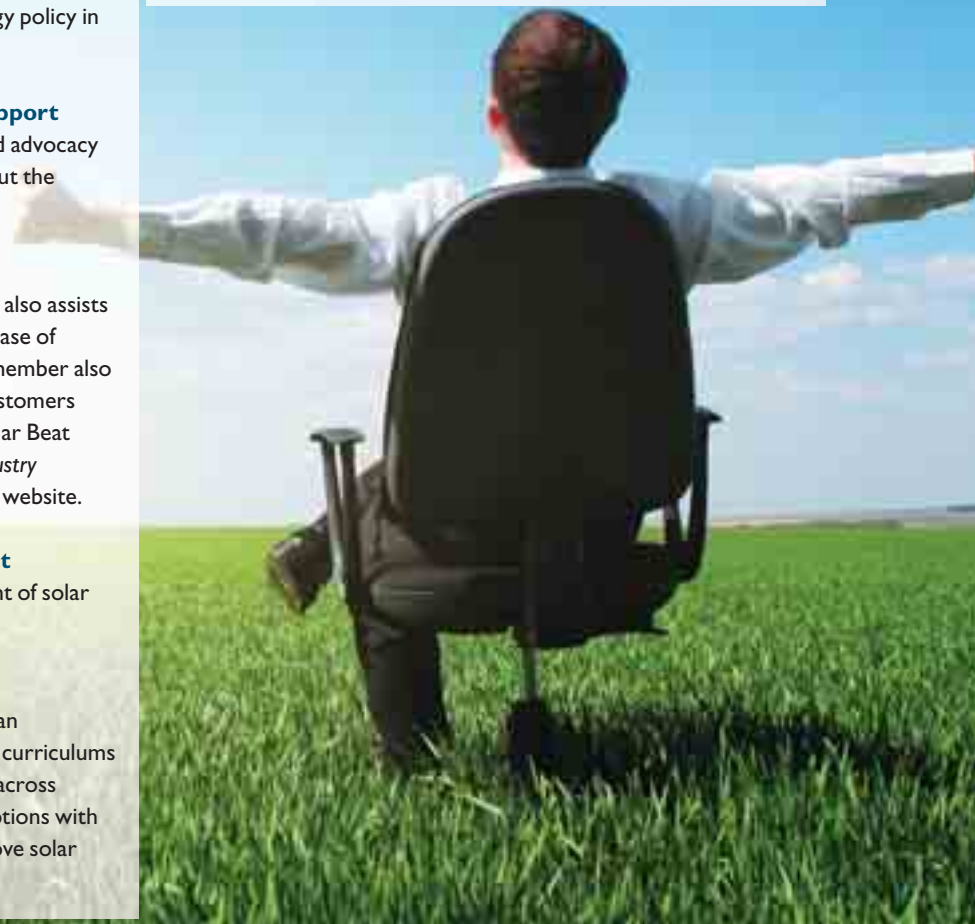
CanSIA's events are highly popular and successful in showcasing members and giving exposure to the industry: Solar Canada: Annual Conference and Exposition, Solar Ontario and Solar West regional conferences, Summer Solstice industry celebration and other networking events.

Additional Benefits to CanSIA Members:

Hundreds of public and industry inquiries received each month are referred to the member base. Business and employee benefit insurance program options. TD Canada Trust consumer financing. Discounts on merchandise and event attendance.

For further information on CanSIA membership and how to apply, visit www.cansia.ca or contact Sharon Chester, Member Services Administrator at 613-736-9077, ext. 222 or sharonchester@cansia.ca.

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The revolutionary GS-300s highly-concentrated photovoltaic (HCPV) system is the world's only CPV solution that can be installed in the fields, on rooftops or on carports. The GS-300s integrates ultra- high-efficiency modules, dual-access tracking, micro-converter technology, wireless communication and built-in performance monitoring into one elegant turnkey solution. The GS-300s produces cost-competitive solar power with the lowest installation and maintenance costs in the industry.

Why Concentrated PV?

CPV systems use less land and have a lower cost of energy than comparable photo voltage or thin film installations. These important CPV advantages enable better land or roofspace use, higher energy production, and ultimately greater return on your solar investment.

Green Syndications' GS-300s

The GS-300 features a low profile design that is aesthetically appealing. Through the combination of The GS-300s' 29% efficiency, dual-axis tracking and superior temperature performance, a 30% increase in annual electricity production can be expected over traditional 33°-tilt PV systems (installed Watts). For rooftops, where PV tilt is only 5°, annual kWh production ratio can be as much as 40% higher than traditional silicon PV.

Benefits of CanSIA Membership

	Advocate	Supporter IV	Supporter III	Supporter II	Supporter I	Corporate IV	Corporate III	Corporate II	Corporate I
Annual Fee	\$50/\$100	\$250	\$400	\$1,000	\$2,000	\$440	\$920	\$1,800	\$6,250
SOLutions (print magazine)	•	•	•	•	•	•	•	•	•
Solar Beat newsletter	•	•	•	•	•	•	•	•	•
Members web access	•	•	•	•	•	•	•	•	•
Merchandise and training discounts	•	•	•	•	•	•	•	•	•
Discount registration to conference	•	•	•	•	•	•	•	•	•
Membership Directory listing		•	•	•	•	•	•	•	•
Members Forum	•	•	•	•	•	•	•	•	•
Business and Employee Benefit Insurance Program Options		•	•	•	•	•	•	•	•
*** TD Canada Trust Consumer Financing to CanSIA members		•	•	•	•	•	•	•	•
Participation in CanSIA Caucuses and Working Groups						•	•	•	•
Code of Ethics						•	•	•	•
Able to vote on association issues						•	•	•	•
15% discount on SOLutions advertising						•	•	•	•
15% discount on exhibition space at the Solar Conference						•	•		
Link to your website on CanSIA's home page					•			•	•
Logo on CanSIA website and various publications					•			•	•
Participation in solar leadership events								•	•
25% discount on exhibition space at the Solar Conference									•
Complimentary business card ad in SOLutions									•
20% discount on exhibition space at the Solar Conference								•	

***Members must meet certain criteria. Does not include companies in Quebec.

Voting

- **Corporate I:** 25+ employees or revenue > \$3 million – \$6,250
- **Corporate II:** 6–24 employees or revenue > \$1 million – \$1,800
- **Corporate III:** 3–5 employees – \$920
- **Corporate IV:** 1–2 employees – \$440

Non-Voting

- **Supporter I:** Large government departments, utilities and energy regulators – \$2,000
- **Supporter II:** Small government departments and small local energy distribution companies – \$1,000
- **Supporter III:** Large non-profit organizations and educational institutions – \$400
- **Supporter IV:** Small non-profit organizations and community groups – \$250
- **Advocate/Individual:** Anyone not involved in commercial gain from the industry – \$100

The fees above are for the full year (July to June). Depending on when you join, the website will show the pro-rated amounts (in blue).



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Let your elected official know the importance of Solar becoming an important part of your energy needs and lifestyle. Participate in this important discussion that directly impacts your local community.





CanSIA Solar West
May 30–31, 2011
Vancouver, British Columbia, Canada

InterSolar
June 8–10, 2011
Munich, Germany

Solar Investment Forum @ Intersolar
June 8, 2011
Munich, Germany

Solar Taiwan 2011 – The 5th Int'l Photovoltaic Exposition
June 14–16, 2011
Taipei, Taiwan

CanSIA Summer Solstice
June 21, 2011
Toronto, Ontario, Canada

Clean Energy Expo China 2011
June 24–26, 2011
Beijing, China

All About Energy 2011
July 5–8, 2011
Fortaleza, Brazil

InterSolar
July 12–14, 2011
San Francisco, California, USA

The 3rd Annual Renewable Energy Technology Conference & Exhibition
September 20–22, 2011
Washington, D.C., USA

CanSIA Solar Canada 2011
December 5–6, 2011
Toronto, Ontario, Canada

InterSolar
December 14–16, 2011
Mumbai, India

For more information on these and other upcoming events, visit the CanSIA website at www.cansia.ca.



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labs. The 4KW PV inverter received an "A" rating by *Photon* magazine for its supreme performance. Our Ontario-made inverters are completely re-engineered and certified for Canada and the U.S.

We have set up a solar inverter manufacturing operation and technical support centre in the City of Vaughan, Ontario, to serve all Sungrow customers in North America. The 25,000-square-foot inverter assembly plant has an annual production capacity of 200 MW and is within a day's drive to most of our customers.

Sungrow's highly efficient, cost-effective inverters are fully bankable with many leading financial institutions and have received outstanding quality ratings by reputable testing



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WHERE ENERGY MEETS TODAY



We're ensuring that our renewable energy future starts now.

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Enbridge delivers more than the energy people need. We deliver on our promise to help make communities better places to live. It's part of the reason we were named one of the Global 100 Most Sustainable Corporations in the World.

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That's how we're building better photovoltaic modules for your residential, commercial and utility scale installations.