



SOLutions

The newsletter of the Canadian Solar Industries Association/L'Association des Industries Solaires du Canada

RECORD CONFERENCE REFLECTS INDUSTRY GROWTH

Excitement, Interest in Canadian Opportunities

With more delegates, more exhibitors and more sessions than ever before, CanSIA's Solar Conference 2006 reflected what has been a year of growing interest and opportunity in Canada's solar energy industry.

"There was this feeling that we're on the doorstep, we're arriving. We all know we're not there yet, but we can see it. We can almost taste it, and I think there is a lot of excitement in that regard," says CanSIA's past president Jean-Pierre Pawliw.

The conference, held November 1-5 at the Centurion Conference and Event Centre in Ottawa, attracted nearly 250 participants, an 80% increase over 2005. As important as the number, says Pawliw, was the type of delegates who attended.

"Not only did we have more attendees, but I would say we had a broader cross-section. There were people from all fields, not only those involved in the industry in Canada, but international firms looking to become involved here. Financiers, lawyers, people who see opportunity in the solar industry in Canada. They were coming to find out more about it."

The conference's Solar Showcase experienced similar growth. For the first time, exhibition space was sold out, attracting 21 exhibitors, up from 14 in 2005. "As a result of this, we will be booking enough space for at least 40 exhibitors for the 2007 conference," says CanSIA's Krista Mayer.

Among the exhibitors was AEE Solar, a major distributor of solar energy systems based in California.



Gordon Howell

Federal Natural Resources Minister Gary Lunn was a keynote speaker at CanSIA's Solar Conference 2006.

It was a concrete example of the growing international interest in the Canadian market, as was the fact that nearly 10% of participants came from outside the country. "The conference allows them to see who is there. Who are the players, how mature is the organization, how mature are the people already in the industry," says Pawliw.

He believes much of the interest in this year's conference was sparked by the imminent launch of Ontario's feed-in tariff program, which offers 42¢/kWh for electricity generated by photovoltaic systems. Also capturing the attention of delegates was the participation of federal Natural Resources Minister Gary Lunn, who delivered the conference's keynote address. It was the first time in two decades that a federal minister accepted an invitation to speak at the event, and although he did not make any hoped-

for announcements about support for solar, Pawliw believes Lunn's presence was a demonstration of the growing political interest in the industry

"I think there was a lot of excitement that he was there, because no minister has been there in the past, and that signals something."

In his speech, Lunn told delegates he believes solar will play a significant role in Canada's drive to become an energy superpower. "I believe you're just scratching the surface. Our government wants to be there to support you. I'd love to make an announcement but you and I both know I can't do that today. But I will just say that you know solar will play a significant role," he said "I absolutely believe, and our government believes, it has a strong role to play and we look forward to working with your industry in the years to come. We're just at the very be-

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No. 8, January 2007

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BC TO DESIGN SOLAR ROOFS PROGRAM

In a year from now, British Columbia may be showing governments in Canada how the deployment of solar energy can be successfully accomplished through its 100,000 Solar Roofs Roadmap Project.

In a *SOLutions* interview, Richard Neufeld, BC Minister of Energy, Mines and Petroleum Resources, said his department has joined forces with the BC Ministry of Environment and Natural Resources Canada to establish a \$100,000 budget to evaluate how the province can utilize more solar energy through a program promoting residential installations.

"We have put together a wide

variety of people to form a task team to come back to us with some recommendations on how we can do this in the best way possible," says Neufeld, "so we can get the best bang for our buck."

The project's leader, Nitya Harris, says the team is scheduled to release a strategy and action plan before the end of 2007 to accomplish the installation of 100,000 solar projects, including photovoltaic and solar thermal technologies, in BC.

"The hard task will be to get participation from all the different bod-

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CANSIA MEMBERSHIP

Voting

- *Corporate I:*
25+ employees or revenue
>\$3 million – \$5,000
- *Corporate II:*
6-24 employees or revenue
> \$1 million – \$1,500
- *Corporate III:*
3-5 employees – \$800
- *Corporate IV:*
1-2 employees – \$400

Non-voting

- *Large government departments, utilities and energy regulators:* \$1,000
- *Small government departments and small distribution companies:* \$500
- *Large non-profits and educational institutions:* \$400
- *Small non-profits and community groups:* \$250
- *Advocate/individual:* \$100
- *Students (Must supply copy of student ID):* \$50

CanSIA's MISSION:

To develop a strong, efficient, ethical and professional Canadian solar industry, able to service an expanding domestic market, to provide innovative solar solutions to world energy problems, and to play a major role in promoting the transition to a solar energy future worldwide.

ONTARIO TARIFF OPENS NEW OPPORTUNITIES

The launch of Ontario's feed-in tariff, the Standard Offer program (SOP), will open up new market opportunities for PV and lay a foundation for broader acceptance of the technology in the future, says CanSIA's Rob McMonagle.

The program, which began accepting applications November 22, guarantees payment of \$0.42/kWh for grid-tied PV projects less than 10 MW for a contract term of 20 years.

The price has been the subject of considerable debate, with some industry players concerned it is not high enough to drive significant growth. But McMonagle says what it will do is stimulate the early market and give the industry time to build the necessary infrastructure to enter the mainstream.

"We need to bring in the early adopters first of all. People in the industry need to understand this program is not for everyone, we would not be able to handle the demand if it were," he says. "This is still going to be a niche market for the next five years, so you need to attract and provide the information to the right type of customer. We are getting reports that companies that are taking the right attitude are getting significant sales. There are also other opportunities for support, such as the 100% Ontario corporate tax write-off and Class 43.2 that can improve the economics for certain PV installations."

The current price provides a return on investment of about 4%. For the industry to move from early adopters into what McMonagle calls an early market, that will have to increase. "We have to move into a business case where we compete on an investment basis, which right now we are not at," he says. "However for many early adopters, installing a PV system is as much a moral and environmental decision as a financial one."

On the other side of the debate are certain government and utility officials who are fundamentally opposed to government intervention in

the energy market, and large energy users in Ontario who are concerned about the impact of rising electricity prices on their bottom line. They have been lobbying to cut the price for PV. "There is a lot of criticism about the 42 cents. We know there are attempts to bring the support down for solar as fast as possible. That is one of the reasons why the rules are set up so that the PV price can be reviewed at any time without notice," says McMonagle, "That is a big concern."

"This is still going to be a niche market for the next five years, so you need to attract and provide the information to the right type of customer."

**Rob McMonagle,
CanSIA**

The Ontario Power Authority's Tim Taylor says without an Ontario template for pricing solar, the agency had to look internationally to determine what it would pay. "We decided the best thing to do was to put it out in the marketplace at a price that would attract early adopters and begin the process of price discovery. And I guess a third thing was to get enough of it installed so that the price begins to decrease. That was the rationale for it," he says. "They picked a number at the lower end. The expectations were somewhat modest in terms of what it would attract, but the premise was let's see what happens."

CanSIA estimates the SOP will drive the installation of 15,000 residential PV systems totalling 40 MW by 2011. But other opportunities are emerging that the association did not factor into its calculations, says McMonagle. In direct response to the SOP, Baltimore's SunEdison

LLC and SkyPower Corporation of Toronto recently announced the creation of a joint venture to develop, build, own and operate up to 50 MW of solar PV parks across the province. Other companies are considering a similar business model, says McMonagle. "No one has announced anything officially, but CanSIA has been asked to give advice to a number of them."

Between the large-scale solar parks and micro-scale residential systems lies a commercial market for installations up to about 100 kW. "There are a lot of municipalities talking about demonstration systems," says McMonagle. He also points to a growing interest among architects and planners in building-integrated PV. "That is a new market as well."

With such significant potential, McMonagle believes the OPA's projections for PV development in the latest drafts of its 20-year integrated system plan are out of synch. The agency forecasts 50 MW in five years, but only a total of 100 MW through to 2027. "If you look at where the price of electricity in Ontario is headed versus the cost reductions expected in the PV industry, there is a crossover point in the 2012-2018 time frame. We really only have five years to start building an industry infrastructure to meet what will be a huge demand. At the same time there is this denial by our detractors in Canada that PV will ever be practical."

McMonagle is concerned that the low OPA forecast could ultimately undermine PV's participation in the SOP. "They are still keeping the ball for PV really, really low. Our concern is that if we have even modest success then they can turn around and say, you are meeting our target so we can reduce the price."

CanSIA has made considerable progress in eliminating some key hurdles to solar contained in early drafts of the program rules. It lobbied hard, with financial support from Sharp Solar in the US, Sanyo

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CODE REVISIONS CLEAR UP ONTARIO PERMITTING ISSUE

A recent change to the Ontario building code is a first step to making it easier for long-frustrated installers of solar domestic hot water (SDHW) systems in Canada to get the installation permits they need.

The province has accepted CanSIA's proposal for new wording that clarifies the code references to CSA standards that apply to packaged SDHW systems only. Non-packaged systems, the revised code says, shall "be installed in accordance with good engineering practice."

The roots of the issue stretch back to the mid 1980s, when solar technology standards were incorporated into the National Plumbing Code and just when the solar thermal industry in Canada was collapsing due to the end of government support. One standard, CSA F379.1, was improperly referenced so that it was mistakenly applied to all solar hot water systems, not just the packaged systems for single-family dwellings that it was designed to cover. On top of that, no laboratory was ever certified to test to the standard.

The result is that solar hot water installers have had trouble getting building and plumbing permits for their projects, says CanSIA's outgoing executive director Rob McMonagle. Some have bypassed the permitting process altogether, leading to concerns over issues like liability and insurance coverage. The new wording should clear those problems up in Ontario.

"This means that you can now, in Ontario at least, go in to get a building permit and you don't have to explain to the building inspector that the code misreferences the standards. It should make it a lot easier," says McMonagle. As an example, he

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STRONGER CANSIA LOOKS TO 2007

Association's strategy is to build on successes

CanSIA's focus for 2007 will be on consolidating the progress it has made in the last year, both in building an effective organization and in laying a policy foundation for the sustained growth of the industry.

"We are at the point where now we are considered a serious player. When people discuss renewable energy, our involvement is appreciated and needed," says incoming president Andrew van Doorn of Montreal-based HLT Énergies inc. "We're no longer at the point of shoving our foot inside the door. People are knocking at the door now, and we're going to have to focus on supporting the industry, supporting our members and answering the door."

A key message that needs to continue to be communicated to all stakeholders is that solar is an important piece of the overall energy puzzle, says van Doorn. "We have been underestimated for many years, but CanSIA has started and now has to continue pushing that message to government, the industry, to municipalities. We have to keep being present and increase our presence, and clearly articulate where we can fit in."

That approach has paid significant dividends in the last year, with the launch of Ontario's feed-in tariff program, the Canada Mortgage and Housing Corporation's Net Zero Energy Healthy Housing initiative, Alberta's Solar Municipal Showcase and British Columbia's 100,000 Solar Rooftops plan. It is a far cry from the days when the federal government's Renewable Energy Deployment Initiative (REDI) was the only support program for solar energy, says outgoing executive director Rob McMonagle.

"I think when we look back we'll say 2006 was the year solar arrived in Canada. We've suddenly gone from one program to 12 different programs supporting solar."

The next step for the industry is to build on those successes, says van Doorn. He points, for example, to Ontario's feed-in tariff. "The feel-

ing from the PV side of the industry is now it has to be reproduced in other provinces. We're going to work with provincial authorities to duplicate what is going on in Ontario."

For the solar thermal side, he says, building codes are a major issue. "We need to raise building standards so that solar becomes an unavoidable solution. Also incentives. The industry still needs help to get into the Canadian market," he says. "It's still a case of leveling the playing field to help us get in and get strong, to build up capacity and reduce costs. We are becoming a profitable industry, but more needs to be done."

Politically, the uncertainty surrounding federal support for solar energy remains a challenge. "We're looking at another election and possibly another change of government. Things have advanced, but we are still not there. People are looking to the federal government for a leadership role, a decision to support the industry or not," says van Doorn. "We don't even know, for example, if we have the REDI program after March 2007. That is not helping. It hurts the industry. We need a decision."

The key to building political support, says McMonagle, will be for industry leaders to take leadership and deliver a focused message to politicians and other decision makers. "Governments have been getting different messages from different individual firms. I think there is a huge opportunity this year. I think we're going to have another federal election, and the issues of energy and environment seem like they may be starting to dominate. There's a huge amount of work that needs to be done to ensure the solar industry has as a message for each of the political parties, and to challenge each of the parties before the election."

While CanSIA has made inroads by focussing much of its effort over the past couple of years at the mu-

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THE MOMENT TO SEIZE THE DAY HAS ARRIVED

"Climate change, rising energy prices, oil-politick based terrorism, the North American electrical crisis, and improvements in our technology all shout out the same thing – the time is now for the next generation of energy – clean, sustainable, local solar energy."

I wrote those words nearly four years ago in my first *SOLutions* article when I started with CanSIA. Those words still reverberate today.

Canada has begun to embrace its solar future. Solar now ranks as the preferred energy choice of Canadian voters (and most politicians know it). There are solar programs started in four provinces (with more on the way). Solar has the attention of the media – Canada's solar's future is now discussed in such prestigious journals as the *Washington Post* and *Photon International*. CanSIA's membership now equals that of the heady days in the 1980s. Our conference this year drew more than 250 delegates and, for the first time in more than 20 years, we had the Minister of Natural Resources, the Honourable Gary Lunn, attend and speak.

When I took on the position of Executive Director with CanSIA in 2002 we had many challenges – both as an industry and as an association. In 2002 we had one support program in all of Canada – now we have twelve. While many challenges remain, the future looks bright. It is an exciting time to be in the solar industry in this country and, with all my heart, I believe that Canada will be the top growth market in the world for solar (both thermal and PV) in the coming years. We may not have the megawatts yet – but we will have the growth rates.

For me it has been an incredible challenge working at CanSIA – one that I have thoroughly enjoyed. But now it's time to move on to other challenges. I have recently accepted a position with the City



CanSIA EDITORIAL

by Rob McMonagle
*Outgoing Executive
Director*

of Toronto, and while I will remain involved in many of the issues that are of concern to the solar industry, it will now be from "the other side of the fence."

I have done considerable traveling in Canada and abroad during my time with CanSIA and I found that the greatest difference between the Canadian solar industry and the solar industries of other countries is the general pessimism that permeates us in Canada. The comic strip character that once said, "I have met the enemy and he is us," can so easily be applied to Canada's solar industries.

The responsibility for our future as an industry and as an energy source lies with each member of CanSIA. We all have the ability to make our political leaders listen to us, to develop and recommend the programs that are needed to expand the markets, to show the decision makers the value of solar as an energy source – as a way of creating jobs – as a way to overcome the environmental and energy challenges that face Canada in the next half century.

But being passive and expecting that things will simply happen is living in a fool's paradise. If you want the solar industry in Canada to reach its potential – then you must do your part and not just complain about it.

Only by working together as an industry – and not simply for the benefit of a single firm – will the market for solar grow. This is the international experience. Do you want a large share of a tiny stagnant market – or do you want to

share the wealth in a dynamic healthy expanding market?

What disappointed me most during my time at CanSIA was the lack of support of our larger corporate members (both based in Canada and the international suppliers) – those firms that took advantage of their size, or the work done by the solar industries in other nations, to create success for themselves. The investment they returned in growing the market in Canada has been minimal.

The Canadian solar industry needs the leading firms in our industry to begin to act as industry leaders and not like selfish lords in their own fiefdoms. You need only look at CanSIA's membership list to see who is missing or who is not contributing proportionally. You have the ability to influence those firms who are not supporting the advocacy to grow the market for their products.

What is most heartening to me is the engagement this past year of some of the larger firms and, finally, the growing interest and involvement of larger international solar firms in the advocacy in Canada. If the Canadian leading firms will not seize the day – perhaps the companies with experience in other national markets will expand the Canadian solar market now that the door has been cracked open.

This is not to imply that the smaller firms cannot make a difference. The successes we have had recently have been driven by a small group of volunteers from smaller firms. All of the solar industry must work together (and take leadership on issues) to lead us to that promised solar future.

CanSIA will be there to assist – but an industry association is only as strong as the members who belong to it. So people – it is time to get to work – to work to build the solar future of Canada. No one else will do it for you. ■

TORONTO COMPANY TURNS UP THE HEAT

Mondial Energy Inc. has commissioned a solar hot water system at a 174-unit housing project for seniors in Toronto's east end, the first of four projects funded through fixed-price, long-term energy supply contracts signed with building owners.

The system, on the Cecilia Murphy apartment building, was designed and installed by Vancouver's Taylor Munro Energy Systems. It has 60 solar thermal panels with 180 square meters of collector surface and will be used to offset natural gas consumption for domestic water heating.

Mondial financed the solar installation, and will continue to own and maintain the system, through a 10-year, fixed-price energy sales contract signed by Neighbourhood Link Homes, a non-profit social service agency that owns the building. The system is expected to produce 134,000 kWh_{TH} annually and reduce the annual cost of natural gas by more than \$10,000, says a Mondial news release.

"Even after 31 years in the area we're never sure whether the necessary funds will be available next year to run our much-needed services," commented Neighbourhood Link's Gerrie Burnett when the system was commissioned in late November. The organization is pleased with the certainty of long-term, fixed-rate energy costs as well as the prospect of saving money. Mondial simply meters the output of its solar system and sells the kilowatt-hours of thermal energy. "We're charging less than they're currently paying for gas," says Mondial president Alex Winch.

"We think we've solved the two biggest challenges to renewable deployment, the upfront capital cost and perceived technology risk," he says. "We've addressed those barriers by paying the capital cost. We take the ownership

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COMBINED PANEL BOOSTS OUTPUT

Tests show PV/Thermal technology is more efficient

Adding solar thermal air collectors to photovoltaic modules can significantly boost the combined energy production and cut payback time by as much as two-thirds, according to tests conducted for Toronto-based Conserval Engineering.

The tests, conducted this fall at the National Solar Test Facility (NSTF), monitored SolarWall PV/T 700E panels for several days. PV modules from BP Solar, Evergreen and UniSolar were mounted on a 10-square-meter perforated SolarWall panel. The air collector draws off the heat that accumulates on the back of the PV panels and puts it to use for space heating. The results showed a 180-watt PV module actually produced more than 700 watts of total energy, with 540 watts of thermal energy making up the difference.

Heat accumulation has long been an issue with PV systems, says Conserval's John Hollick. Not only can it raise roof temperatures to more than 85 degrees Celsius, potentially damaging the PV system and roofing materials, but it also makes the modules operate less efficiently. "We can lower that temperature by 10-15 degrees Celsius, maybe even more. That means the PV efficiency increases. You get about a half a percent improvement for each degree drop in temperature. So if we get a 10 degree drop, we are looking at a 4-5% improvement in the PV efficiency," explains Hollick.

It also means that valuable heat energy is not wasted, he adds, making the system more cost-effective. "Every square meter of PV panel is roughly about \$1000 supplied and installed. Every square meter of Solarwall panel supplied and installed is about \$250. So for a 25% increase in cost you can get a 200-300% increase in your energy output. These numbers are pretty amazing. We were surprised when we finally got the results back."

Conserval actually developed its SolarWall PV/T technology a number of years ago and installed it

at the Chewonki Center for Environmental Education in Maine and on the offices of AIM Associates, an architecture firm in the San Francisco Bay area. The lack of a strong market in Canada, little interest from PV installers in the US who were scrambling just to keep up with the demand created by state incentive programs, and difficulty securing PV module supply kept Conserval from pushing ahead with commercialization at that time.

But a number of things have changed since then, says Hollick. Demand for PV is increasing, brought on by initiatives like Ontario's feed-in tariff program. Interest in combined PV/thermal systems is also on the rise. Task 35 of the International Energy Agency (IEA) launched a three-year research effort in January 2005 in an effort to catalyze the development and market introduction of the technology. The NSTF tests were conducted in conjunction with the program, and Conserval plans to launch several demonstration projects in 2007 in Ontario and western Canada that will monitor and analyze system performance.

"I'd say that IEA program is really what got things going," says Hollick.

Conserval has supply agreements with several PV module manufacturers and expects to begin installing the combined systems for customers this spring. Hollick believes PV/Thermal will eventually become the technology of choice.

"In a building integrated system, it has really got to go that way. It has been proven down in California that they have some serious hot roof issues that have to be dealt with, and the only way to do that is get rid of the heat. That is what we offer."

As solar technologies become mainstream, limited surface area on which to mount them will also become an issue. "You will see in the future there will be competition for roof space, so the technology that can do both electricity and heating I think will win out," he says. ■

CITY OF TORONTO INVESTS IN SOLAR INSTALLATIONS

New Water Heating Systems Just Part of Deployment Goals

The City of Toronto just acquired six new solar water-heating systems for five municipal buildings, totalling more than 900 square metres of collector surface, and now it's investigating further investment in both solar thermal and photovoltaic systems to be installed in 2007.

In late December, Oakville's SolarOntario.com Ltd. completed the commissioning of two pool-heating systems at Centennial and Agincourt recreation centres in Scarborough. Both systems, manufactured by Techno-Solis, with offices in Florida and Quebec, are designed to operate seasonally. Spring, summer and fall, pool water is pumped through the unglazed solar collectors and returned to the plumbing system 1-4 degrees warmer. SolarOntario general manager Andrew McKegney says the lower-cost systems will deliver 75% of the energy that would have come from a year-round glazed solar collectors, and he predicts the Centennial project, which has 250 square metres of collectors, will save \$5,000 a year on natural gas, while Agincourt with 241 square meters will save \$5,400.

SolarOntario is also installing two other Techno-Solis pool-heating systems, expected to be commissioned by early January at Toronto's Jimmie Simpson Recreation Centre. One serves a kiddie pool, which has an electric heater running at a higher temperature, and

the other preheats water for a full-size pool. Combined, they have 406 square metres of collectors and will likely save the city about \$11,700 in utility costs annually at that location.

Scott McKenzie, who works in Toronto's energy efficiency office, says the pool-heating projects are part of an energy efficiency retrofit on the city's arenas. The entire arenas program, he explains, has to see an eight-year payback on its \$10 million budget for efficiency investments. The solar thermal component, he says, was partially funded by the Toronto Atmospheric Fund (TAF), established by the Toronto city council to combat climate change and improve air quality, and the Natural Resources Canada Renewable Energy Deployment Initiative (REDI).

"With REDI and some funding from TAF solar thermal projects can get pretty close to that seven- or eight-year payback target. REDI has been important for these projects," says McKenzie.

REDI, which can refund 25% of purchase and installation costs to a maximum of \$80,000 per installation and \$250,000 per corporate entity, funded the Centennial and Agincourt systems. REDI also funded two year-round solar domestic hot water systems, each with 18 square metres of collector surface and installed by SolarOntario in December. McKenzie says these systems, too, are part of a larger en-

ergy efficiency retrofit program, designed specifically for fire halls.

The city hoped to get REDI funding for the Jimmie Simpson project, says McKenzie, but he has been informed the nine-year, \$51-million program, scheduled to end March 31, has run out of money early. While this means the Jimmie Simpson payback will be longer than targeted, it can be rolled into the \$10-million arenas program, which is still on target. But the planning of the city's next solar projects, says McKenzie, is tricky without an understanding of how or if the federal government will continue to support development.

"I don't know where the money is going to come from unless somebody can give us a little more leeway on what the payback can be, or REDI funding comes back, or we can get a contribution from TAF or some other program," he says. "Right now, we do not have the authority to do projects that have that long a payback."

Optimism still reigns within the municipality, however, that the city will find a way to increase its solar energy supply in 2007. Toronto's energy efficiency office has undertaken a solar thermal pool-heating study, conducted by Finn Projects, which will evaluate Toronto's past experiencing with the technology as well as the cost of and models for further deployment. A request for proposals on more solar pool heat-

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CANSIA AWARDS RECOGNIZE CONTRIBUTIONS

CanSIA's annual Solar Awards were presented on November 2 during the association's annual conference held in Ottawa this year. The awards recognize the efforts of individuals, organizations and companies who, through their efforts in 2006, helped improve the market for solar energy in Canada. The recipients are:

- *Solar Political Leader of the Year: Ontario Premier Dalton McGuinty.* McGuinty's government introduced North America's first major feed-in tariff program (the Standard Offer Contract program) for small-scale producers of grid-tied renewable electricity.

- *Solar Industry Leader of the Year: Milfred Hammerbacher.* As the former president of Spherical Solar Power (SSP), Milfred provided leadership and financial support for CanSIA's advocacy efforts.

- *Solar Thermal Project of the Year: Town of Okotoks – Drake Landing Solar Community.* The community is a unique 52-house subdivision that uses 800 solar thermal collectors and underground energy storage to meet most of its space and water heating needs.

- *Solar PV Project of the Year: Board of Governors of Exhibition Place – 100 kW PV System.* The

system is the largest in Canada and is a key element in Exhibition Place's goal of becoming energy self-sufficient by 2010.

- *Solar Advocate of the Year: Climate Change Central.* The organization supported a number of major studies of the use of solar energy in Alberta as well as launching the Alberta Solar Municipal Showcase, a demonstration project that will see 20 municipalities each install a grid-connected PV system on a highly visible public building.

- *Solar Public Servants of the Year: Donna Sanford and Lee Thiessen, BC Ministry of Environment.* The two were instrumental in launching the SolarBC initiative, designed to increase public awareness of solar energy, build solar industry capacity and fund a solar incentive program in BC. They have also been the leading force behind the government's 100,000 Solar Roofs Roadmap Project.

- *Solar News Story of the Year: Doug Struck, Washington Post Foreign Service.* Struck published an article about Ontario's standard offer program in the October 12 edition of the *Washington Post*, informing readers in both Canada and the US about the potential of the Canadian solar industry. ■

SESSIONS TACKLED A RANGE OF ISSUES

CONTINUED FROM PAGE 1

ginning and it's going to get a lot more exciting, very fast."

Following Lunn's address, Pawliw chaired a session that brought together representatives of most of the major political parties to give their views on solar energy issues. In order for Canadian federal support for solar to match the international average, he says, the government would have to boost spending from the current \$10 million a year to \$75 million.

While the NDP and Green Party were quite supportive of that target, the representatives for the Liberals and Conservatives would not commit. "It was a bit deflating because the two principal players really didn't rise to the opportunity," Pawliw says.

The session was one of 11 that provided delegates with policy and program updates for both PV and solar thermal, outlined strategies for tapping into the industry's potential, and examined progress in areas like standards and certification, education and training, business development and investor opportunities, community action and project deployment.

In addition, three roundtable discussions were held that took an in-depth look at Ontario's feed-in tariff program, the industry's strategic direction through to 2025, and the barriers that must be overcome to make solar a mainstream energy source.

In all, the conference featured close to 50 speakers from Canada, the US, India, France and Poland. Among those speakers was Dr. Peter Varadi, who also gave a keynote address. Varadi is the founder of Solarex Corporation and is now the chair of PV GAP, a non-profit organization whose mission is to promote the use of internationally accepted standards, quality management processes and organizational training in the design, fabrication, installation, sales and service of PV systems. ■

NEW DYNAMIC BODES WELL FOR SOLAR

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municipal and provincial level, says McMonagle, the importance of federal leadership should not be discounted. While support may come from municipal and provincial levels, it's federal support that will drive those things. That's why this federal election is going to be so important."

Internally, a major change for CanSIA in 2007 is the departure of McMonagle, who left the association in December for a job as senior energy consultant in the City of Toronto's energy efficiency office. "Our in-

ternal workings have become much more of a priority because Rob is leaving," says van Doorn. "But, importantly, we have a strong foundation on which to move forward." Van Doorn is returning to CanSIA's board after taking a temporary leave from the industry and he says the difference is tangible.

"I hardly recognize the association or the industry. It has changed so much. The whole dynamic is different. I'm coming into an association that is structured and can stand on its own. It's not where I left it a few years ago." ■

CITY AIMS TO BE SOLAR ENERGY LEADER AMONG MUNICIPALITIES

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ing installations may be issued this year.

"The Finn report will help us know whether or not we should do that, but there are a number of different ways we could go," says McKenzie, explaining a solar energy service company, which would allow the city to buy heat from a solar energy provider without having to pay the cost of installing a system, is just one possibility.

Concurrent to the energy efficiency office's solar pool study, the Toronto environment office has contracted SolSource Engineering to deliver a photovoltaic feasibility study in late December. The environment office's Kyle Leetham says the purpose of the study is to identify where and how to site five PV systems on city property.

"We are really trying to push the envelope on new and creative ways of doing things," he says, explaining his department is thinking about combining PV with a green-roofs installation, which is a lightweight carpet of rooftop plants, or a solar air-heating system. Both options offer the benefit of cooling PV modules. The city also wants highly visible systems that, as with the solar pool-heating projects, will increase public awareness of solar energy technologies. In addition, says Leetham, Ontario's feed-in-tariff program, which will pay \$0.42/kWh for PV electricity, has captured the city's attention.

"At the same time the study is being undertaken we're also looking at funding opportunities," says Leetham. "We're not after a report that will sit on the shelf. Depending on funding, we're looking at about 50 kW of PV to be installed in 2007.

"We are positioning ourselves as one of the leading solar energy municipalities in Canada." ■



Mondial Energy Inc.

Mondial's solar hot water system supplies energy under a fixed-price, long-term agreement.

POLICY UNCERTAINTY A CONCERN

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risk, the technology risk. If it doesn't work we don't have a deliverable. We would have a problem, but the customer wouldn't."

Mondial has also signed three more solar energy delivery contracts. Two of those are Neighbourhood Link buildings, including a 25-unit residence with system commissioning in late spring, and a 108-suit dual address apartment with a common water heating system. Both solar systems are already partially installed, and the larger project is scheduled for an April completion.

The fourth contract is with a second Toronto social services agency, WoodGreen Community Housing. The arrangement for WoodGreen's 170-unit Queen Street East building was announced in mid-November. The system will produce about 201,961 kWh_{TH} a year, says Winch. All the systems will be installed by Taylor Munro and together have 714 square meters of collector surface.

Mondial will receive about \$25,000 for the Cecilia Murphy project from NRCan's Renewable Energy Deployment Initiative (REDI). But REDI is scheduled to end March 31, and the industry is still waiting for an announcement on how the current government plans to support the growth of the solar market. In a late December interview for *SOLutions*, NRCan spokesman Ghyslain Charron said a program

that will replace or replenish REDI will be announced sometime in 2007. "In Canadian jurisdictions we need REDI," says Winch, who has applied for REDI funding for the three other systems but is uncertain if the program will be around to deliver. "It's critical to solar companies trying to build a business here in Canada because we cannot sign construction contracts minus REDI. It's not critical to our business plan, though," he explains. "If REDI fails we'll go elsewhere."

CanSIA's outgoing executive director, Rob McMonagle, says he is concerned firms like Mondial may leave Canada as this uncertainty is damaging prospects for 2007. "The solar industry, or any industry for that matter, needs certainty from the government. With less than three months before the program ends we still don't have a message to potential purchasers of whether this government will support solar projects in Canada."

Winch says Mondial is marketing to hotels, hospitals and city pools, to name a few market segments, all over the world, and hopes to announce new contracts in 2007. "I was in Hawaii two weeks ago, and there is a solar resource there that is significantly better than Toronto. The displaced energy is four times as expensive. I've made this work in Toronto, and I'm totally convinced I can make it work just about anywhere in the world." ■

STANDARD OFFER BARRIERS REMAIN

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Canada, Carmanah Technologies and Xantrex Technology, to fight a proposal to pull micro generators less than 10 kW in size from the program and deal with them through a separate support mechanism. It also won changes to prevent the OPA from clawing back other government funding support for renewable energy systems. "As new programs develop, which we are expecting particularly at the municipal level, they will provide additional support for PV," says McMonagle. "I think that is good news."

There are still barriers to be overcome, however. "The big issue we have is that the OPA downloaded a lot of the responsibility to the local distribution companies (LDCs). So it is up to the LDCs to determine how they administer the program, how they meter the system and so on. It can make it more complicated because we could have almost 90 variations of the same program," explains McMonagle. "It is too bad there was not enough leadership, both in government and with the energy regulators, to actually set up the program saying this is how it is done."

The Ontario Energy Board has, at the last minute, stepped in to provide some direction to LDCs on issues like metering, but they are only recommendations. "It is still going to be up to the LDCs to decide how they themselves do it," says McMonagle. "What we are hoping is there will be a best-practices list developed that will show what some of the progressive utilities are doing, and to try to embarrass some of the utilities that might try to make this program as difficult as possible for the participants."

Taylor could not say how many applications for what types of technologies the OPA has received since the program launch. The agency expects to take 45 days to process applications and award contracts. ■

COLLEGE PLANS SPRING OFFERING

Northern Lights College in Dawson Creek, BC will begin offering the first provincially recognized certified solar hot water system installer course in Canada this spring.

The college's Bob Haugen says the course will be offered in April, with the exact dates to be determined as soon as Northern Lights gets a curriculum approved by the BC Ministry of Advanced Education. It will run at least twice a year.

The six-day course, costing \$650, will include four days of theory and two days of hands-on experience. It will provide plumbers, pipefitters, and heating specialists with the training they need to install all types of solar hot water systems. Students will use the STT100 and STT200

manuals from CanSIA, as well as a Northern Lights manual that will provide more in-depth information. For qualified candidates, the course will lead to CanSIA certification and a Northern Lights College certificate. The course will also be open to homeowners who want to learn how to install their own solar hot water systems. They will receive an advanced education certificate from the college, says Haugen.

In February, says Haugen, the college plans to offer a train-the-trainers session to instructors from colleges across Canada interested in offering the program in their regions under the license of Northern Lights. That session is expected to cost about \$1,100. ■

NPC WORDING CHANGE REJECTED

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points to the City of Ottawa, which had been refusing to issue permits for SDHW systems. It has now developed guidelines laying out the process for permit approval.

The fact that testing is now in place for certifying packaged systems so they can carry the CSA certified safety label should also help, says McMonagle. "We do have products that are getting certified. It is slow, but we have the process going." CanSIA has been lobbying the federal government to extend the support program for certification beyond the March 31 program end but there is still no word on what the government intends to do.

CanSIA had hoped to get similar wording changes to the National Plumbing Code (NPC), since it is the source of the problem and influences the content of building codes in all the provinces. The changes were rejected, however, because CSA F379.1 and the companion CSA F383 installation code are currently being revised to reflect advances in SDHW technology. CSA has issued an interim technical information letter covering the new requirements, but the NPC code revision committee decided it could

not change the wording in the NPC until the new standard is finalized.

McMonagle believes there was no need to wait because the new wording simply clarified what systems are affected, not the content of the standards themselves. "This is where political leadership is so important. We could not get political direction federally on this. A letter from the Minister of Natural Resources would have helped us," he says. "Provincially, we had the support of the Minister of Energy and the Minister of Urban Affairs and Housing."

The CSA's Bob Storey says the organization's technical committee held a teleconference in mid-December to review some outstanding issues with CSA F379.1 and is hoping to have a draft standard available for a 60-day public review beginning in February.

"Unless a major issue is identified during the review, the document will then be edited and offered for approval to our technical committee on renewables in June, and assuming no further complications, go on to be published in the fall of 2007," he says.

The CSA also hopes to have a new edition of the CSA F383 installation code for packaged SDHW systems follow the same timeline, he adds. ■

KEY CHALLENGE IS SETTING APPROPRIATE TIMELINE

CONTINUED FROM PAGE 2

ies, not just the province but from the federal government, from local government and utilities. I think they all have a role to play. That's what we will be identifying in this report, what the roles will be for all these different bodies, and how they come into the picture. Once the report is done we'll be attempting to bring all these people together and start implementation of the 100,000 solar roofs program."



Richard Neufeld

Harris says the team had its first meeting in November and has the participation of senior people from the two provincial ministries, NRCan, BC Hydro, Terasen Gas, Vancity Capital, the cities of Kelowna and Dawson Creek, as well as BC representatives from the solar thermal and photovoltaic industries.

Joe Thwaites, president of Taylor Munro Energy Systems, a BC company specializing in solar thermal water heating, says he and Dave Egles of Carmanah Technologies, a Victoria-based supplier of PV systems, provided overviews of solar technology at the first meeting.

"One of the key things we need to sort out is the timeline," says Thwaites. "Is it 100,000 systems by the year 2020, 2025 or 2050? That will be very important to sort out. I would like to see an ambitious target, but I want a target that is achievable. I want this to be a raging success."

The team will meet three more times in 2007, says Harris, and on the next occasion members will discuss models of residential solar programs that have worked elsewhere, primarily in Europe, Japan and the US. While Harris has yet to consolidate that information, she says an "overall concept" that has already made a positive impression on her is a combination of three principles fundamental to European programs.

"First is public awareness," she explains. "Second is working on a very strong infrastructure of qualified installers and quality systems. Third are policies and regulations. It's too early to say how that will play out here. That's what we'll research."

Although the second meeting of the team has yet to be scheduled, Neufeld is already thinking about the outcome of a province-wide solar program that accomplishes 100,000 residential installations. He says he hopes that will lead to the growth of

solar energy capacity in BC, in addition to the development of the solar industry. "One is as important as the other," says Neufeld, "because with the knowledge that is held within companies across the province of British Columbia there is an opportunity there, a great opportunity for jobs, technology transfer, and also for cleaning up the environment."

When Neufeld is asked for his perspective on what the appropriate federal contribution should be for provincial solar development, he refers to the federal target of a minimum of 5% biofuel in gasoline across Canada, and the need for national action on climate change. "You get standards set across Canada by federal involvement," he says, "so everybody fits into a system that over time makes it economical for a lot more people to get involved."

Neufeld declined to speculate on the pace or scale of solar energy development in BC, but he did say the province is in the process of updating its energy strategy, which was released in 2002. The new document is expected to be unveiled in early 2007, says Neufeld. "I think you'll be very interested in it. There will be an energy plan coming out that will have some very good news in it." ■

SOLAR TRAINING COURSES IN CANADA

PV technician's certificate:

Seneca College, in partnership with CanSIA, offers an eleven-part training program for people who want to become professionally trained in the design and installation of solar photovoltaic systems.

(800) 572-0712

www.senecac.on.ca/eto/pages/photovol.html

Introduction to photovoltaics: The British Columbia Institute of Technology offers a two-level program of study in off- and on-grid PV systems.

604-434-1610

www.bcit.ca/admission/register

Renewable energy workshops:

The Kortright Centre for Conservation offers four workshops, three with graduated training on how to generate electricity using solar and wind energy systems, and one on solar water heating.

(905) 832-2289 ex: 239

www.trca.on.ca

Renewable energy career programs:

Willis College of Business & Technology offers a range of workshops and full training programs in renewable energy.

(613) 233-1128

<http://www.williscollege.com>

SOLAR CALENDAR

March 5-6, 2007: *2007 Clean Energy Conference*, Toronto.

Contact: Canadian Information Exchange, Tel. 1-866-516-7833 ext. 24, Web site: www.informationexchange.ca/CEC/

June 10-14, 2007: *Second Conference of the Solar Buildings Research Network and 32nd Annual Conference of the Solar Energy Society of Canada*, Calgary, Web site: www.solarbuildings.ca

