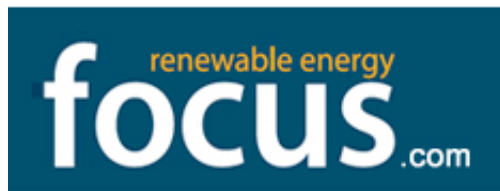


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Feature

Private PV installation a sign of things to come in sunny Alberta

04 December 2008

Mark Wolfe, PhD

Better known internationally for its mountain parks and vast tracts of oil sands, Alberta may also soon emerge as the most progressive province for solar development in Canada – a country lagging in development of this technology.

Better known internationally for its mountain parks and vast tracts of oil sands, Alberta may also soon emerge as the most progressive province for solar development in Canada – a country lagging in development of this technology.

That is, if early adopters of photovoltaic (PV) technology like Luc Savoie have anything to say about it. Savoie this autumn threw the switch on a 7.2 kilowatt (kW) PV array mounted on his home in northwest Calgary – the largest private citizen solar installation in the city to date. At peak, the 36 module, 200 W *Sanyo* system is expected to generate 6-7 kW on average from late spring through early autumn and eventually earn him rebate credits from the existing grid the system is tied into.

Savoie came up with the plan last spring when a crew he had retained to replace his roof was delayed for a month due to wet weather. Thanks to familiarity with the local PV industry and information his teenage sons were bringing home from school at the time on emerging renewable technologies, it occurred to Savoie that an opportunity existed to investigate solar power as a possible addition to the roofing work he needed done.

He contacted Calgary-based *Sedmek* – a leading supplier of wind, solar thermal and PV products and services in southern Alberta responsible for the 43.4 kW grid tie-in at the *Alberta Children's Hospital* in Calgary that is said to be the only cold-climate installation in the world to achieve *Leed Platinum* status.

After initial consultations, Savoie began the application process for city



PV panels installed on a roof.



At peak, the 36 module, 200 W *Sanyo* system is expected to generate 6-7 kW on average.



Installing the panels.

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Large conventional and nuclear power stations have traditionally been the 'big hitters' of electrical power generation, with a few up to 4 GW. Wind, too, is beginning to muscle into the 'Gigawatt-Plus' club. George Marsh asks: How soon solar power could join the big hitters.

Mainstreaming solar PV in the USA

US states need a coherent action plan in order to develop solar PV markets fully, especially if

permits to proceed with the installation, and then did what most people probably do not do: he went to every one of his neighbours advising them of the project.

“I wanted to be sure people were aware of what we were up to, especially those directly around me,” says Savoie, a geologist with Calgary-based [Canadian Natural Resources Ltd.](#) “Basically, everyone said they thought the project was pretty cool. We’ve had lots of people inside and outside the neighbourhood stop by and ask questions, so there’s definitely interest out there for this kind of project. The good news is the city [of Calgary] has also dropped a lot of the paper work I had to go through, so my understanding now is that doing an installation like this is not much more complicated than building a fence.”

So, four months and about C\$60,000 later, Savoie is generating more than enough electricity to power a 2,000 ft² home for his family of five.

“I’m really happy with the system,” adds Savoie. “If you calculate based on the cost of electricity, the cost of the install[ation] and our average use of electricity, the pay out comes out to just over 20 years. But when you consider the increase[d] value to the home this creates, plus the energy savings now, and when electricity rates rise, I see the amortisation as actually closer to seven years. Plus there are other benefits: my kids have learned a lot about how this works and that it’s not that difficult, you can measure the CO₂ we’ve saved and they like that.

“But I also look into the future, too. Electrical cars are coming back to a point where having something to run around town with is going to be a reality. Based on a plug-in recharge system for the car, we’re going to be running our house and transportation for virtually nothing. It really comes down to what Gandhi said: ‘You must be the change you wish to see in the world.’ You can gripe and complain about CO₂ and cost of power, or you can do something about it.”

Alberta Solar Showcase project

Savoie’s contribution to renewable energy also happened to coincide with the Alberta Solar Showcase – a two-year project that has attempted to make gains where the government of the province of Alberta has been silent. Attracting 20 municipalities in the province – including its two largest cities of Calgary and Edmonton – the project concluded this autumn in what organisers are calling a success.

“We accomplished the objectives that we set out for in the first place and it will continue to have a life long beyond the end of the funding period,” says project manager Janne Hicklin. “It’s just the beginning.”

Grid-connected PV modules were installed on city and town halls, fire stations, libraries and schools among the participating municipalities. A website dedicated to profiling the project, www.lassothesun.ca, also offers the browser real-time read-outs of the solar power being produced, as well a cumulative savings in green house gas (GHG) emissions and other useful data.

Indeed, one installation at an elementary school south of Calgary has worked the project into the school curriculum.

“When you’re on the internet and see projects in the desert in the United States, for example, those used to be sort of popular science type of ideas,” says Cayley Elementary School principal Bill Holmes. “They’re no longer popular science. I mean, we’re generating energy right into the school and the kids can see it right on-line through the project website.”

It is also exposure to the technology that’s been viral, says Holmes. “We’ve had community members come and talk to us about and ask how they can get this; who they need to talk to, so it’s been a successful initiative.”

For its part, what the Alberta government has done, is implemented a major overhaul to the application process required before anyone can connect a system to the existing grid. What used to be an arcane 65-page application process has been reduced to

they are able to match the growth markets in Europe. The Clean Energy Group recently released a report aimed at bringing solar PV into the US mainstream. Mark Sinclair summarises the main findings, together with the best practice from some leading states.

Denmark continues its renewable tradition

Denmark is proud of its heritage when it comes to pushing forward the use of alternative energy solutions, and is all set to host the make or break un climate change conference (COP 15) in 2009. renewable energy focus assistant editor Kari Larsen saw some of the Danish projects for herself.

Renewables and the smart grid

Has the world’s largest energy consumer finally realised that energy shortages and price spikes are truly the norm, not the exception? If so, the Smart Grid could push the energy revolution forward, reports Eric Miller, Chief Solutions Officer at Trilliant.

Focus on small hydro

For centuries civilisations have taken advantage of the power of water. Once used by the Greeks for grinding wheat into flour, the water wheels of the past have been transformed into highly-efficient turbines that generate electricity. Renewable Energy Focus takes an in-depth look at the current renaissance in Small Hydropower in the EU.

a manageable five pages. And with cities like Calgary reducing or eliminating the local development permit requirement, a major obstacle to solar PV diffusion has been addressed.

The case of Ontario

The next step in Canada is for provinces to introduce incentive programmes that reward individuals, businesses and institutions for taking the solar PV plunge. Ontario, Canada's most populous province, made a go of this when it introduced a Standard Offer Program that offered micro-generators C\$0.42/kWh for electricity that feed into the grid – a programme put on hold recently due in part to the overwhelming demand for participation.

However, [Canadian Solar Energy Society](#) President Frederick Pouyot says Ontario's commitment to pushing renewables like solar PV forward is in reality complicated by the political influence of the nuclear power industry in that province – a claim supported in a recent documentary aired on [CBC Television's Fifth Estate programme](#).

Other than that, British Columbia is the only other province with a Standard Offer Program or Net Metering Program set up to reward early adopters like Luc Savoie, although that province has announced rebates on power use on the basis of electricity generated and added to the grid, will be less than Ontario.

In the meantime, the Alberta government remains silently on the sidelines, basking in an annual average solar PV potential that rivals that of the state of Florida. As long as the sun keeps coming up, though, it's only a matter of time before politicians in this province see the light.

About the author

Dr Wolfe teaches communication history, theory and technology management at the Universities of [Calgary](#) and [Alberta \(Edmonton\)](#). [Wolfe & Associates](#) specialises in strategic communication involving emerging technology.

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