

Watt's Happening? #123

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Solar Q and A



Peace Energy Co-op's home in Dawson Creek is 100 percent solar powered, meaning zero electrical bills for four consecutive years now. This "grid-tied" solar electric system produces more power in the spring,

summer and fall than it can use, storing that extra power in the grid to be used up at night and in the winter. Millions of these grid-tied solar power systems are being installed around the world every year.

One reason I like being involved in solar and wind energy is the intelligent, well-informed people it attracts. Peace Energy Co-op's "Save with Solar" information session in Dawson Creek last week was no exception.

This very well attended event (I'll mention that we were pleased to have Dawson Creek mayor Dale Bumstead there)

proved again the tremendous public interest and enthusiasm for these new clean energies. The truth is seeping in: we now know we can power the world entirely with sun and wind. All we need is the political will to make it happen.

Meanwhile, lots of folks aren't waiting for the politicians. They're going ahead on their own, taking their energy production into their own hands, investing in solar

power systems for their home, business or farm, speeding the transition to a clean energy world . . . and saving some money while they're at it!

Still, there are questions that keep coming up at these public meetings, good questions that deserve good answers, so here I'll try to answer a few of the most common.

DO I NEED BATTERIES?

No. That's because 99% of all solar power systems are added to existing buildings that are already on the grid. These systems are "grid tied." That means they feed excess solar power into the grid then withdraw it later when it's needed, say at night or in the winter. You might think of the grid as a huge battery that you can draw from any time you want.

If your grid-tied system puts more power into the grid than it takes out over a one-year period, BC Hydro pays you for that excess at 10 cents/kwh or will give you a credit on your account that you can use up later.

From my own experience in northern Canada, I can tell you this works very well: we have excellent solar power in the spring, summer and fall, but not so great in the winter. Being grid-tied means I can withdraw my electrical credit in the winter from the excess I generated in the summer.

My modest grid-tied system in Dawson Creek has now produced more power each year than my building has consumed, resulting in zero electrical bills for four years now. I am what is called electrically "net-zero" . . . and proud of it too!

The price of grid electricity continues to go up, up, up, but my electrical bills never will. I am insulated from price increases, because I am generating all of my own power with sunlight, right on my own roof. Sweet.

SHOULD I WAIT FOR NEW SOLAR TECHNOLOGY?

Probably not. Existing solar technology is superb. Millions of solar arrays based on this technology

are being installed around the world every year with excellent results.

This existing technology is very affordable and widely available. New technology will be very expensive and hard to get until it too matures and reaches the impressive scale of global mass production that today's technology has already achieved. So you can wait for new solar technology, but it will be a long wait.

All reputable manufacturers now give a 25-year warranty on their solar panels. Real lifetime is expected to be in excess of 50 years. Nothing is "used up" and nothing "wears out" in a solar module.

(Actually, there is a very tiny internal deterioration causing a small power loss, usually rated at about ¼ percent per year.)

Through the magical quantum properties of light and silicon crystals, photons are converted directly into electrons in the solar module – no moving parts, no chemical reactions, no emissions, no noise, no maintenance. Solar panels are truly solid-state electrical generators. That's pretty impressive technology already.

Other metallic crystals will generate electricity from sunlight, but silicon crystals are used because silicon is cheap and plentiful. It is the most abundant element in the earth's crust. Think of sand and volcanic rock, the same stuff glass is made out of. Won't be running out of silicon any time soon.

Thanks to everyone who attended our "Save with Solar" session last week, for your enthusiasm and your excellent questions. More sessions are planned in Dawson Creek, Fort St. John and Chetwynd. Watch for announcements.

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