

# Shocking! Living without hydro

**Newmarket couple spent \$30,000 for a solar system that allowed them to go off the electrical grid.**

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SPECIAL TO THE STAR

Derek Zoldy and his wife Casey were shocked to learn it would cost \$42,000 to get hydro service to the weekend home they were building in Haliburton.

That convinced the Newmarket couple to spend \$30,000 instead for a solar system that allowed them to go off the electrical grid.

Though the Zoldys' home sits just three poles away from power lines, it would have cost \$20,000 for poles and wires. They would also have had to foot the bill for clearing a five metre right-of-way through their wooded property that used to be part of the apple orchard on the estate of Sir Samuel Hughes, the decorated Minister of Militia and Defence who led Canada's military through World War I.

"I always wanted to try going off-grid and I liked the idea of being without reliance on hydro, but I'm the kind of person who doesn't dive in with both feet. I go in one foot at a time," says Derek Zoldy, who is an engineer.

The family's home, built by Confederation Log in the post and beam style, was erected in September 2010 and has a small one-kilowatt system that uses four solar panels. The energy collected from the panels is stored in 16 batteries in the basement (that can hold up to 58 volts) for use during the times when the sun isn't shining.

The system powers the lights and the 110-volt water pump, while a woodburning stove in the basement, fireplace insert on the main floor and propane furnace heat the home. Propane also fuels the stove, refrigerator, tankless water heater and back-up generator.

The Zoldys and their two sons spend almost every weekend at the chalet-style home and Casey, who is a teacher, and the boys lived there most of the summer. Going off-grid has meant some lifestyle changes, but the adjustments have been reasonable.

"You have to change the way you live. You want to use as much natural light as possible," says Zoldy.

During the day, lights are kept off and two kilowatt lights are used in the bedrooms, but Zoldy plans to go to low-energy LED lighting in the future.

"We went to a tankless water heater so we are not constantly heating



Derek Zoldy stands on porch of the Confederation Log Home, built on the former apple orchard of an estate that belonged to Sir Samuel Hughes (whose original home is now Sir Sam's Inn).



When Derek and Casey Zoldy learned it would cost \$42,000 to have hydro installed at their weekend home, they opted to install a one kilowatt solar system instead.

a water tank. That's the way to go off-grid," he says. "We put a 110-volt pump in the well, which is more efficient than a 200 watt and cycles less frequently.

"One thing we don't compromise on is water temperature for the showers," says Zoldy. "We don't have cool showers." They have installed rain showerheads in the three bathrooms to reduce water use.

The Zoldys haven't had to forego high-tech comforts either: laptops are charged during the day and run off batteries at night, and the family plans to add a low voltage LED television to the basement family room.

The Zoldys bought the property on a hill above Eagle Lake eight years ago but spent several years exploring their options before building, from modular homes to kit homes to custom building. All the family members are avid skiers and spend a good part of the winter on the slopes at nearby Sir Sam's Ski Resort.

They found what they were looking for at Confederation Log Homes in Bobcaygeon, where the company was willing to work with them to modify one of its home plans to suit the Zoldys' needs. Confederation is the first log home builder in Canada to meet Energy Star standards.

Confederation owner Rick Kinsman, who cut the logs for its first home 33 years ago, said although the company does have a portfolio of plans, every home it builds is customized to some extent or they'll work with a client's architect. The homes use FSC (Forest Stewardship Council) certified 80- to 100-year-old white pine logs from Ontario that are at the end of their life cycle and no longer producing oxygen.

"We have zero waste and use every log to the fullest," says Kinsman.

All homes are pre-built in Confederation's Bobcaygeon plant, where clients get to walk through their house before it's moved to the building site. With the Zoldys' 1,400-square-foot chalet (plus a 300-square-foot loft), orientation was important to maximize solar energy gain.

The energy collected from the panels feeds to an inverter in the basement, which diverts extra power to be stored in the batteries and can also trigger the backup generator. If the Zoldys do decide to connect to the grid some day, the inverter can accommodate that. A digital panel indicates what the solar load is from the panels and how much power is left in the batteries.

Zoldy estimates it cost about \$3,000 for propane from October 2010 to April 2011, but numerous contractors were in and out of the home during that time, running power tools on propane-powered generators to complete the interior. He estimates the cost will be \$2,200 for the same period this year.

Now that they've had some time to live off-grid, they are planning to add four more solar panels in the future and four more storage batteries. They are also thinking of building a new permanent home in the Newmarket area and will consider going off-grid with it, too.



Derek Zoldy in his family's off-grid house in Haliburton. He says the family is considering building another off-grid home in Newmarket.



Large windows allow the lights to stay off during the day and also allows the sun to heat the home.

Zoldy said the off-grid chalet requires slightly more maintenance than a conventional home; for instance, the storage batteries have to be topped up with water once a month, and in winter accumulated snow is swept off the solar panels with a squeegee.

He said people consider going off-grid have to start planning in advance, not only for building orientation, but to look at the best systems to facilitate off-grid living (such as the tankless water heater and the low-voltage water pump).

"We are now comfortable with it and we've had to make some adjustments to our lifestyle, but after last winter we all said 'yes, this is do-able,'" says Zoldy.