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Solar Nova Scotia

<http://SolarNS.ca/>



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From High Tech to Third World

by Derek Broughton

My colleague said the other day, as I recounted my recent problems with my alternative energy system, "Sometimes I can't tell whether you're High Tech or Third World". At which point I realized that sometimes it takes just a few minutes to go from one to the other.

I've learned some important lessons recently about solar power. When we moved into our new cottage I wanted to keep it off-grid. Knowing that getting power delivered to our home by Nova Scotia Power would cost between ten and twenty thousand dollars, I felt that we could do a lot with that money. We began by having a 24V DC well pump installed with a 100W photovoltaic panel and 400 amp-hours of battery backup. The cook stove, water heater and fridge all run on propane and our heat is provided by an oil stove. Since we had 24V available, I ran it into the household wiring (not yet needed for AC) and hooked up lighting using dual 12V fixtures. This worked well for a while.

The trouble began when my brother-in-law - possessed of a million pieces of exotic electronica, most of which he will never get around to using - offered me a free, large capacity, UPS that he thought I could use as an AC inverter. Lesson number 1: look gift horses in the mouth - especially if you don't understand how they work. When I tried to test it out, without any AC load, my wife suddenly started yelling something about a

Come to the Solar
Nova Scotia agm

7 pm to 9:30 pm

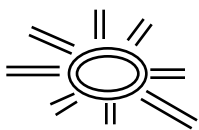
Monday, February 9, 2004

McINNES COOPER
BARRISTERS SOLICITORS & TRADE MARK AGENTS

Summit Place

1601 Lower Water Street

Guest speaker, Josh McLean, will talk about solar projects in Nicaragua, followed by a workshop on the now on-going Solar Home Inventory Project



fire... It turns out (I'm told) that a UPS scavenges power - when input voltage gets too low, it starts to draw higher and higher current. This is exactly the wrong thing to do with a solar power system. When voltage drops too far you need to disconnect load to save your batteries.

The US National Electrical Code requires manual disconnects and fuses for DC power systems - including solar systems. I don't know what the Canadian code requires because you can find the US NEC online, but in Canada you have to pay money for a large (and largely unreadable) book to get this sort of important safety information. Lesson #2: Whether it's required or not, you need manual disconnects. Disconnecting an arcing battery cable, while using the fire extinguisher with your left hand, is almost certain to leave you with burns. Fortunately, mine were inconsequential.



Clockwise from top: PV/battery controller, water tank, water pump pressure switch, battery box, and beer.

Once I got the fire out, I learned lesson #3: always have a spare charge controller. Buying a new one on a Sunday will cost you \$200+ - and it will still be Wednesday before you get it. Waiting until you can find what you need on eBay, you can get it for about \$50. In fact, I got a

much better one for \$75 with shipping. eBay is a wonderful place to shop for solar power products. I recently got two 175W panels for US\$1500 (with shipping) which is significantly less than the California renewable power rebate of \$4.50/watt (I had thought that the cost of PV

panels would never be any lower than the available rebates).

At this stage, we had arrived in the third world, with no water and no lights. I plugged the well pump directly into the solar panel and that gave us intermittent water. When



the new charge controller arrived we started recharging the batteries but they had discharged below the "load disconnect" point, so they still couldn't be used to run the pump or lights at night. It took two days with a backup generator to get them up to full charge. Lesson #4: keep your mandatory loads separate from your discretionary loads. The only thing we absolutely need to have electricity for is the well pump. Our new AC system is going to run off a separate bank of batteries and panels, but some of the solar panels will be switchable to the DC system to increase the charging rate on that system. If things get really bad, we can switch battery banks.

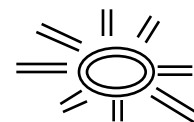
The AC system is now almost complete, the batteries are on the way. Lesson #5: you can buy local (at least here in Nova Scotia). My batteries are made by Surette in Springhill and actually cost less than alternatives I've priced. When it's operational I'll publish the designs. ✨

The Millennium Home Inventory becomes the Renewable Energy Atlantic Portal

by Daniel Mackay and Josh McLean

Clean Nova Scotia, in association with Solar Nova Scotia, has been successful in getting funding for an initial implementation of the Millennium Home Inventory Project.

This long-awaited activation of the project is being referred to as the Renewable Energy Atlantic Portal, because it falls within a regional marketing plan for Atlantic Canada. This initial project is only funded until the end of April, but it an exciting start to what we hope will be a highly successful promotion of solar and renewable energy in Nova Scotia



and Atlantic Canada.

The contract with Clean NS proposes that they will work in association with Solar NS to:

1. Establish and maintain a database of existing Solar Energy projects, available technologies and options in NS and other Atlantic provinces where possible.
2. Organize this information in an 'easy to understand' manner, and develop a website, brochure, and presentations.
3. Develop a marketing strategy to increase sales and the use of Solar Energy technologies across the province.

There are 3 main parts of this project:

1. Collecting the information
 - a. 'Solar Energy in NS?'
 - b. Existing solar businesses, services, etc.
 - c. Existing solar installations
 - d. Incentives for solar energy
2. Organizing information into a website, brochure, presentation
3. Developing a marketing strategy for Solar Energy in NS

Collecting the information

a. Solar Energy in NS?

One of the bigger hurdles of selling solar energy in Nova Scotia is the common myth that solar energy in this province is simply not economic. To counter this, information must be provided in the website, brochure, and presentation that explains the available options (e.g., PV, hot water, passive heating, off-grid, inverters, batteries).

Existing documents at CNS and other solar websites will be used to gather supporting information.

b. Existing solar businesses and services

Solar NS has the most up-to-date information on existing solar businesses. This information will be linked from the new website. Some graphic design work on the Solar NS webpage may be needed to match the design of the new CNS solar website.

An expanded search for solar businesses will occur using the NS Environmental Products and Services Directory, Canadian Renewable Energies Directory, through Solar NS and CNS listservs, and with the knowledge and help of the steering committee.

c. Existing solar installations

Solar NS has developed a database on a few dozen

existing solar homes in Nova Scotia. Daniel MacKay (Solar NS) has agreed to help CNS further develop this database.

To expand the database we will announce that we are cataloguing all solar projects in NS. We will request that people contact CNS if they have any information about installed solar projects. A prize may be offered as an incentive to identify new homes. We will send this message out via:

- Clean Nova Scotia and Solar NS email links, including home energy audits
- Other solar businesses
- Environmental organizations in NS
- All municipalities (UNSM listserv)
- Provincial and federal departments (Energy, Environment and Labour, Natural Resources)
- Steering committee members
- Schools, colleges and universities

Personal contact will help ensure each of these groups are willing to help. Information will be sent by e-mail after an initial contact by phone or in person. Additional information to collect would include the installer of the solar application.

Travel to homes may be required to collect latitudes and longitudes, pictures, and verification of installed capacity. This may not be possible in all cases due to limited funds for travel.

d. Incentives for solar energy

It is also important to inform people of any financial incentives that exist for solar technologies. Information will be gathered from:

- Department of Energy
- Environment Canada
- Natural Resources Canada

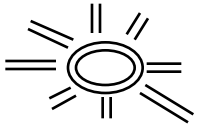
Likewise, private incentives will be sought with the help from CNS staff, steering committee members, and internet searches.

Developing a marketing strategy for Solar Energy

The end goal of this initial project is to develop a marketing strategy for solar energy, which we hope will include continuation of the home inventory project. The marketing strategy must be submitted to Environment Canada by the end of April 2004.

Come to the agm on February 9th and join discussion of how to promote this project and make it a success!h





New Corporate Members

Nova Sun Power and Dr. Solar are two new corporate members. Nova Sun Power provides customers with a variety of options when they are pursuing alternative energy products. Customers can call for information on solar, wind or water systems. We offer sales & installs for small, medium & large systems.

Free quotes and site assessments available. Call for an appointment to see our solar/wind system and talk to us about your ideas.

Contact information: Nova Sun Power owners, Robert & Cindy MacKean, Phone: 1 877-783-6147 or email: nsp@novasunpower.com Website: www.novasunpower.com.

Jim Allen is the owner of Doctor Solar Inc. He's interested in supplying solar water and infloor heating installation and service. You can contact Jim at 902 435-5567 or cell: 902 209-0586.



Upcoming Events

Maxwell's Plum every Friday night, 5 pm to 8 pm, drop down to chat about alternative energy.

Don't miss the Home Builder's Spring Home Show, Halifax Forum, March 5 - 7.

Join our Spring Solar Home Tour, April 18th, Lower Sackville area.

solar shelter courses

Solar Nova Scotia offers a practical, how-to course on designing and building solar shelter, including greenhouses, solariums, additions and especially solar homes. The course includes solar basics, climate control, site designing, shelter designing, solar construction, and making it happen. The main instructor is Don Roscoe, one of Canada's most experienced solar designer-builders.

This winter and spring we are offering 2 two-day courses in Halifax – one specifically for builders, and a later more general one. Register for either with Solar Nova Scotia at 902-852-4758.

For builders only, NSCC, Leeds St Campus (formerly NSIT), two Saturdays 8:30 - 5:00 February 7 and 14th.

For the public, Leeds St Campus (formerly NSIT), two Saturdays 8:30 - 5:00 April 17 and 24th.

Fee is \$80 for individuals and \$140 for couples. The course includes handouts with an optional textbook for \$15.

solar nova scotia membership form

name: _____

co. name: _____

address: _____

postal code: _____

phone: _____ email: _____

membership fees:

- \$10.00 unwaged/student
- \$20.00 waged
- \$75.00 corporate
- \$10.00 SESCO members
- \$_____ donation

Tell us what you are interested in:

- passive solar
- technical support
- promotion
- networking
- active solar
- education
- newsletter writing
- other: _____

How did you find out about Solar Nova Scotia?

- print advertising
- radio or tv promo
- phone book
- home show
- earth festival
- solar shelter course
- friend
- other: _____