



# Solar Nova Scotia

www.SolarNS.ca

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**Andy O'Brien Solar Home Design**

**Annapolis Valley Home Builders Association**

**BDR Research Ltd.**

**Cansolair Inc.**

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**Stoneridge Properties Limited**

**Sun Ross Energy Systems Limited**

**Systems Balance**

**Thermo Dynamics Ltd.**

*your company here!*

## Solar Shelter Manual: It's Bigger, It's Better, It's Nation-wide!

By Shawna Henderson

Thanks to a generous grant from Conserve Nova Scotia in 2007, we have been able to update and expand the Solar Shelter Manual.

The AGM was our first opportunity to unveil the update of our manual, reworked, revised and renamed: The Canadian Solar Home Manual. This version features many photographs, the same clear graphics and updated and expanded content on superinsulated houses, climate control and active solar systems. Six case studies of Canadian homes that incorporate passive solar, solar thermal and photovoltaic's (on and off grid) are also featured.

In it's humblest beginnings, waaaay back in the mists of time (well, in 1986), members of Solar Nova Scotia created a manual to go with a course on solar greenhouse design and construction. In 1992, the manual was revised and updated to better suit what course participants were really interested in, namely, passive solar home design. The Nova Scotia Department of Natural Resources and the Atlantic Canada Opportunities Agency funded that rewrite.

Fifteen years and twenty print runs later, here we are.

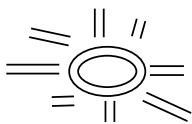
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### Show Times

**Friday, Oct 3: Noon - 9pm**  
**Saturday, Oct 4: 10am - 9pm**  
**Sunday, Oct 5 10am - 5pm**

**Exhibition Park, Halifax, N.S.**



SNS members Shawna Henderson, Mike Little and Craig Sheppard worked on the rewrite, the new look and new illustrations. Don Roscoe, along with several SNS volunteers, reviewed, commented and otherwise improved the drafts. Friend of SNS, Jigme Urbonas, lent her fantastic copy editing and proofing skills. Thanks to all who participated in the review process.

We will be printing off the first run of the new manual in time for the Spring Equinox and the 2009 Home Shows. We will be hosting a giant book launch party for the middle of March, look for more details in the next newsletter and check out [www.solarns.ca](http://www.solarns.ca) for updates.

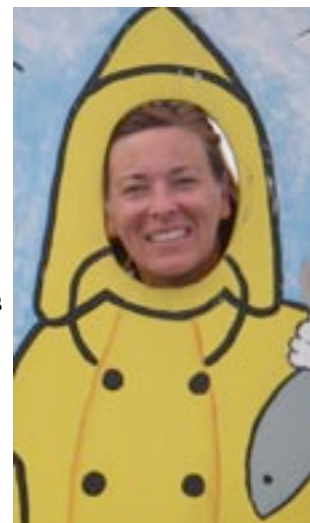
## Table of Contents

Solar Climate Rankings • Solar Basics • Site

Designing • House Design & Planning • Controlling Climate • Auxiliary Heating • Indoor Air Quality • Building Envelope • Overall Energy Reductions • Solar Add-Ons • Making it Happen • Case Studies & Appendices

## Ordering

The new manual will sell for \$30 (plus \$2 shipping), but we would like to offer members and friends of Solar NS an early-bird price of \$27



Author Shawna Henderson

## Carbon Footprint: Best Return

When thinking about reducing your carbon footprint, you probably think about new wind farms being installed down the road, planting trees or buying the latest hybrid vehicle. The latest report from the United Nations International Panel on Climate Change (IPCC) looked at the economic potential to reduce carbon dioxide emissions in seven key sectors. Buildings ended up providing the largest potential to reduce our production of greenhouse gas emissions: they are ahead of transportation, energy supply, industry, agriculture, forestry and waste. What does this mean? We also need to focus on making our new and existing homes, offices, hospitals, and all other buildings more efficient through stringent energy codes, research, education and new technologies.

To help us reduce our fossil fuel consumption and move this process along more quickly the report proposes that a price be put on carbon dioxide emissions which is seen as an effective way to mitigate catastrophic climate change. There are two

commonly proposed systems of putting a price on carbon; through a “Cap and Trade” and a “Carbon Tax.” This graphic also indicates the potential for emission reductions through three different levels of carbon pricing; at \$20/tonne, \$50/tonne and \$100/tonne. As the price of carbon increases, so does the reduction in emissions.

As you can see in the graphic, the greatest reduction in any one sector is 6 Gigatonnes (Gt) but with the total reduction of approximately 20 Gt required by the year 2030, action needs to be taken in all sectors to have a chance of meeting this lofty goal.

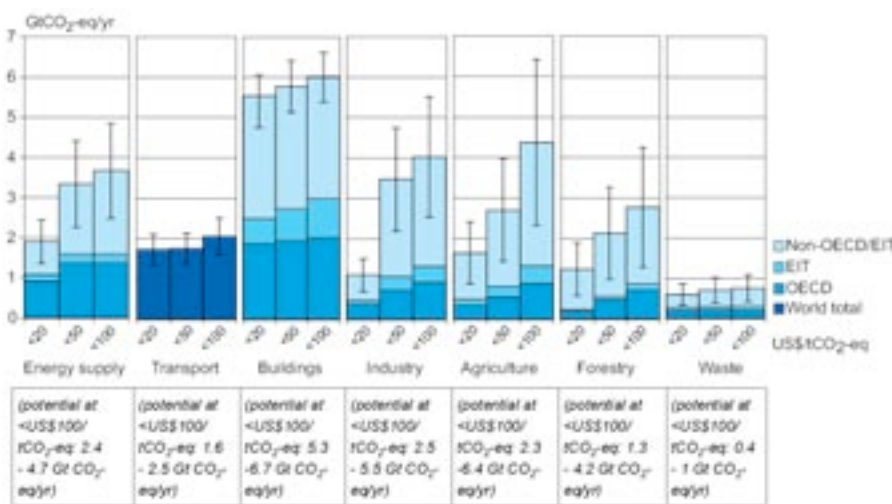
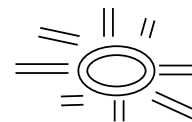


Figure SPM.6: Estimated sectoral economic potential for global mitigation for different regions as a function of carbon price in 2030 from bottom-up studies, compared to the respective baselines assumed in the sector assessments. A full explanation of the derivation of this figure is found in Section 11.3.



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# Proposed House Energy Efficiency Regulations in Nova Scotia

by Aaron Smith

There are approximately 3000 new houses built every year in Nova Scotia which add to the stock of 379,000 households in the province. Nova Scotia does not have regulations on the energy efficiency of home construction but new efficiency regulations are expected to come soon.

Almost two years ago, the Minister of Energy announced a proposal to increase the energy efficiency of houses built in the province. The proposal stated that new houses could be required to display an EnerGuide rating by 2008. New homes would then be required to reach an efficiency level of 72 in 2009, 77 in 2010 and 80 in 2011.

The EnerGuide rating system measures the energy efficiency of a home on a scale of 1 to 100. According to Conserve NS, the average new home built in Nova Scotia is a 67 while a new R-2000 home requires an energy efficiency rating of 80.

Homeowners have to pay \$250 to receive the EnerGuide for New Houses (EGNH) rating for their new home which requires an energy evaluator to model the energy use of your home, perform an inspection and an air tightness test. This cost is rebated if the home receives a score of 77 and the home owner receives an additional \$500 if the home receives a score of 80.

The Nova Scotia Home Builders Association estimates that the cost to upgrade from a typical new EnerGuide 67 home design to an EnerGuide 80 level is \$5500 but this would bring over \$1300 in annual energy cost savings. Upgrades involve increasing insulation levels, installing better windows and reducing air leakage.

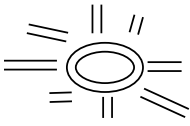
Besides upgrading your building envelope, you can make your home more energy efficient by orientating the house on an east-west axis providing more available southern exposure and allowing your windows to capture the heat of the sun during colder months. This requires more design work but it may

not require higher material costs. To help out with this, you or your builder can take Solar Nova Scotia's Solar Shelter course or read Solar Nova Scotia's Maritime Solar Shelter manual. This manual has recently been revised into the Canadian Solar Home Manual, available soon at your local bookstore.

To go one step further, the Canada Green Building Council (CAGBC) will be releasing a rating system entitled LEED for Homes in 2009. LEED, Leadership in Energy and Environmental Design not only focuses on energy usage but also looks at the site, water usage, building materials and indoor air quality. The existing USGBC LEED for Homes rating system has 136 points available in these categories giving you a certified, silver, gold or platinum rating. To combat the ever increasing size of homes, they have also introduced a Home Size Adjustment to their rating system. The bigger the home, the greater the number of points required for certification and vice versa for smaller homes. I think this is important because a 4000 sq ft. EnerGuide 80 home will use much more energy than a 1500 sq ft. EnerGuide 80 one.

Of course, if you belong to one of the 376,000 households not building a new home this year, there is an incentive program available for upgrades to existing homes, the Energuide for Houses program. Up to \$6500 is available through this program for anything to adding basement insulation to adding a solar hot water heater. This program uses the same efficiency scale. My 70 year old house was recently rated at an EnerGuide 34. With the proposed insulation and air leakage upgrades, my house is expected to reach an EnerGuide 61 – close to the efficiency of a typical new home.





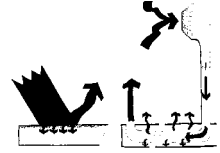
# Solar Workshops at the Home Show!!

Don't miss the following workshops:

Solar For Electricity, Active Thermal Solar: at 11 am to noon, both days, and Passive Solar Home Design: at noon to 1:00pm, both days, Saturday October 4<sup>th</sup> & Sunday, October 5<sup>st</sup>

## Join us for our popular Solar Home Tours

Tours include two fascinating home and a pot luck afternoon meal at the last house. Get on our mailing list (email info@solarns.ca) to be notified of upcoming Solar Home Tours!



Tours are open to Solar NS members, but you can join at the tour. Book early because tours are becoming increasingly popular.

### 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 instructor is Don Roscoe, one of Canada's most experienced solar designer-builders.

#### Fall Courses:

HALIFAX: NS Community College, Leeds St, 16. Register with Solar NS at 852-4758

six Thursdays 7-10:00pm, starting October

BRIDGEWATER: Bridgewater High School, six Mondays 6:45-9:45pm, starting October 20. Register with Sandy Mair at 543-2274.

Course fees are normally \$90 for individuals and \$150 for couples. The course includes handouts with an optional textbook for \$15.

## solar nova scotia membership form

mail to: Solar Nova Scotia, 83 Old Scotts Road, McGraths Cove, NS B3Z 3V2

name: \_\_\_\_\_

co. name: \_\_\_\_\_

address: \_\_\_\_\_

postal code: \_\_\_\_\_ phone: \_\_\_\_\_

email: \_\_\_\_\_

#### membership fees:

- \$10.00 unwaged/student
- \$20.00 waged
- \$75.00 corporate

#### 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: \_\_\_\_\_