

Energy Audit Experience by Sara Mathew

For quite a number of years, Sara Mathew felt she was doing her bit for the planet by using reusable bags, CFL bulbs and faithfully sorting her waste as many of us do. After seeing Al Gore's movie 'An Inconvenient Truth' she felt compelled to do more. She gave up her gas guzzler and bought a hybrid car. Sara also decided that volunteering in one's field of expertise would be the best thing to do, which for her was 'residential real estate sales'. "Our planet is in peril," she thought, "and the time is right to educate myself and other home owners about energy conservation." She took courses to learn about it and became an accredited 'Green Broker'. Wanting to lead by example, she scheduled a Home Energy Audit for her own home in February 2008. These are her experiences.

For the first time in Ontario, it pays to be green. All levels of Governments are paying anyone who is willing to do the energy upgrades. Rebates up to \$11,350 are available from both federal and provincial levels of government. But, \$10,000 of it is only payable if you do the upgrades after an 'Energy Audit' on your home. This audit determines the Energy Efficiency Rating (EER) of your home, out of a possible rating of 100 and provides valuable information about the retrofits you can do to maximize energy efficiency.

An Energy Auditor certified by NRCan (Ministry of Natural Resources Canada) came to my home and conducted a series of tests, including a survey of the heating and cooling systems, thermostat & hot water heater. He assessed the condition of the doors & windows, looked for evidence of condensation, mold and mildew and checked insulation levels. A 'Blower Test' was conducted to detect potential energy leakage and to check air seals. It took about 2 hours and cost about \$300 (varies depending on size of house). The Ontario government paid me a rebate of \$150 even before any retrofits were made.

The audit report outlined problem areas and recommended potential solutions. We were given 18 months from the audit date to do all or part of the retrofits recommended. Then the Energy Auditor will come back for a 'Post Retrofit Audit' to assess the impact of the retrofits. He/she is responsible for completing the necessary paperwork for the grants and rebates. The maximum rebate is \$5,000 from the federal government and \$5000 from the Ontario government. There is also a \$1,350 Federal Home Renovation Tax Credit available until February 2010, which can be claimed on your 2009 tax return. Other agencies like Enbridge and OPA (Ontario Power Authority) and municipal governments are also giving out grants/rebates.

For replacing my 20 year old, low performing A/C unit with a new 14.5 SEER (Seasonal Energy Efficiency Ratio) and 12 EER unit, (which uses the environmentally friendly 'Puron' instead of 'Freon') I should get \$250 from the federal government, \$250 from the provincial government, \$250 from OPA, plus 15% from the home renovation tax credit. So my \$3000 (approx.) A/C unit costs me \$3000 - \$750 - \$450 = \$1,800.00 plus all the electricity saved.

In a typical Ontario home the break down of energy usage looks something like this (based on data from Ont-2000, Office of Energy Efficiency., NRCan & StatsCan – dependant on weather, size of home, efficiency of furnace & appliances):

Space heating	57-62%
Water heating	20-21%
Appliances	12-13%
Lighting	4-5%
Cooling	0-7%

Now let us look at water heaters. I happened to read that having a traditional water heater is like plugging in a kettle every 15 minutes, just in case you decide to make a cup of tea. The tank doesn't know whether you are at work or on vacation. It keeps the water hot for you all the time which is a waste of energy. So I chose a tank-less water heater which hangs on my basement wall. I opted for a 'Navien' condensing water heater which has a built-in buffer tank. The new water heater costs approximately \$3,000. The federal government gave me \$375, Ontario matched them with another \$375. Enbridge gave a rebate of \$300 (only available until August 31, 2009), plus a 15% rebate for the federal home ownership tax credit. (I.e. $\$3000 - \$375 - \$375 - \$300 - \$450 = \$1,500$) Sounds good, right? This is way before the great savings I'll have on my future bills and the satisfaction from being green.

I have also changed 22 windows at a cost of about \$15,000. I should get a rebate of \$80/ window. I added an awning to the deck which will keep the family room cool in the summer. I still have to change my toilets to dual flush, seal air leaks, add insulation etc. More information and the latest details on grants/rebates can be obtained from any of the web sites noted below.

For several reasons, I believe this is the right time to do the Home Energy Audit and retrofitting. It stimulates the Economy, once we are out of the recession governments may not be as generous with rebates. Some of these rebates have a deadline, (e.g. Enbridge's rebate of \$300 on tank-less water heaters expires on August 31, 2009, OPA's \$250 on A/C units expires December, 2009 and the federal government's 15% Home Renovation Tax Credit (up to a maximum of \$1,350) expires February, 2010.)

There are so many simple things we can do if we absolutely have no money to do the retrofits. Unplug anything that is not being used, or use a power bar for TV's and Stereos to eliminate phantom loads. Assess the efficiency of old appliances like beer fridges in the basement.

But let me warn you, the Ontario government's new Energy Act is now law and a Home Energy Audit will be mandatory starting in 2010 for every one in Ontario if they want to sell their home. The government is in the process of ironing out a few wrinkles now. You might as well do the audit now and get the rebates and at the same time improve the value of your home. Remember, homes that cost less to operate will command a higher price on selling.

These are all the benefits in doing the audit and following it up with some retrofits, but what are the challenges to get there? The following are the ones I have experienced.

1. There are so many conditions on each grant/rebate and someone experienced needs to walk you through each step. If your Energy Advisor is not available to do that, you could end up losing a lot of time and thousands in potential rebates. For example, to get the \$250 from OPA for your A/C unit, the installing contractor has to be on their list. Also you must be replacing an old, less efficient unit, not installing one for the first time. The required SEER keeps on changing, and it is hard to keep up. To receive the \$40 + \$40 on windows there are specifications, the Energy Star sticker for the specific climate zone must be on each window replaced. If not, you need a lot more proof for the government. Your new toilets must be a certain kind and you need to search on the 'Veritec' site for info. You can change any number of toilets, but you will get rebate only up to four. These are all possible pitfalls.

2. Challenge #2 was finding a good contractor to do the upgrades. I see a conflict of interest when the Energy Auditor turns around and wears a new hat and says he/she is a contractor as well. How can I trust the Report he/she wrote?

3. Financial: it is a lot of money to do the best upgrades. But I would say this again and again, "If not now, when will we be able to do it?" If you have to borrow, it is still a wise decision. If it is still not possible, do the simple things I mentioned earlier.

As for me, I am going all the way. Once the 'Post Retrofit Audit' is done in July, I am planning to go for roof-top solar panels. The new Ontario Energy Act is now law and it looks very good for 'sun worshippers'. I am still learning more about it by attending meetings but what little I know I can share with you. Some time ago, if you generated solar power at home, you used what you needed and the government took back the rest and said "Thank You". Later it changed so that the government was paying about 40 cents/ kwh on what we put back into the grid, after our use. Now they are willing to take the whole production at 80.2 cents/ kwh and we buy back what we need at the going rate and it is a 20 year contract. Where can you go wrong here? Even if you are not planning to stay in your home for 20 years, when you are selling, you are selling an income producing property. Remember, lower operating cost for the home equals a higher sale price. So, you may want to hurry up and get an energy audit done.

Helpful Web Sites and Telephone Numbers about Audit/Retrofit/Grants:

- www.nrcan.gc.ca info on eligible improvements/retrofits, grants/rebates
- <http://oeo.nrcan.gc.ca> to learn about Energy Audit and available rebates
- www.ecoaction.gc.ca/homes to find an Energy Advisor in your area, certified by NRCan. You may also call 1-800-O-CANADA
- www.energystar.gc.ca for info on Energy Star qualified products
- www.veritec.ca Grant eligible, water efficient toilets are listed on this site
- www.mei.gov.on.ca info on Ontario Government grants/rebates
- <http://tiny.cc/T7P9k> online shortcut to find incentives
- www.ourpower.ca empowering communities re: solar/renewable energy
- www.trec.on.ca Toronto Renewable Energy Co-Operative (Our Power is a project of TREC)
- www.waterfortomorrow.com York Region site for water conservation/toilet rebates

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