



# Going Green

Spring 2015

## Harvey Fairfield: Energy Champion



Harvey Fairfield, Lead Hand of South Cowichan Recreation, and nephew Mason on a Zamboni at Kerry Park Recreation Centre.

*What advice would you give to others wanting to save energy in their homes?*

Thoroughly check over all exterior windows and doors for any caulking that is missing, and look for broken or missing door sweeps or gaps under doors due to the door not sitting level. Turn lights off when you leave a room or when your kids leave a room. Install programmable thermostats and motion sensing lights or auto on/off exterior lights (ones that go on when it's dark and go off after a certain amount of time).

*What was the single biggest impact change you made?*

Switching to an on-demand hot water heater. Also, we run propane for our heat, cooking, and hot water so this takes two big power outputs off of our hydro and makes

them minimal by using propane. We go through about 10% of propane a week over the winter and 5% over the summer, as the furnace is a big user of propane. I am thinking of going to a pellet stove for heat after I compare some costs.

*What was the hardest change to make?*

We bought a new modular home in 2012 so everything was updated for us. I switched to the on demand water heater and changed over the lights. The hardest thing was to educate the rest of the family and get them on board with turning off lights and letting electronics run down before plugging them in.

*What was your biggest overall motivator?*

We have a brand new home so everything is now sealed up, windows are upgraded, insulation is thicker better R value. With increasing hydro costs, we were just trying to be more conscientious.

*How much have you saved, and how long did it take to see cost changes?*

We noticed savings in the first month. So far we have been saving \$25 per month.

*Are there any changes that worked for you in your home that you think would translate well to a change we could make at work?*

Here at Kerry Park we have done a lot of upgrading to lights, boilers, and efficiency already. I am not sure how an on demand system would work for our environment.

*What easy changes would you suggest others try that gives a big impact?*

Going to the on demand water heater (cost is about \$1500 plus installation), checking all the exterior door sweeps and linings, and changing to LED or low wattage lighting.

*Thanks for sharing your success, and congratulations on winning BC Hydro's \$75 rebate for being an Energy Champion!*

### Cool New Ice Making Technology

Last summer, facilities staff at Island Savings Centre and Kerry Park Recreation Centre participated in Fortis BC's Ice Rink Resurfacing Efficiency Pilot Project. Fortis offered a rebate for the installation of vortex mechanical de-aerator technology, and monitored changes in electrical and gas efficiencies in all aspects of ice resurfacing.



**Drought Friendly Landscaping:** Island Savings Centre staff planted a few trees last September and opted to turn off the irrigation system due to drought issues. These shrubs will be watered with Zamboni snow instead.

To create a smooth ice surface, air bubbles and filaments must be removed from the resurfacing water. Traditionally, this is achieved by heating the water. Vortex technology removes air bubbles and filaments from the water using cavitation, which lowers the pressure of the liquid, allowing air bubbles to form at lower temperatures.

At the Island Savings Centre, where resurfacing water had been heated to 142 °F, vortex technology was able to remove air bubbles and filaments at 64 °F, and the ice rink did not need to be resurfaced as often. As a result, annual natural gas and electricity costs fell by \$4980.

At Kerry Park Recreation Centre, resurfacing water had been heated to 100 °F to remove air bubbles. The vortex system performed the same job at 55 °F, resulting in annual gas and electricity savings of \$5320, despite the slight increase in the number of times the ice was resurfaced.

After the vortex system retrofit, resurfacing water came straight from KPRC's well, which is warmer than ISC's city water. ISC must combine cold and hot water to achieve 64 °F, which is why the savings differed at the two ice arenas. Congratulations on two successful pilot projects!

### P&D Reduces Printing Costs

Last August, Ross Blackwell, General Manager of the Planning and Development Department, issued a challenge to his staff to change their copying habits. Did they ever!

Their August 2014 bill showed that their Ricoh machine printed 25,038 colour copies and 30,043 black and white copies over a three month period. Colour copies cost over 6 times more per page than black and white copies, so staff were asked to default to black and white instead of colour.

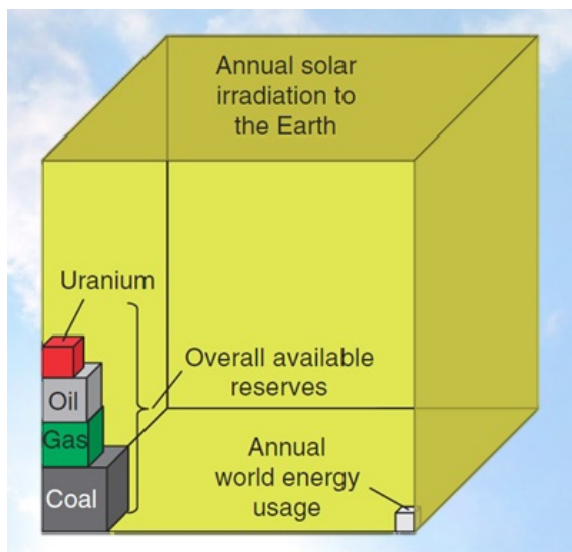
When the next three month bill arrived in December, it revealed very different numbers. Colour copies were down to just 8,180 copies, resulting in significant cost savings for the department. But black and white copies were also down: 22,273 copies. The net result was a savings of nearly \$2000. Congratulations, P&D!

## Is Solar Energy For You?

In April 2015, the Green Team sponsored a Solar Energy Lunch & Learn with three guest speakers.

Parker Jefferson from One Cowichan ([www.onecowichan.ca](http://www.onecowichan.ca)) emphasized the need for alternative energy sources as a way to reduce the impact of climate change. This spring, One Cowichan began a campaign to make the Cowichan Valley the solar energy capital of BC.

Kuan-Jian Foo works for Viridian Energy Cooperative (<http://www.viridianenergy.ca/>), a group dedicated to reducing greenhouse gas emissions by providing consulting, design, and installation services for renewable energy options. Kuan talked about the viability of using solar power to generate electricity in our homes.



**Energy Cube: the energy available from the sun far outweighs traditional fossil fuel reserves, and the world's energy demands.**

The new smart meters are bidirectional, meaning they can measure electricity flowing to and from your house. Installing solar panels in your home reduces your BC Hydro energy use, first offsetting costs at the highest Tier 2 rate (\$0.1195/kWh), then at the Tier 1 rate (\$0.0797/kWh), and then they can create a credit at the Green

Energy Producer rate (\$0.99/kWh) as the surplus electricity created from your solar panels is exported to BC Hydro's grid. Instead of a bill, BC Hydro may send you a cheque.



**Ground mount installation of solar panels.**

The last decade has seen a remarkable decrease in the cost of solar installations. Ten years ago, the cost was \$12 per watt, and today it is only \$3 per watt. Solar costs in BC are nearing grid parity, meaning that the cost of installing solar panels is nearly equal to the cost of connecting a home to BC Hydro's grid.

Solar panels are thin layers of semi-conductors. The sun creates an electrical reaction in these layers, generating a direct electric current, the same DC current found in batteries. Inverters are attached to the panels to convert the direct current to an alternating current that can be used to power our homes. Panels and inverters have a life expectancy of 30 years, and come with warranties of 25 years.

But can solar power really be cost effective in BC, where we get so many cloudy days? Yes, if the solar panels are installed in a location that meets these criteria:

- Clear south facing surface (solar south, 21 degrees off magnetic south)
- Sunshine year round, ideally between the hours of 9 am to 5 pm every day
- Minimal shading
- For roof installations, a roof that is in good condition

When these criteria are met, the simple return on investment for a 5 kW system, based on today's energy costs, is 22.8 years. It's a long term investment, but if



energy prices continue to climb, the return could come much sooner. Another way to think of it is that you are buying your energy up front for the next 30 years.

This is a long-term investment. There are many ways to look at the potential savings:

- Payback after 21.5 years with 3.5 years of “free” electricity for a 3.1 kW system.
- Equivalent internal rate of return as locking in to a 25 year 2.0% GIC that pays out interest every year. (if you re-invest your savings, the return is even higher)
- A 3.8% annual return or “non-taxable dividend” that increases to almost 8% in year 25.
- Increase in real estate value



This Solar Path Finder is used in shading analyses to calculate the amount of energy that could be generated by solar panels at any given location.

Viridian offers free shading analyses using solar path finders to calculate how much energy solar panels could generate at any given location (site assessments are free, reports are not). If your property is too shaded, several solar financing groups allow investors to own a solar panel on leased land that has ideal access to the sun.

Kuan's powerpoint presentation is available on the Green Team's Staffnet page under Green Resources.

Finally, Kate Miller described some of the work that the CVRD has done to identify potential opportunities for alternative energy sources, including maps of ideal sites for solar, wind, microhydro, tidal, and geothermal installations.

All three speakers agreed that the best approach for the homeowner is the following, in this order:

1. Make your home energy efficient. For example, install adequate insulation.
2. Reduce your use of energy.
3. Look for alternative sources of energy.

Door prizes for this event were won by Penny Moffat, Gord Bonekamp, and Andrea Kross. The winners and presenters were each given an LED lightbulb.

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### Just Eat It!

If you missed the Green Team's February 2015 Lunch and Learn film, shown in Ingram Street's Board Room, Kerry Park's Dennis McLean Room, and Cowichan Lake Sports Arena's curling lounge, here's the link to it on Knowledge Network: [Just Eat It!](#)

Try this food waste quiz by Sustainable America, which generates a customized list of food waste reduction ideas based on your responses: <http://ivaluefood.com/quiz.php>

A draw was held using names of attendees at all three venues and the door prize was won by Jodi Hieta from Cowichan Lake Recreation. Jodi won a \$50 gift certificate to the Community Farm Store. Congratulations!

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### Green FAQs

Can plastic bags be recycled? Are tea bag wrappers recyclable? Check out the Green Team's [FAQ](#) page on Staffnet. If you have a question that you think should be added, let us know!