

# Watt's Happening?

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## My Solar

**P**ractical, affordable solar electric power has finally come to the world . . . and the BC Peace Region.

With the price of solar panels falling dramatically, and with local expertise in design and installation now in place with Peace Energy Cooperative in Dawson Creek, it's well worth considering for home or business.

With that in mind, I'll give you a brief overview of both my 30-year old home solar power system and my new one-year old business grid-tie system. How are they performing? Are there hidden or unexpected costs? Here's the low down:

### HOME SYSTEM

I lived off-grid with solar power for something like 10 years back in the '80s: a small solar array, battery bank, and modest electrical needs. This was long before solar panels (known as photovoltaic or PV panels) were cheap (I paid \$800 for a panel that would now cost \$80) and the electronic technology needed to convert solar DC power into regular AC power ("inverters" they are called) was primitive at best.

Way back then, I ran DC power throughout the house for lighting and had DC outlets that I could plug simple DC appliances into, like fans or a portable TV. A simple inverter ran power tools and a few AC appliances. Basic, but it worked and I was well lit and comfortable. Because I was in a forest, (a less than perfect solar location, but what the heck!) I had to run a back-up generator to charge the batteries during the winter.

Then in the '90s, getting older and wanting more creature comforts (like plugging in vehicles without running a generator!), and the PV technology still being pretty basic, I brought grid power into the house and added it to my existing PV system.

So now for the last 15 years I have been running



*The author's small home solar array (about 1000 watts peak power) has been operating both independently off-grid and partly on-grid for 35 years. The system features a battery bank that can run the household for at least several days if the grid goes down.*

a "hybrid" home solar power system: DC still runs all my lights but a modern inverter runs everything else (freezer, computers, big screen TV, kitchen appliances, etc) from the solar panels and battery bank, with some grid power as needed. The battery bank gives me a few days of total independence should the grid go down, which it does, as well as power through the night.

The whole system is automatic, with the only maintenance consisting of adding a bit of distilled

water to the battery bank about once a month (which takes about 10 minutes).

So what can we conclude from my home PV experience? 1) solar power is not new. Folks have been living off-grid with it for at least 30 years; 2) solar power has become more reliable (more reliable than the grid!) and MUCH more affordable over that time; 3) having your own independent solar power supply works well and requires only minimal maintenance or attention; 4) solar panels last essentially forever: the first panel I bought some 35 years ago is still working just fine, and they are only better now; 5) large lead-acid deep cycle solar batteries last for about 10-12 years before replacement; 6) modern inverters will run any appliance or electronic gadget perfectly, and are more reliable than regular grid power.

### **BUSINESS GRID-TIE SYSTEM**

Things have changed in 35 years: PV panels are now dirt cheap, and solar technology has matured to

perfection. So I decided last year to take the plunge and solarize my business in downtown Dawson Creek with new state-of-the-art equipment.

I knew that BC Hydro didn't pay much for the power I would generate, but that they had greatly streamlined their grid-tie approval process, so as long as I did things according to code, it would be easy to get set up and feed green solar power into the grid, reducing or eliminating my electrical bill.

Peace Energy Cooperative was also getting heavily into PV sales, so they were there to help me design and buy what I needed at best price and quality, and then connect me with a qualified local installer.

In the next "Watt's Happening" I'll profile my new 5-kilowatt grid-tie PV system and report on how well it has done since installation last autumn. Hint: for the first time in my life, I now eagerly anticipate the arrival of my electrical bill!

## **Quick Fact:**

### **GERMAN FEED-IN TARIFF A SUCCESS:**

A new report from the Solar Energy Industries Association concludes that Germany's solar-power support, based on a feed-in tariff (special prices paid for solar power) has been "remarkably successful, given the goal – shared by a great majority of the population – of 'de-fossilizing' the electricity sector." The report concludes that feed-in tariffs work, and have made Germany the world leader – by a huge margin – as the nation with the most installed solar power capacity.