ECONEWS

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WHERE IS OUR SOLAR FUTURE?

The light that is entering your eyes right now has come from that vast nuclear fusion reactor we call the Sun, 149 million kilometres away. Just eight minutes and 18 seconds ago, it left the Sun. So did the heat, travelling across space as radiation. Ponder this the next time you are lying in the sun, doing nothing.

Along the way, we renamed it solar energy, and during the last nano-blink of geological time we learnt how to harvest it, putting solar panels on our roofs to generate electricity, heat and hot water.

If you cover a 1000 square foot south-facing roof with 10 kW of solar panels, you will generate around 10,000 kWh of electricity a year, which is enough for the average BC home. If our homes and appliances were twice as efficient, we'd only need 5 kW.

"So why isn't it happening?" you may ask. Well, it *is* happening – but it is slow to get started in BC. By the end of 2008, 12,000 MW of solar photovoltaics (PV) had been installed around the world, and the industry was growing by a phenomenal 40% a year, primarily in Germany, Japan and California.

Solar hot water is also expanding at a rip-roaring rate, with over 40 million rooftop systems installed in China, for 70% of the world's total.

The same solar hot water technology that the Chinese use, using a tank on the roof, has been installed by Globe Solar, on Julia Roberts' house in Nelson, who benefited from up to $3,225 in incentives and tax rebates from SolarBC. (See photo. That's "our" Julia Roberts, not she of Hollywood fame).

Solar BC was set up by the BC Sustainable Energy Association, with funding from the provincial and federal governments, and if you go to www.solarbc.ca or call 1-866-650-6527 you can learn about the choice of solar thermal systems available, and apply for an incentive yourself.

In Europe, the solar thermal industry has set a goal to be producing 50% of the heat needs for all buildings from solar thermal by 2030, using storage systems that capture summer heat for winter use.

And then there's the deserts, which receive 4,000 times more energy a year than the world uses. How's that for a surplus, when you want to close down all the coal and gas-fired power plants?

Concentrating solar thermal plants use mirrors to focus the Sun's 8-minute-old heat to produce steam. There's a 354 MW plant operating in California's Mohave Desert, and a new 20 MW solar tower in Spain that powers 10,000 homes – and Europe is planning big.

Theoretically, 0.8% of Algeria's desert could produce enough electricity for all of Europe, the Middle East and North Africa. (See www.trec-uk.org.uk). Since the heat can be stored in water or molten salt, it can produce useful power 13-16 hours a day, meeting 90% of the grid's daytime load.

In the USA, a 15,000 square mile area of desert, using this technology, could provide 90% of America's power needs from 0.4% of the US land.

So now let's get back to solar PV. By 2007, Germany, with the same or less sunshine than British Columbia, had installed 3,862 MW, for 52% of the world's solar PV. Canada had 20 MW.

Solar PV is expensive, but the price is falling, driven by mass production. In 1990, it cost 60 cents US per kWh. By 2000, it had fallen to 30 cents, and by 2015 it may fall to 15 cents. Here in BC, we pay only 7 cents/kWh CAN, which is a big disadvantage. In Germany they pay 22 cents/kWh – and their industry has not crumbled. Instead, they have become far more efficient.

As well as their high price of power, Germany's secret is a policy called the feed-in tariff, just adopted by Ontario, which provides a 20-year contract to anyone wanting to produce renewable energy for the grid, with a fixed price of up to 80 cents a kWh for a small roof-mounted solar PV system up to 10 kW. At that price, you can line up investors in days. The money comes from a small $3 rider on the monthly electricity bill.

So now we come to the challenge. Would people in BC be willing to pay $3 a month to support the development of a made-in-BC solar industry, and generate additional green energy?

Unlike Germany and most other places, BC already produces 90% of its electricity in a relatively green manner, and with new green energy coming on stream, we will soon be 100% self-sufficient, even in low-water years. That means we would be paying the monthly $3 to export a surplus of green energy to Alberta and the US, where it could help close down the coal-fired power plants.

From the climate emergency and the build-a-solar-industry perspective, it makes sense. But will people accept that? This is the question we need to address as we seek to build our solar future.

Solar is coming – there's no mistaking that. We already have a good foundation in BC with companies like Carmanah, Day4Energy, Xantrex, Energy Alternatives and Swiss Solar Tech, but if we sit back and do nothing, when the price is finally low enough we will end up importing it all from the Chinas of the world. And that would be a huge missed opportunity.

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