

Watt's Happening? #92

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The cost of renewable energy

Ontario recently put the brakes on its aggressive move to renewables, cancelling the second phase of its Large Renewable Procurement program that would have brought another 1000 megawatts of clean energy projects to tender. Why the cancellation?

A recent CBC news report implied that electricity from renewables is more expensive than conventional energy and was therefore driving up Ontario utility bills. The government was, apparently, only responding to consumer pressure.

A handy sound bite perhaps, but a massive oversimplification. Let's have a closer look at the real cost of renewable energy.

FEED IN TARIFFS

Like many jurisdictions around the world, Ontario kick-started its renewables industry (mostly solar and wind power) by offering premium prices for electricity produced by them. This "feed in tariff" idea was a German innovation that has been widely adopted around the world.

Feed in tariffs guarantee a high price for renewable energy to encourage homeowners, businesses and developers to invest in renewable infrastructure. Over time, as the various industries become established, the tariffs are reduced then eventually eliminated, letting market forces take over.

In many ways, this has been a very successful strategy in Ontario. Both wind and solar industries are now well-established and rapidly approaching market competitiveness. The third largest solar manufacturer



Thanks to mass production, the cost of LED light bulbs has fallen 94% since 2008. Similarly, economies of scale have rapidly reduced the cost of renewable energies like solar and wind. These savings are now being passed on to consumers.

in the world, Canadian Solar, is located in Ontario, and thousands of people are employed in both the wind and solar industries across the province.

FALLING COSTS

Like any new technology, costs fall as production and implementation ramp up. This has become really clear to anyone watching the cost of solar over the last few years, which fell dramatically when China entered the solar market.

China still leads in solar manufacturing and installation, but even they haven't been able to supply the exploding demand that low prices have launched. Massive solar factories have opened up around the world with no end to demand in site.

A new U.S. Energy Department report puts fresh numbers on what is now a proven fact: renewable energy is dirt cheap and, as it rapidly spreads, getting cheaper. Since 2008, the cost of land-based wind power has fallen 41 percent, the cost of rooftop solar has fallen by 54 percent, and utility-scale solar by 64 percent. The report also notes that energy storage costs have fallen in the same time period by 73 percent, and the cost of LED light bulbs by 94 percent.

Looking south of the border we can get a glimpse of how Canada may look in a decade or so, with electricity prices falling as renewables expand. Wind power now supplies enough electricity for about 17.5 million American homes. Iowa produced 31 percent of its electricity from wind last year, and a total of 12 states generated 10 percent or more.

This is happening because solar and wind make

both environmental and financial sense. As mass-production continues to ramp up and costs continue to decline, substantial savings are being passed on to consumers. American consumers in the 10 states with the most renewable energy pay less on their electrical bills than the 10 states with the least amount of renewables.

MAKES SENSE, DOESN'T IT?

Sure it costs more to gear up production and get a whole new energy mix in place, but once its there, it just harvests free energy. This is clearly shown by the amazing fact that renewables are already cost competitive with conventional non-renewable energy sources in many areas of the world (without subsidies), after just a few short decades.

So what's with Ontario? For one thing, Ontario now has more power than it needs, so this is actually a pause, not a cancellation. As well, demand for electricity is leveling out, not rising as predicted. Unprecedented leaps in efficiency and widespread "self-supply" are part of it.

But I also think there's more to it than that. Renewables bring energy out of hiding. With wind turbines spinning up on the ridge and a solar array on my roof, energy is here, not somewhere else. This raises my energy awareness. Add in a motivator like climate change, and consumption naturally declines.

Big change means growing pains, but the cost of clean distributed energy is going down, down, down, and our electrical bills are soon to follow.



Bear Mountain Wind Park near Dawson Creek supplies power to some 35,000 homes in the South Peace Region.