

# Watt's Happening? #168

by Don Pettit

for Peace Energy Renewable Energy Cooperative

www.peaceenergy.ca ph 250-782-3882



## Solar: still growing strong



*Solar energy reached “grid parity” this year making it one of the cheapest energy sources ever.*

**T**his past year was an historic milestone for solar energy: 2019 was the year that solar became the cheapest source of electricity on planet earth. Cheaper than coal, cheaper than nuclear, cheaper than hydroelectric, cheaper than gas, even cheaper than wind, which is running a close second.

And that, to be clear, is without the subsidies that so many conventional energy sources still enjoy.

### HOW DID THIS HAPPEN?

Just ten or fifteen years ago, solar panels were hard to find and way, way too expensive for everyday use. They were fine for satellites and space probes, but almost nowhere on earth could you find solar panels on roofs powering homes. Today solar roofs

are everywhere and spreading fast.

The answer of course was a massive scale-up in production and tremendous leap in manufacturing efficiencies. As an early adopter and solar enthusiast, I watched this jaw-dropping change happen about 8 years ago. No energy expert or economist had predicted this. Now, before my very eyes, solar was revolutionizing how we make electricity.

Around the world today hundreds of thousands of solar panels are manufactured every day, and every one that is made is quickly purchased and installed, with no end in sight. The price drop has more or less bottomed out, but it's not over. Experts say that solar energy now selling into the grid at three cents per kilowatt-hour is headed for two cents. That's the cheapest grid-scale energy EVER!

## **SOLAR IN THE U.S.A.**

The fastest-growing job in the U.S. today is “solar photovoltaic installer.” By the end of 2018, there were 1.5 million solar panels installed across the continental U.S., enough to power 12 million U.S. homes.

The total generating capacity in the U.S. today is about 1,200 gigawatts (GW) or 1.2 trillion watts. 10.6 GW of solar were added to the U.S. grid in 2018 alone, with solar expected to reach, conservatively, 20% of U.S. electrical power by the end of the coming decade.

Solar panels run without maintenance and without polluting for a very long time, 50 years at least, and then the old panels are 97% recyclable. Meanwhile, U.S. solar now offsets 70 million tonnes of carbon dioxide every year, about the same as planting 1.2 billion trees. Not bad for a technology that was almost unheard of just 10 years ago.

### **UNLIMITED GROWTH**

There is nothing in sight that will limit the growth of solar.

The active part of most panels, the part that turns the photons of light into the electrons of electricity, are made of crystalline metallic silicon, one of the most abundant elements in the earth’s crust. Think of sand or quartz, the same stuff glass is made of. Cheap, abundant and everywhere.

The embodied energy of solar panels, that is, the electricity and carbon generated to make

a panel, started high but is falling fast, as more and more panels are made with more and more renewable energy, and the whole process becomes more energy and materials efficient. Thus the falling price.

Although many of the huge new solar “farms” are on vacant land, the amount of space still available on roofs is immense and largely untapped. In the U.S. filling the 70 billion square feet of commercial roof space with solar would provide one quarter of all energy the nation needs.

Walmart is already doing it, with solar covering the roofs of 500 of its stores in 22 states, with plans to install solar on all of its 5,400 U.S. facilities. Sure, its good public relations to go solar and good for the environment, but more importantly it saves money, big time. Solar is cheap electricity. The solar “fuel” is free.

Target is even more aggressive with 20% of its stores covered with solar panels, and IKEA with 90% of its U.S. outlets now solar powered.

Solar is cheap electricity with no moving parts, very little maintenance and very long life.

Its creating millions of new clean energy jobs.

It makes economic sense at any scale, powering whole cities, huge factories and immense stores, or just powering your home and charging your electric car.

A technology almost unheard of a decade ago has come out of nowhere and overnight made the world a better place. Wow. Very cool. So glad I got to see it.

# **The fastest growing job in the U.S. today is “solar photovoltaic installer.”**

