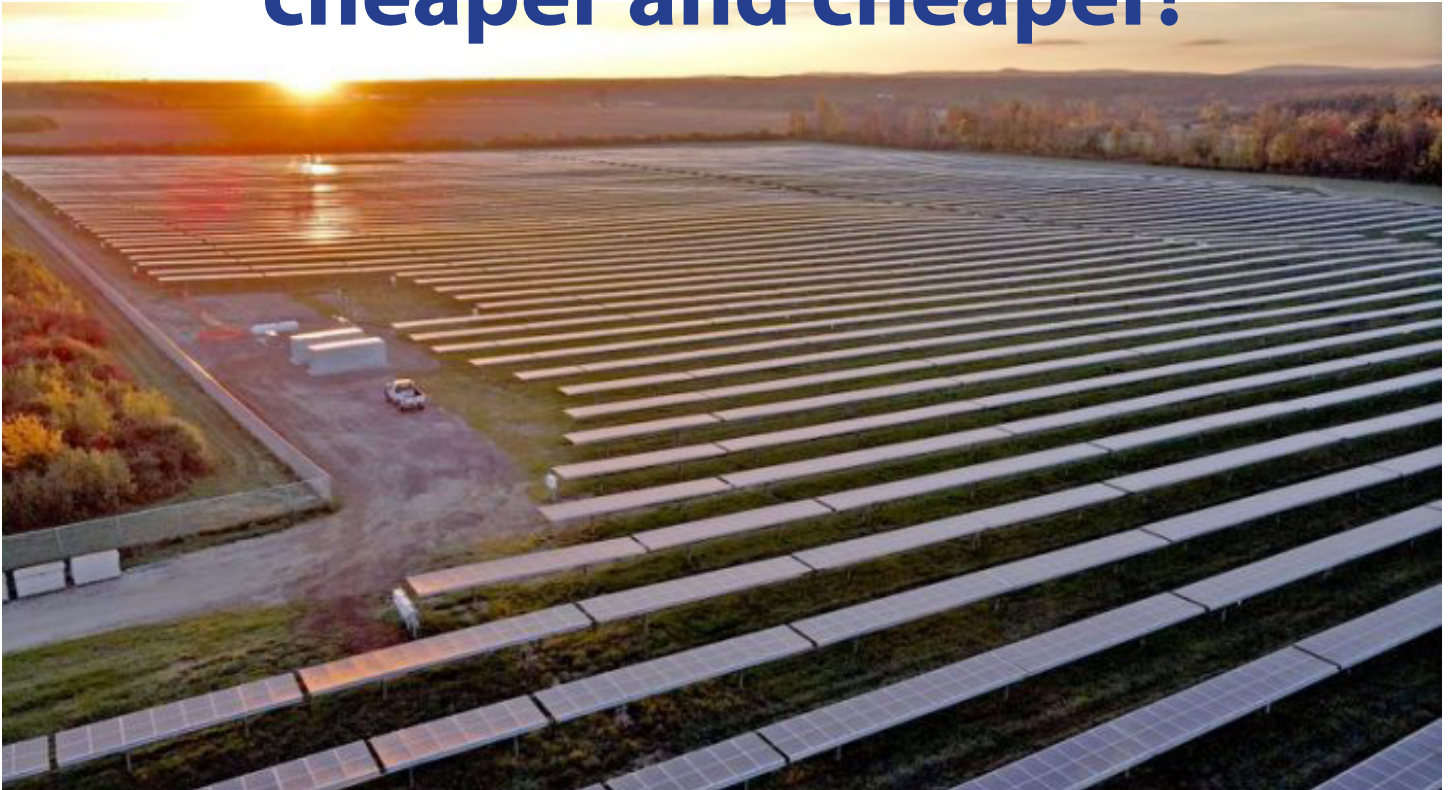


Watt's Happening? #258

Written by Don Pettit
for Peace Energy Cooperative, Dawson Creek, BC Canada
www.peaceenergy.ca



LOW CARBON ENERGY cheaper and cheaper!



The price for energy produced from solar and wind has fallen so quickly that most people do not know

that they have become cheaper than any other energy source. And the price continues to fall!

It's easy to underestimate just how fast things can change. Solar technology is a great example.

Back in the 1950's, the main use of solar was to power satellites. It has been estimated that to build one of today's modern solar panels, (like the ones you may have on your roof powering your home) back then would have cost about \$600,000 in today's dollars. How did it drop from that to just a few hundred dollars today?

SOLAR MAGIC

Over the last few decades something magic has happened: the price for solar began to fall rapidly

as we began to use more of it. The more solar panels we deployed, the more prices fell, which increased demand so we made more solar panels, and the price decreased even more. This "learning curve" for solar has been about 20%: every time installed capacity doubles, the price falls by 20%.

Fifteen years ago, the cost of solar was still close to \$350 per unit of electricity generated, onshore wind about \$130, while coal was steady at about \$100. The choice was obvious back then: coal.

What is it today? Solar \$40 (wow), onshore wind \$41 (more wow), coal steady at about \$100. (Gas by the way is about \$60) Already cheaper than coal or gas, and the cost of solar and wind continues

to fall!

Why have wind and solar fallen so quickly and why do they continue to fall while fossils stay the same? The “learning curve” yes, but also because the cost of wind and solar is not tied to the price of fuel. Solar and wind are not only inexhaustible but also come free for the harvesting. Free fuel forever!

GOTTA HAVE STORAGE

Of course, wind and solar are intermittent, sometimes the sun shines and the wind blows but sometimes it doesn't. So storage in large, cheap batteries is the answer. And guess what, batteries are following the same “learning curve” that solar and wind have followed!

The cost of lithium batteries has fallen by 98% over the last 30 years, and that cost continues to fall rapidly. All of the metals in these batteries can be recycled and re-used indefinitely. Full life-cycle engineering (which Tesla and others are pioneering) means that once we have a good supply of batteries in hand, the need for these minerals and metals will fall dramatically, along with the price. And that will be very soon, just like solar and wind!

COAL

We've been talking about the best energies, now let's look at the worst. As the cost of solar and wind have plummeted, the cost of coal power has stayed about the same. For countries just entering the rapid growth phase of the modern world (like China and now India) coal has been the obvious choice. Quick, easy, but immensely dirty. The human and environmental costs of coal fired air pollution are

staggering, and developing countries quickly find this out.

Per capital use of coal in China is falling, and India is expected to follow suite. Renewables like wind, solar and storage are just so much cheaper than coal!

In the 1950's, coal supplied over 90% of the UK's energy. Now it is less than 2% and will be phased out completely next year. And this is where the coal-fired industrial revolution began!

Thanks to huge cuts in coal use, Germany's greenhouse gas emissions hit their lowest level in 70 years this year. This in spite of having had to temporarily ramp up coal use to offset energy shortages caused by Russia's war on Ukraine. Germany's goal is to cut carbon emissions 65% below 1990 levels and generate 80% of their power with renewables by 2030. They will do this because it makes economic sense. A cleaner environment is a nice bonus.

WE CAN HAVE BOTH NOW

The fact is, we can reduce our carbon emissions now and still maintain economic growth with increasing prosperity. A clean environment and economic prosperity are no longer at odds. Countries around the world are proving this every day.

As we “electrify everything” we will need a lot more electricity, but we can have both now: lots of renewable energy with very little pollution and a growing economy. Because this change has happened so amazingly quickly, most people, including many of our leaders, do not understand this.

Yet.

**A clean
environment
and
economic
prosperity
are no longer
at odds.**

