

Watt's Happening? #166

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New energy update



Alberta has some of the best solar and wind resources on the planet, but has barely scratched the surface of this huge new energy industry. Calgary-based Greengate is about to change that with Canada's largest solar farm.

Wind and solar energy continue to be the fastest growing energy sources in the world, and like anything, the more you ramp up production the more costs come down.

Solar has just reached “grid parity” and wind is close behind. That means solar can now pump power into the grid at a cost equal to or better than the cheapest power available (like electricity from coal) without subsidies.

And the efficiency of both wind turbines and solar panels continue to improve and worldwide production continues to increase every day, so costs continue to fall. Soon, they will be the cheapest sources of electricity ever invented. On that basis alone, once achieved, (either next year or the year after) stand back and watch something amazing happen: massive job creation, new business

opportunities and a much cleaner environment far into the future.

ALBERTA TO HOST LARGEST SOLAR IN CANADA

Although Canada lags behind most developed nations, solar continues to grow here too. Across Canada there are 138 solar-electric farms of at least one megawatt (MW), totaling 1,700 MW, the largest at 100 MW in Ontario.

Now Alberta is about to break all records. The utilities commission recently approved a new solar project, set to start construction in 2020 in Vulcan County. At some 400 MW it will be by far the largest in Canada and one of the largest in the world. Its 1.5 million solar panels will

provide enough energy to power 100,000 homes. The project does not require public dollars to help finance it.

“Alberta is blessed with tremendous fossil fuel resources, but we also have among the best renewable energy resources in the world,” says Dan Balaban, president and CEO of Greengate, the Calgary-based company behind the project.

“With the costs of renewable energy continuing to come down, we’ve now reached the point where renewable energy makes sense on a subsidy-free, market basis and can have a significant role in our power mix going forward.”

RECYCLING LITHIUM BATTERIES

With millions of electric cars and trucks flooding the market, there is understandable concern about what to do with all those lithium batteries as they wear out and need to be replaced. And do electric cars really make environmental sense anyway?

Sure they do, especially if you live in Canada, where 80% of our grid electricity comes from low-carbon sources. Going electric in most of Canada can reduce your transportation carbon footprint (probably your biggest personal carbon contribution) by at least 40%.

The carbon footprint of making a lithium battery has of course been calculated to death, and works out to about 8.6 tonnes of carbon dioxide per tonne of battery. That’s about one year of regular car driving.

After 8 or 10 years of use, the battery will

be down to 70 to 80% of its capacity, and you’ll start to notice a reduction in range. By then you’ll probably want to upgrade to the latest “1000-plus km ultra-long-range super battery” anyway, simply re-investing some of the money you’ve saved on fuel and repairs into longer range.

At 70% capacity, lithium batteries are anything but useless. Already they are being repurposed for stationary applications, like providing back-up power in homes or, stacking thousands of them together, improving the efficiency and profitability of a solar or wind farm.

Finally, after decades of use, they will need to be recycled, and companies are lining up to do just that, seeing another massive business opportunity. The good news is that even now, when we are just getting started, 95% of the materials of a lithium battery can be recycled and re-used in new lithium batteries.

NEW ZEALAND GOES NET-ZERO

New Zealand is the latest country to set firm net-zero emissions targets by enshrining them into law. The country must reach net-

zero (meaning zero carbon emissions by switching to clean energy like solar and wind, electric transportation and aggressive widespread energy efficiency efforts) by 2050 and is now legally bound to meet its Paris Agreement commitments.

As Prime Minister Jacinda Arder said, “I hope it means the next generation will see that we ... were on the right side of history.”

Amen.

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