'Helping build a renewable Energy Community'

December 2018 Big Picture, Renewable Energy News

This Big Picture News comes to you from Big Sky Country in Montana, U.S.A. We are here babysitting the grandchildren and preparing for our first sub zero and white Christmas. There are not many solar panels in Montana and those there are are covered in snow. Victoria is certainly quite GREEN in comparison.

Anyway have a very happy Aussie Christmas. At DRREA we look forward to a busy and active and successful 2019.AND we wish you all the same. Read inside about my Electric Harley experience in Bozeman Montana.

Existential threat

London Mayor Sadiq Khan has declared global warming a climate emergency because it represents an existential threat to humanity. Pity it has taken so long for this penny to drop.

Electric Harley Davidson

While in Montana we attended a community theatre restaurant.. I asked the guy sitting next to me what he did. He answered he was a salesman at the local Harley Davidson dealership. Later, tongue in cheek I asked him would we see an electric Harley rolling down the highway any time soon. His answer was yes, next northern summer 2019. I then asked about range and noise. His answer was about 100 miles range and some mechanical noise but not as loud as the ICE variant. I ran out of time, so didn't get to ask him about charging points or if and when they will be seen in Australia

Top Solar suburb?

What was Victoria's top solar suburb in the July-September 2018 quarter? Find out below in the 'Top Solar suburbs' article

What about Puffing Billy?

On November 20 Envirojustce released a report (see link below) on the health burden of fine particle pollution from electricity generation in NSW. The report was by leading health expert, Dr Ben Ewald. The report outlines the serious health damage NSW's five coal-fired power stations are causing.

It says in NSW, nearly 300 people die prematurely each year from breathing in pollution from coal-fired power stations. More than half of those people live in Sydney, far from the source of the pollution.

It makes me wonder what the situation is re fine particle pollution in Victoria where we use brown coal for power generation in the La Trobe Valley not to mention those of us who live

along or near the Puffing Billy Railway line.

(https://www.envirojustice.org.au/healthstudynsw/)

The report adds that the power companies have the technology to reduce this pollution by up to 98% but don't because the government does not force them

Top solar postcodes

Australia's Clean Energy Regulator today released updated data on Australia's top solar postcodes. Three important statistics revealed were as follows.

Quarterly small scale solar installations between July and September 2018 total= 63,514

National cumulative installations since 2001 were 3,103,366

14,259 solar systems in this quarter were installed in Victoria.

Clyde North was Victoria's top solar suburb

Victorian solar offer

Below are the key features of Victorian Labor Governments solar offer. Also, often overlooked is the $1000 solar hot water rebate available for both conventional solar hot water systems (both flat panel and evacuated tubes) and heat pumps.

Key points and eligibility criteria:
- for any newly installed solar power systems (post 19/8/2018) at 50% of the cost, up to a limit of $2,225.
- must be earning less than $180,000 p.a. combined household income
- house must be valued at less than $3,000,000
- you do not have an existing solar electricity system (unless you were an "early adopter" and it was installed before 1 November 2009)

Also, "a re-elected Andrews Labor Government will also provide half-price solar batteries for 10,000 Victorian households that already have solar panels. This will help them save on their electricity bills by storing solar energy for use in the evenings".

Renters

In early November the Andrews government also said it would extend the Solar Homes program to include renters if re-elected. Landlords will have to strike a deal with their tenants to share the cost of solar installation. Renters then make a 25 per cent contribution through a rent levy spread over four years. The landlord and government rebate covers the rest of the cost.

The levelised cost of electricity {LCOE}

Articles on the LCOE are interesting because it tells you about the economics of one form of new energy versus others in $ per megawatt hour. The most recent LCOE figures below from Bloomberg New Energy Finances tell a lot.

Firstly solar PV with computerised tracking is $37-$66,$/MWh. Onshore wind is $40-$74,$/MWh and Solar PV with no tracking is $40-$75,$MWh.

Re forms of dispatchable generation on shore wind with battery storage is$45-$113,$MWh and solar PV with battery storage but no tracking $60-$207,$MWh. Their fossil fuel competitors of coal was $112-$147 and combined cycle gas $68-$83,MWh

Re forms of peaking generation for peaks on very hot afternoons and very cold mornings there was an interesting comparison between Pumped Hydro of $131-$564 and utility scale batteries at $177-$205,$MWh. Presumably pumped hydro takes much longer to build than USB.

Conclusions: Battery storage built on site alongside wind farms and solar farms appear to be an affordable gamechanger in the ability of renewables to provide dispatchable generation.

Since then

Since the Bloomberg report another report was released on December 20 by CSIRO and AEMO called 'Gen Cost 2018'. It said,"the levelised cost of energy of solar and wind is well below that of any other generation source". They went on to say that was even with storage added. Source was Renew Economy Dec 20.

Red Flow batteries coming to Knox

The excerpts from the Renew Economy article below on Nov 26 show that battery chemistries other than Lithium variants are starting to get some market share in Australia.

ASX-listed energy storage company Redflow has announced two new supply deals requiring nearly 40 of the company's zinc-bromine flow batteries. The deal with Optus will see the Brisbane-based company supply six of its 10 kilowatt-hour ZBM2 battery units, for energy storage at a remote communications tower in the World Heritage-listed Daintree Rainforest.

And in a second deal in as many days, Redflow announced on Friday that it was supplying a total of 32 of its ZBM2 batteries to two new childcare centres being built in Melbourne's east.The contract will see Redflow partner Torus Group install the batteries – 160kWh of storage each, or 16 battery units – alongside 100kW each of solar panels at their Knox Children and Family Centres. *One is being built in Wantirna and another in Bayswater.*

Big battery is unique

From Renew Economy (Nov 9)

Victoria's first big battery – the Ballarat Energy Storage System – has begun its commissioning phase, charging and discharging into the grid, just a week after its formal unveiling.

The 30MW/30MWh Ballarat big battery is one of two — along with the 25MW/50MWh Gannawarra battery next to the solar farm of the same name – that are being mostly funded by the Victoria government and the Australian Renewable Energy Agency.

Ballarat features battery systems from US-based Fluence, and is unique in that it is connected to a key junction in the network, and not located next to a wind and solar farm like the Tesla big battery in South Australia and other batteries under development at Bungala, Wattle Point, Snowtown, Lincoln Gap and Kennedy.

Important geothermal development

On Nov 21 Renew Economy reported that Alinta Energy plans to pioneer the commercial rollout of geothermal heating and cooling in Australia. Below is a summary of that report.

The technology itself is far from new. In Europe, the market share of geothermal in residential heating and cooling is greater than 40 per cent. But it offers a number of efficiencies – in the installation and in the long-term operation of the geothermal – that more than make up for the higher cost on installation.

This particular version of the technology, uses refrigerant gas rather than water, which means that its heat-exchange capability is significantly higher, which in turn means less pipes in the ground. Further, GeoAir pipes go into the ground vertically, to depths of around 70 metres for the average residential application, rather than using horizontal trenches.This offers a significant benefit … in that you don't need as much land

Once in operation, the systems work much like your standard reverse-cycle air-conditioners, but with fewer moving parts and much greater efficiency. From an efficiency perspective, compared to a standard split system air-conditioner, geothermal is about twice as efficient – both in terms of the amount of energy required to run it and the cost of that energy. Forty per cent of a household's energy consumption is for heating and cooling.

Alpha ESS Joins SA Home Battery Scheme

From John Grimes of the Smart Energy Council (Nov 17)

Alpha ESS has joined fellow Smart Energy Council Member Sonnen as an exclusive approved battery storage provider for the South Australian Home Battery Scheme.

Alpha ESS has installed more than 10,000 battery systems in 30 countries, and established an Australian office in 2015.

Alpha ESS will be establishing a battery manufacturing centre in South Australia, building more than 8000 batteries a year and creating up to 120 jobs.

The South Australian scheme provides subsidies of up to $6,000 for families to install battery storage systems. Alpha ESS and Sonnen are the exclusive battery providers until the end of 2018, with both companies agreeing to establish manufacturing centres in that State.

This shows that with the right policies renewable energy jobs will follow. I understand Alpa ESS produce Lithium Ion batteries.

Also, other opportunities remain for the manufacturers of other battery technologies elsewhere in Australia as we become more aware of alternatives and the pros and cons of each.

Hyundai Ioniq EV

Pre-sales of this first sub $50,000 EV are very strong. With a 28 kWh battery and 230 range this small SUV is available as all electric version or as a plug-in hybrid or as a straight hybrid.

On that note here's hoping 2019 is a very big year for you all and for EV's and renewable energy/ P Cook