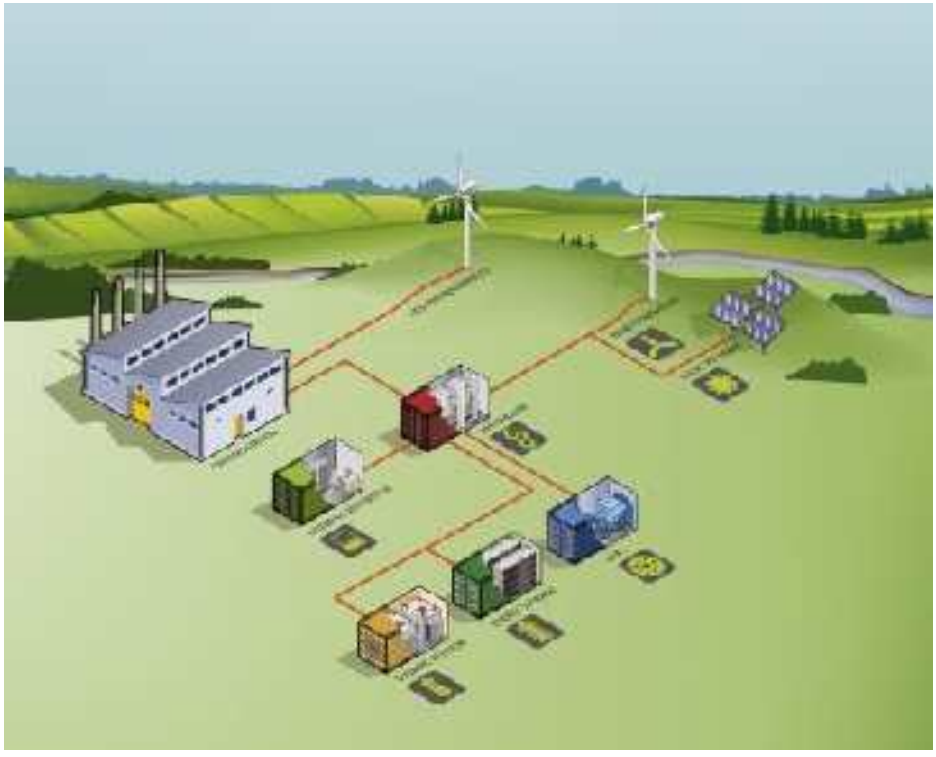
DRREA News November 2017

Zero Carbon Cement

Did you know that "manufacturing cement is responsible for 8% of all global carbon emissions and will grow to 26% by 2050" if no action is taken.

This information is from Beyond Zero Emissions who recently released their 'Rethinking cement' report and its plan for a zero carbon cement sector. (See link below)

(http://bze.org.au/rethinking-cement-plan/)



Flinders Island

Flinders Island nearly 100% renewable

On November 8 Renew Economy reported that "The off-grid Tasmanian community of Flinders Island will see out 2017 with a mostly renewable energy powered grid". See above and below.

"The off-grid Tasmanian community of Flinders Island will see out 2017 with a mostly renewable energy powered grid, as it completes the switch from its 100 per cent diesel fuelled power system to a cleaner, cheaper mix including solar, wind and energy storage".

"State-owned utility Hydro Tasmania will formally "switch on" its Flinders Island Hybrid Energy Hub in December, around two-and-a-half years after the project was first announced, with the aim of meeting at least 60 per cent the island's

6.7 gigawatt-hours (GWh) of annual demand with renewables, and minimising the output of its 3MW diesel power station".

"But the hub – which combines 900kW of wind (one turbine), 200kW solar, and a mix of "enabling technologies" including 300kWh of battery storage, a 850kVA flywheel, and a 1.5MW dynamic resistor – is already taking the Bass Strait island to levels of 80 per cent renewables, on occasion, and the team behind it are confident it will supply 100 per cent of demand before the year is out".

Emerald off grid neighbours

A neighbour of ours who built their house earlier this year are 100% off grid. Hear their story in one of our 2018 forums.

Renew Economy on November 1 told a similar story. The couple in question built in rural Queensland about 5 hours from Brisbane and 2.7 kilometres from the grid. This meant their solar and battery system cost about the same as the cost of connecting to the grid.

The storage system, comprises six 10kWh zinc-bromine flow batteries and a nearly 19kW (72 panel) solar PV array, that is installed on the roof of a nearby shed.

It is good to see some people are considering alternatives to lithium type batteries.

More 'Solar Savings'

"Warilla Bowls and Recreation Club in Illawarra on the NSW coast is boosting its rooftop solar capacity to an impressive total of 414kW, adding a 314kW array to the Club's existing 100kW system, in a move it expects to cut grid power consumption by 25 per cent".

“The new array – most of which will be installed on the roof of the Club’s indoor bowling greens, pictured above – is expected to deliver savings of around $75,000 a year for the venue, both from reduced electricity bills and from the trading of Large-scale Generation Certificates”.

“The Club, which is an active member of the Illawarra Sustainable Clubs Alliance, says it was motivated to add the new capacity due to the recent electricity price hikes in the state”. Source Renew Economy

Solar array on water tank

In what is said to be 'a first' Wannon Water in Western Victoria has just installed a 100 kilowatt solar array on a large water tank it owns in Hamilton.

“It expects the 344 “high-efficiency” panels on the roof of the clear water storage tank will reduce the plant’s demand on the electricity grid by 25 per cent and cut greenhouse gas emissions by 150,000 kilograms each year.

It also “expects the $120,000 system to pay for itself in seven years through reduced energy use, and will mean that on some days the entire water treatment plant can be powered by renewable energy”. Source Renew Economy.

Largest Renewable Energy auction to be in Victoria

“The state Labor government in Victoria has pressed “go” on what will be the largest renewable energy tender held in Australia – 650MW of mostly wind and solar”.

“The formal tender documents were released by the Victoria government on Tuesday afternoon, inviting project developers to enter what appears to be a complex, hybrid bidding process that closes on February 14, and will require the wind and solar farms to be built by 2020”. Source Renew Economy

Heliostats for solar thermal could be made in Aus

At the recent Stringybark Festival we had our model of a Solar thermal power plant. Several people asked (in the real thing) what the mirrors are made from and how are they kept clean?

The answer I since found out is glass. However researchers at the University of Adelaide and an automotive company in South Australia are working on adapting South Australian thin film coating technology to produce lightweight and durable polycarbonate mirrors.

The technology has already been used to export 4 million shatter proof auto mirrors around the world since 2012. Plastic heliostats will have several advantages over glass.

Ultra-high reflectivity mirror coatings on polycarbonate will make cheaper and more efficient heliostats that stay cleaner for longer. Issues with glass heliostats include their weight, which often require extensive footings, transport costs and lack of Australian-made supplies.

It will be good if an ex auto part manufacturer can get a footing in the heliostat industry.

Pumped hydro with a difference

On 11 October in Renew Economy Giles Parkinson reported on a pumped hydro project with a difference.

It is the latest proposed pumped hydro project in addition to the Genex project in north Queensland, "the Cultana sea-water storage proposal in South Australia, and another proposal by the new owner of the Whyalla steel works to use a decommissioned iron ore mine". It will be interesting to see which ones actually happen

"A $1 billion, 600MW pumped hydro project is being proposed on private land in northern New South Wales, in yet another example of the extraordinary interest in storage technologies as the share of low-cost renewables increases across Australia".

"A company called Oven Mountain Pumped Storage is proposing the facility – which will have round six hours of storage – on the mountain of the same name between Armidale and Kempsey – in the electorate of deputy prime minister Barnaby Joyce".

"The idea is to take advantage of two naturally occurring granite basins, separated by more than 600m in height and some 2.5 km in distance, and run a closed-loop, off-river pumped hydro plant that could help balance the output of renewables and meet peak demand requirements".

"Oven Mountain was first assessed by engineers and consultants more than two decades ago, but the option of the project has since been taken up by a group of experienced renewable energy developers comprising Anthony Melov, Jeremy Moon and Brian Hall".

World hits 403 ppm CO2

This story comes from 'The Conversation' on November 1.

Global average carbon dioxide concentrations rose by 0.8% during 2016, the largest annual increase ever observed.

According to figures released overnight by the World Meteorological Organisation, atmospheric CO□concentrations reached 403.3 parts per million. This is the highest level for at least 3 million years, having climbed by 3.3 ppm relative to the 2015 average.

The unprecedented rise is due to carbon dioxide emissions from fossil fuels (coal, oil and gas) and the strong 2015-16 El Niño event, which reduced the capacity of forests, grasslands and oceans to absorb carbon dioxide from the atmosphere.

For roughly 800,000 years before industrialisation began (in around the year 1750), carbon dioxide levels remained below 280 parts per million, as measured by air trapped in Antarctic ice. Geological records suggest that the last time atmospheric levels of carbon dioxide were similar to current levels was 3-5 million years ago. At that time, the climate was 2-3□ warmer than today's average, and sea levels were 10 to 20 metres higher than current levels.

Measurements of Methane and Nitrous Oxide have also gone up. For this reason the article went on to say the following. "If we represent the climate change impact of all greenhouse gases in terms of the equivalent amount of CO□then this "CO□e" concentration in the atmosphere in 2016 would be 489 ppm. This is fast approaching the symbolic milestone of 500 ppm".

Solar lighting for East Timor

On the 23rd of October Kate Greenwood, International Projects Manager with the Alternative Technology Association (ATA) gave a very “enlightening “presentation about the provision of Solar powered lighting systems for East Timor . There are so many positives about this, it’s the sort of project that should inspire support. ATA (www.ata.org.au) has been installing the small solar systems in since 2003. There are about 40,000 dwellings in East Timor that are unlikely to be ever connected to the main electricity supply and many of those use expensive and dirty kerosene for lighting . The ATA project has installed some 1800 household systems since 2003 and plans some 185 more this year. A significant part of the project is the training of local people as technicians so that the systems can be properly installed and maintained and the setting up of micro financed village committees to manage the systems in a sustainable way.

So to the benefits:

Those receiving the lighting systems pay a monthly amount that is less than they would pay for their kerosene, but that funds future maintenance and training

The training for technicians and in financial management can be of value for other community projects and helps establish the culture of saving and planning in the community

While the carbon footprint in these communities is small, the solar systems reduce this by a significant percentage.

The locals refer to the systems as the good light for good reason. Lung and eye health issues are dramatically reduced by not burning kerosene indoors. They are able to read study and work after dark, improving productivity and education results. Better security at night is especially good for women, and for the community well being.

ATA uses local NGO’s to assist with the training and management of the schemes, further supporting local capability for other development projects

Because the normal power grid in East Timor is unreliable, as a spin-off of their East Timor involvement ATA has been able to develop larger backup power systems for some hospitals and medical facilities where reliable power is critical to operations and treatment.

A short video about Lampu Diak (the good light) https://www.youtube.com/watch?v=nXAL6SHsNx8&feature=youtu.be

It looks like a good way to support our near neighbours who have had such a traumatic history.

Russell Marnock