



As the crow flies

(Straight to the point)

June, 2020

Wagga's community carbon snapshot

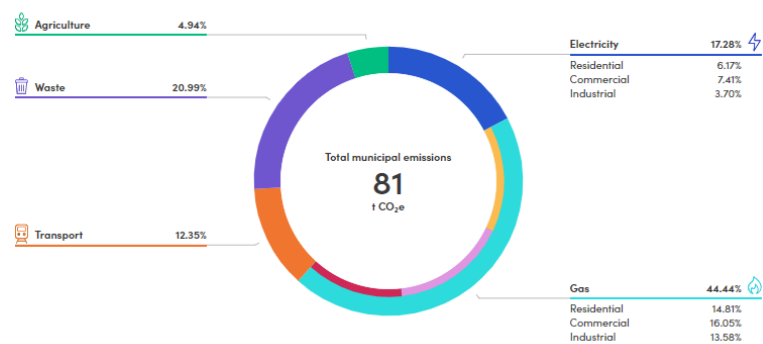
A Zero Carbon Community is *any* community where people, businesses, clubs, groups and councils are acting to reduce carbon emissions. Communities can now get a free [Snapshot](#) of their carbon emissions.

[Snapshot](#) is the first national tool providing community wide greenhouse gas profiles for every council across Australia.

All Australian council Snapshots will be online in the coming months and community groups and councils are being encouraged to contact [Snapshot](#) if they want theirs fast-tracked.

Wagga Wagga

2017 municipal emissions snapshot



You can find out more about the Snapshot program [here](#).

10 reasons why renewable energy is Australia's future

1. It can readily eliminate fossil fuels

About 15 gigawatts of solar and wind farms will probably start operating [over 2018-2021](#).

That's on top of more than 2 gigawatts of rooftop solar to be added each year.

The rate only has to double to about 12 gigawatts per year to eliminate fossil fuels by 2050, including from electricity, transport, heating and industry.

2. Solar is already king

Solar is the top global energy technology in terms of new generation capacity added [each year](#), with wind energy in second spot.

3. Solar and wind are getting cheaper

Solar and wind electricity in Australia already costs less than it would from new coal and gas plants

4. Stable renewable electricity is not hard

Balancing renewables is a [straightforward exercise](#) using existing technology.

5. There's enough land

To eliminate all fossil fuel use, Australia [would need](#) about 60 square metres of solar panel per person, and one wind turbine per 2,000 people. Panels on rooftops take up no land, and wind turbines use very little.

And you can find Reasons 6 to 10 [here](#).

MONEY

The Million Jobs Plan - Renewable Energy

One way out of the COVID recession. This plan from Beyond Zero Energy

On Friday the 29th of May, BZE released the first briefing paper of The Million Jobs Plan - [Renewable Energy](#).

BZE have been working with communities and partners around Australia to finalise a post-COVID economic recovery '[The Million Jobs Plan](#)' that will pave the way for Australia to



become an economic powerhouse and a renewable energy superpower in the decades to come. This plan will create employment, modernise our infrastructure and reduce greenhouse gas emissions.

Making it happen:

- Support the accelerated **deployment of 90 gigawatts of renewable** energy in the next five years, creating 124,000 jobs in construction and 22,000 on-going jobs.
- Ensure **renewable energy infrastructure is made in Australia**. Increase Australia's capacity to manufacture renewable energy components including wind turbines and batteries, to create more than 9,000 jobs in the next five years.
- Underwrite **renewable energy industrial zones** at guaranteed price to establish Australia as a top destination for energy-intensive clean industries such as green hydrogen and zero emissions metals.
- Fast track **new transmission infrastructure** to facilitate the rollout of renewable energy, increasing energy security and reduce power prices.

You can now download '[The Million Jobs Plan - Briefing Paper 1 - Renewable Energy](#)' on the BZE [website](#).

Demand/Response is coming next year – cheaper, less consumption

The Australian Energy Market Commission will press ahead with plans to let large customers routinely trade their energy use in the national electricity market because this is a landmark reform that must be prioritised, even with COVID-19.

Despite years of opposition from the fossil fuel industry, AEMC is acting now to help keep the power system reliable and secure ahead of the 2021/22 summer.

The AEMC has been working during the pandemic to strike the right balance between easing regulatory pressures on market participants while insulating important and fundamental work on the power system.

This reform – called 'the wholesale demand response mechanism' – encourages large customers to reduce their electricity consumption in the short-term in response to wholesale market price signals. It works by scheduling this demand into the market in the same way an electricity generator's supply would be scheduled in. This new way of operating recognises that not using electricity should routinely attract a market value and creates another tool to help balance energy supply and demand.

It is potentially a much cheaper way to address sudden spikes in demand than sources of peaking generation such as gas or pumped hydro. In effect, it is an affordable new tool for managing energy security and reliability.

Renewable energy zones kick off in NSW

The NSW government has called on business to pitch projects for its \$4.4 billion renewable energy zone to kick-start investment, amid a slowdown in new wind and solar commitments due to national energy policy uncertainty and a global recession triggered by the coronavirus.

Wind, solar and energy storage companies have two weeks to flag interest in building parts of the 3000MW renewable energy zone (REZ) in the central south-west, centred around the town of Dubbo.

The NSW government wants companies and developers to detail the scale and type of projects that could be established in the region to generate enough energy to power about 1.3 million homes each year.

"The registration of interest process is an important next step to hear from proponents about existing and proposed energy, storage and emerging technology projects that could form part of the REZ," said Matt Kean, NSW Minister for Environment and Energy.

"This information, which will include project details, location, type, size and development status, will support technical design, planning and further market engagement on the REZ."

TECHNOLOGY

ARENA flooded with green Hydrogen proposals

The Australian Renewable Energy Agency says it has received an overwhelming response from prospective hydrogen projects, with expressions of interest from dozens of projects wanting a slice of \$70 million in grant funding.

ARENA revealed on Friday that it has received 36 expressions of interest from prospective hydrogen projects, representing more than \$1 billion worth of funding requests, exceeding the funding available by almost 15-fold.

The agency says that the expressions of interest covered almost 500MW in proposed hydrogen production capacity, with project proposals ranging between 5MW to up to 80MW, with applications coming from every Australian state and territory.

ARENA formed the Renewable Hydrogen Deployment Funding Round to direct up to \$70 million in grant funding to support an expansion of Australia's renewable hydrogen production capacity, with a preference for commercial-scale electrolyzers with a capacity of 10MW or greater.

The project proposals would see hydrogen used for a wide range of purposes, which can include hydrogen for use as a transport fuel, blending with mains gas supplies, as an energy storage medium and as a feedstock in the production of goods like ammonia fertilisers.

This commercial aircraft just flew 160 Km on \$6 worth of electricity



The skies may be quieter than ever as the airline industry continues to feel the absence of global and domestic passengers due to the COVID-19 travel restrictions, but that hasn't stopped major innovation developments in the industry's zero emissions space.

[MagniX](#), headquartered in Seattle, USA with an engineering centre centred on the Gold Coast, has just enabled **the world's largest all-electric**

commercial aircraft to complete its maiden voyage in Washington state.

The historic aircraft, the Cessna 208B Grand Caravan used a 751-horsepower all-electric motor developed by magniX and engineered in Queensland. As the world's largest all-electric commercial aircraft, the eCaravan is regarded as a significant milestone in further disrupting the airline and transportation industries towards an electric, zero emissions future.

"This first flight of the eCaravan is yet another step on the road to operating these middle-mile aircraft at a fraction of the cost, with zero emissions, from and to smaller airports," said Roei Ganzarski, CEO of magniX, in a statement.

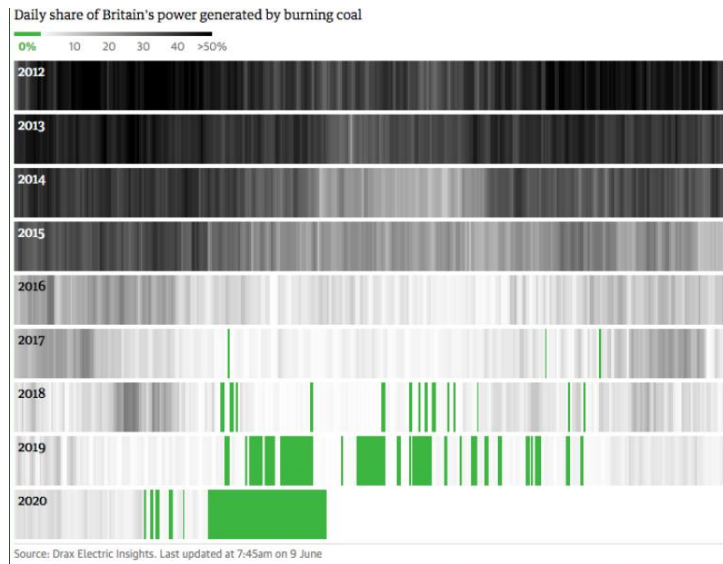
The successful 30 minute, 160km test flight used less than USD\$6 worth of electricity and [Aerotec stated](#) that the flying of the eCaravan served as another critical step in the certification and approval process of the magni500 propulsion system, enabling future conversions of additional aircraft to magniX's all-electric propulsion technology.

Britain has not used coal for two months

I just love this graphic showing the transition from almost all coal power generation in England in 2012 to green energy (wind, solar, nuclear) in 2020.

It is all the more startling when we remember that England is where the use of coal for energy began with the Industrial Revolution.

Surely if they can do it, so can we with our enormous renewable resources.



Wagga features in a very smart battery idea

US battery storage technology company Fluence is proposing two big batteries – each of 250MW and 30 minute storage – could be installed as a faster and potentially cheaper solution to solve the transmission limits between the two biggest electricity markets in Australia, NSW and Victoria.

Fluence is proposing two 250MW/125MWh battery-based energy storage systems (one in Wagga Wagga and the other in Morang) that it says will help AEMO and TransGrid address transmission network congestion issues.

It argues that the two batteries – which could operate in unison, with one charging at one end while the other discharges at the other end, and so increase the transmission flows – could be up in running within 18 months, far quicker than any traditional “network option” which would likely only be completed in 2027/28. And it can be scaled.

“Operating BESS units at Wagga Wagga and South Morang in tandem to create a virtual transmission line can help both import and export capability between New South Wales and Victoria,” it says.

“This additional support on either end of the transmission interconnector will enable more efficient use of the existing lines, alleviating current and future limitations.”

Renewable, carbon neutral methane – get your head around that

ARENA has announced [\\$1.1 million in funding](#) for the gas operator [APA Group](#) to build a Renewable carbon neutral methane demonstration plant in south-central Queensland. The renewable carbon neutral methane project will trial an innovative way of producing renewable [hydrogen](#) using an Anion Exchange Membrane (AEM) electrolyser powered by [solar PV](#). The system draws water from the atmosphere to produce hydrogen, which in turn is converted to methane through a reaction with carbon dioxide, also extracted from the air. The plant will produce 620kg of renewable hydrogen per year for conversion into 74 gigajoules of carbon neutral methane. While CO₂ is emitted at the point of use, emissions are balanced by carbon extracted from the atmosphere during production.

The APA Group will build the demonstration facility at their Wallumbilla Gas hub, situated about 475 kilometres west of Brisbane. Methane produced will be injected directly into the 7500 kilometres of gas pipelines that link Victoria, Queensland, New South Wales and South Australia.