



# As the crow flies

(Straight to the point)

September, 2019

## NEWS

### Meeting with Joe McGirr

A group from CROW met with Joe McGirr on Thursday, 4 September to discuss issues including:

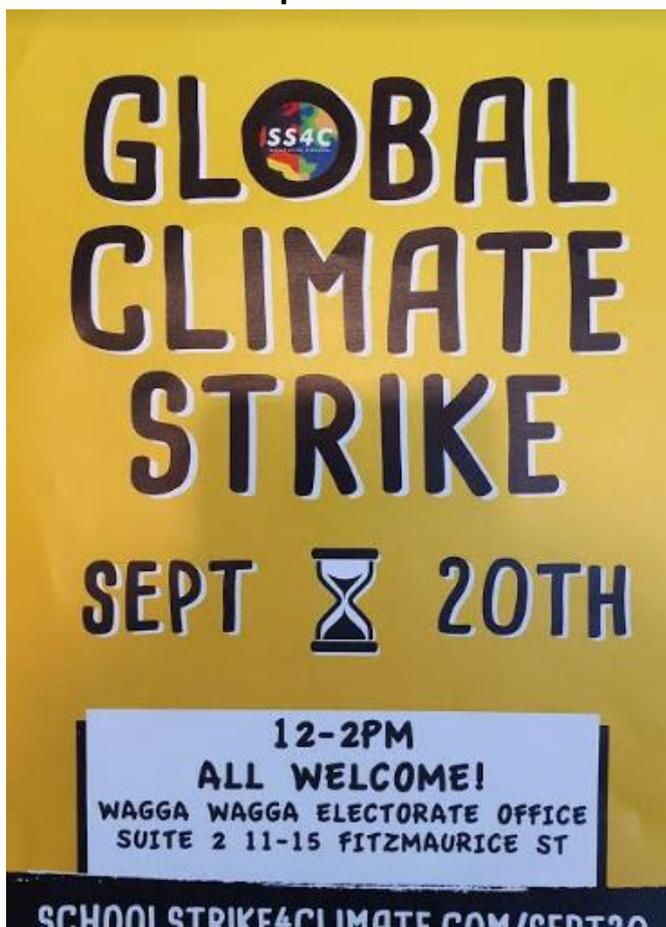
- The NSW Government's Inquiry into Transitioning Communities from Coal (for which we are also preparing a submission).
- Environmental Upgrade Agreements (see more below).
- The NSW Electric and Hybrid Vehicle Plan
- Some issues from the recent AEMO paper on the future of electricity supply
- Some questions about land clearing.

It was a productive, hour long discussion which emphasised the importance of transitioning from coal towards renewables in ways which recognise the importance of jobs, the impact on farming and rural communities, infrastructure development and the move from centrally generated power to a more distributed, regional basis.

We were encouraged by Mr McGirr's enthusiasm for a rational development of renewable power.

CROW is currently developing a submission for the NSW Government's Inquiry into transitioning communities from coal. The meeting was very helpful in identifying issues and emphasises we need to include in that submission.

### Strike for climate – 20 September.



Make sure that you can join the whole world and attend the Wagga Wagga Strike for Climate rally on September 20, 12 Noon till 2 pm on the lawns outside Michael McCormack's office. It promises to be a huge call for action from our community for governments to act on the climate emergency. We need our voices to be loud and clear.

(Big thanks to the great folk of Wagga Wagga Fridays for Future for organising the event.)

## SCIENCE

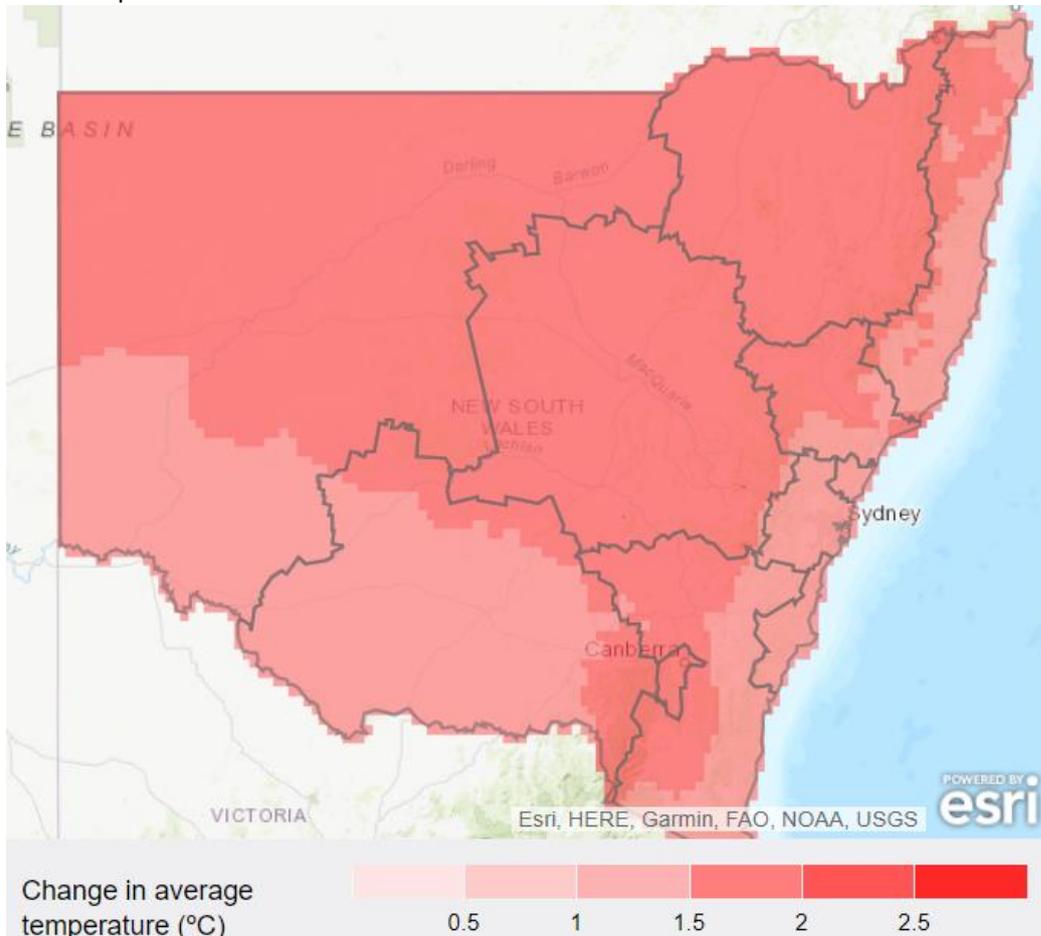
### Adapt NSW Interactive climate map.

If you would like to play around with an interactive climate map courtesy of the NSW Government click on this:

<https://climatechange.environment.nsw.gov.au/Climate-projections-for-NSW/Interactive-map>

Good information for showing people what we have in store in climate change.

For example:



### Darling, this is a disaster

Irrigators pushed the lower Darling river into hydrological drought three years early by extracting 86 per cent of the water from the Barwon-Darling river system, [a new report](#) by the [Australian Rivers Institute](#) has found. Of 158 licence holders in the region, 10 irrigators control 86 per cent of the water, and four control 75 per cent - one of which, the Harris family, is facing prosecution for extracting during low flows. The report identifies sharing rules and the warming and drying of the basin as a “significant risk” in making sure there is enough water to support the river ecosystem.

### From the CSIRO’s latest ANO report.

As a result of global climate change, further warming is expected to occur in Australia over the course of the 21st century, causing a broad range of impacts, the severity of which will depend on the effectiveness of global emission reductions and local adaptation.<sup>25,26</sup>

These impacts include more extremely high temperatures, fewer extremely low temperatures, less rainfall and more droughts in the south of the country. Climate changes in Australia are also projected to result in less snow, more intense rain events, more extreme fire weather, fewer but stronger cyclones, continued sea level rise and ocean acidification. Together these changes will have a significant effect on agriculture, forestry, fisheries, water security, energy security, infrastructure, transport, health, tourism, finance and disaster risk management. These changes will also increase the stress on Australia’s ecosystems, which are already threatened.<sup>29</sup> Australia is considered to be one of the world’s mega-diverse countries.

However, over the past 200 years, Australia has lost more species than any other continent, and continues to have the highest rate of species decline among OECD countries.<sup>5</sup> Making matters worse, the legacy of intensive agriculture on a fragile environment continues to be felt in Australia's soils. Although farmers have made important advances in land management, acidification is at worrying levels in many lighter soils, soil carbon levels remain historically low and the risk of erosion increases with an increasing frequency of droughts and lower groundcover. These processes threaten productivity and reduce crop choice. It is possible to strive towards zero emissions, dramatically reducing our impact and contribution to global warming, through a range of actions that target key sectors such as energy, land-use, urban infrastructure and industrial systems. Science, technology and an innovative spirit are already driving breakthroughs. For example, the CSIRO has pioneered the transformation of hydrogen as a renewable fuel source, and has shown that a new feed, FutureFeed, will lower emissions from cattle.

## TECHNOLOGY

### SA cracks CO<sub>2</sub> refrigeration

Two new South Australian technologies have combined to create what researchers claim to be the world's most efficient air-cooled carbon dioxide refrigeration system.

The new system is being hailed as being of particular importance for use in hot climates where CO<sub>2</sub> refrigeration systems have traditionally performed poorly.

Adelaide-based company [Glaciem Cooling Technologies](#) is now on a commercialisation pathway with the system and plans to target the Middle East market.

Natural refrigerants such as CO<sub>2</sub> (R744) have become more common in recent years as traditional synthetic refrigerants are phased out due to their harmful environmental impact.

Previous CO<sub>2</sub> systems in hot climates use cascade systems, which is basically another refrigeration system operating in series with the CO<sub>2</sub> system. These systems are efficient but the secondary refrigeration unit still contains a synthetic refrigerant.

Glaciem Cooling Technologies in conjunction with researchers from the [University of South Australia](#) have developed a unit that uses dew point technology to pre-cool air before it enters the refrigeration system's condenser.

The system also has a thermal energy storage component that can store excess electricity from sources such as solar PV. The -6C Phase Change Material (PCM) storage system can then release the thermal energy as cold air to run the refrigeration system when electricity prices are high.

### ARENA backs green hydrogen gas development

Gas supplier BOC is taking the leap into renewables, announcing a plan to produce green hydrogen and build a hydrogen vehicle refuelling station.

The \$3.1 million pilot project will install a 220 KW electrolyser and 100 KW solar array at their Bulwer Island facility, situated north east of the Brisbane CBD near the mouth of the Brisbane River.

ARENA has provided \$950,000 in funding to the project, which will utilise some of the gas infrastructure already on site and provide a local refuelling station for hydrogen vehicles.

With capacity to produce 2400kg of renewable [hydrogen](#) per month, the system will supply BOC's existing customer base and also provide up to 50kg of renewable hydrogen per day for the new Brisbane refuelling station.

BOC South Pacific's Managing Director John Evans said the project will take advantage of BOC's existing infrastructure and expertise to support the growth of hydrogen as a zero emission fuel. The project advances on the company's existing hydrogen production from fossil fuels at their Altona site in Melbourne's western suburbs. As well as avoiding the need to transport hydrogen over long-distances, the new electrolyser will help to advance technology that will be vital to creating an Australian hydrogen export industry.

### Electric Vehicle charging network on the way.

Range anxiety is set to be left in the rear view mirror with construction to begin this week on Australia's largest open access electric vehicle charging network.

The [\\$50 million ultra fast charging project](#) represents a significant moment in Australia's [electric vehicle](#) journey, which despite its slow start is steadily building momentum. The network will install charging points along the nation's most trafficked routes, as well as some of the most popular weekend destinations. Chargers will be situated at roadside service centres connecting Melbourne, Canberra, Sydney and Brisbane. Additional sites will be located in Adelaide, Far North Queensland, Perth and between Hobart and Launceston in Tasmania. Evie Networks' CEO Chris Mills said constructing the first phase of the network is just the beginning.

"We have estimated that Australia needs around 350 sites to cover all the highways that make up Australia's National Land Transportation Network," Chris Mills said.

"While many consumers will charge at home, they will also need plenty of fast chargers in towns, suburbs and cities. There are currently around 6,500 petrol stations. This is just the beginning of the infrastructure build out," he said.

On behalf of the Australian Government, [ARENA is providing \\$15 million](#) in funding towards the roll out of the first 42 charging sites which will be wholly powered by renewables.

## POLITICS AND POLICIES

### 2020 RE target reached – sort of, and despite the government's best efforts

The Clean Energy Regulator has declared Australia's 2020 renewable energy target to be officially met, after the Cattle Hill wind project in Tasmania took the total amount of committed wind, solar and other renewable projects to more than 6,400MW.

That's the capacity that the CER estimates is required to meet the 2020 target of 33,000GWh of "new" renewables, a number that was originally 45,000GWh before a carving out of rooftop solar took it to 41,000GWh, and then a dramatic reduction under the Abbott government saw the large scale number cut to 33,000GWh.

The CER should probably wait until all that wind and energy capacity is actually on line, and producing the mandated 33,000GWh before declaring the target is met, given the delays in connections and commissioning which is affecting so many projects.

When that 33,000GWh of production is reached, then large scale renewables (including pre-existing hydro) will likely account for 23-24 per cent of Australia's total demand, and rooftop solar will take that total to around 29 per cent.

The question for many in the industry is what happens next. The CER's assessment that there is another 6,400MW – the same capacity again – in the pipeline and likely to be constructed over coming years.

Some of that capacity is positioned to take advantage of Victoria's and Queensland's commitment to 50 per cent renewables by 2030, targets that cause the Coalition and conservatives to recall in horror and forewarn of disasters ahead.

Some of that new capacity is waiting for opportunities as old coal generators quit the grid in NSW, and others are queuing up in South Australia because it makes such good economic sense, so much so that the state's Liberal government has an unofficial target of ["net 100 per cent renewables" by 2030](#), but is likely to get there well before then.

### Is Gladys dragging the chain?

The NSW government prepared sweeping climate change policies to decarbonise the state's economy only to have the plans shelved when Gladys Berejiklian became Premier, documents obtained by the *Herald* show.

The program included a proposal to "embed climate change consideration into government decision making", and was developed with the advice of the government-appointed expert panel, the Climate Change Council.

Policy switch: As environment minister Mark Speakman prepared comprehensive climate policies that did not survive the elevation of Gladys Berejiklian to the role of Premier in 2017, documents show.

Mark Speakman, then environment minister, led the work on two sets of policies that were to give substance to the government's aim to make NSW carbon neutral by 2050. The [net-zero carbon goal was announced](#) in November 2016 when Mike Baird was premier.

Mr Speakman welcomed the role of the council - a panel of 12 experts chaired by leading climate lawyer, Martijn Wilder - in a letter he sent in April 2016.

"I agree with the council that there is a need to develop an overarching climate change policy for NSW," he said.

The framework being developed would cover "emissions reduction" and "outline whole-of-government policy direction and principles," he said. A second proposal involved a five-year "strategic plan for the NSW Climate Change Fund".

The plans included "the development of a value for emissions savings", documents prepared for cabinet approval show. This apparently implied the potential for a type of carbon price to help steer investment decisions.

The twin plans, targeted for approval by cabinet by mid-2017, were instead dropped after Ms Berejiklian replaced Mr Baird in January 2017.

### [Angus Taylor is spinning the same shonky story about our emissions.](#)

The latest [report card](#) on Australia's greenhouse gas production is the same old news: emissions are up again. We've heard it before, but the news should never stop being confronting.

But Angus Taylor, the Minister for Emissions Reduction, keeps arguing falsely, that our gas exports are somehow reducing CO<sub>2</sub> emissions by replacing the burning of coal in other countries.

The logic is that by exporting gas, which is allegedly cleaner than coal, we are replacing a high emitting source with a relatively low emitting source. That logic does not hold and is not scientifically robust.

First, Australia exports massive amounts of coal as well as gas. We are responsible for one-fifth of the world's thermal coal exports and more than one-half of the world's metallurgical coal exports. It is talking out both sides of your mouth to suggest that we are reducing worldwide emissions because we are responsible for almost a quarter of the world's exported gas, while we simultaneously export a massive amount of coal.

Second, the department and Mr Taylor relied heavily on a study that expressly avoided testing the assumption that our gas is in fact replacing coal overseas.

We do know it is not true in one of the largest purchasers of Australian gas, Japan. Since the Fukushima accident in 2011 took much of Japan's zero-emissions nuclear energy out of the mix, it has been replaced by Australian gas, which is far worse for the climate.

Third, even if our gas is substituting coal, the benefits are very small. The same study indicated that "climate benefits of natural gas replacing coal are lost where fugitive emissions [leaking gas] ... are greater than 3%".

## **MONEY**

### [Why CROW is interested in Environmental Upgrade Agreements](#)

Environmental Upgrade Agreements (EUAs) are a Victorian and NSW council-based financing mechanism enabling building owners, tenants and investors to better access long term finance for environmental upgrades, including LED lighting and solar energy, to existing commercial and non-residential buildings on attractive terms.

#### THE BASICS

- The building owner agrees to carry out environmental upgrade works.
- The building owner, council and finance provider voluntarily enter into an EUA.
- The finance provider agrees to advance funds for the environmental upgrade works.

- The council collects repayments for the environmental upgrade works through the rates system and then passes the repayments on to the finance provider.
- The building owner can ask tenants to contribute towards the cost of the upgrade through the savings achieved with the energy efficiency upgrade.

#### THE DETAILS

##### **BUILDING OWNERS & LANDLORDS**

Under an EUA, a lender provides finance to a building owner using the land or building as security and the local council collects repayments through the rates system.

**Security** The use of the council rates system means that an EUA loan is prioritised over other debts attached to the land or building. The loan is therefore highly secure, making it possible to access capital at competitive rates over a longer period of time.

##### **TENANTS**

The tenant stands to benefit from day one of their environmental upgrade.

**Energy Efficiency** Tenants can enjoy the benefits of a more comfortable, ambient and environmentally friendly tenancy with reduced operating costs and energy bills.

##### **LOCAL COUNCILS**

EUAs can be used by councils to encourage business owners to increase the performance of their building and to save water, energy and greenhouse gas emissions. The council's role is to levy the EUA loan repayments through the council charge system (rates) and remit that payment to the finance provider.

## Don't tell Josh, but renewables are saving the economy

Don't tell the coal-huggers, but Australia's investment in renewable energy is keeping our economic growth ticking over.

Industry research company Macromonitor has found the \$9 billion increase in renewable energy construction over the three years to 2019-2020 has been greater than the growth in road, rail or other infrastructure.

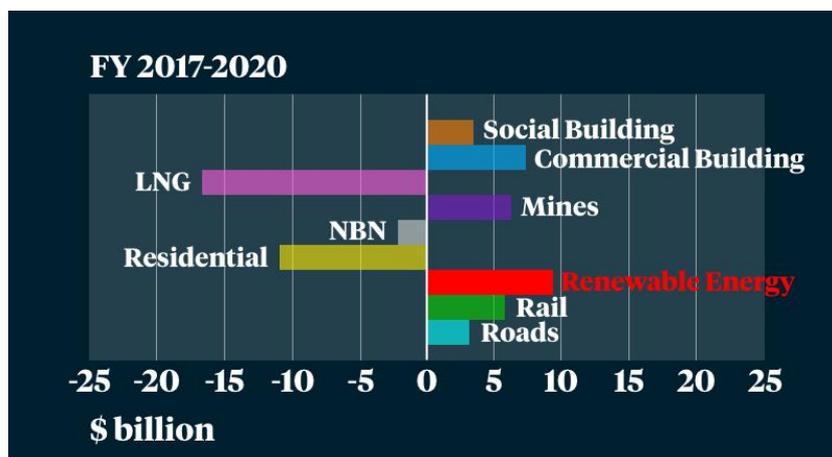
There are more total dollars in transport construction, but what provides GDP growth is the increase in investment.

When the count for the past financial year comes in in September, it will show the weakest GDP growth since 1992.

It turns out renewable energy construction has played, and is playing, a major role in stopping the economy going backwards.

As a media release from Macromonitor economist Natalie Keogh put it: "The extraordinary boom in the renewables sector is currently the largest contributor to overall growth in construction in Australia.

"Solar projects, in particular, combined with wind and storage projects, are driving solid growth in overall utilities sector construction, despite falling levels of work on the NBN and weak activity in water, gas and the non-renewable segments of electricity."



While renewable energy construction increased by more than \$9 billion over the three years, the report estimates road construction increased by \$3 billion, rail construction by \$6 billion and commercial building by \$8 billion.