



As the crow flies

(Straight to the point)

May, 2020

Where renewable energy and climate change stand in COVID Australia

The COVID lockdown has opened up two competing versions of how we need to work our way out of it.

One side, led by most politicians and the usual fossil fuel pushers have lost no time or lobbying muscle in pushing a fossil fuelled (especially gas) recovery. This includes Angus Taylor, Matt Canavan and the usual government fossil fuel boosters. From the industry there has been a flat out lobbying effort. You can see the details collected by 350.org Fossil Fuel Watch page [here](#). It is a long list but in summary “(t)he fossil fuel lobby is running a concerted campaign to exploit this global health crisis to further their agenda. The demands for support from the fossil fuel lobby range from company tax cuts, to slashing Howard-Government era environmental legislation, support for import gas terminals and exploration projects, and cuts to mine workers’ pay and conditions.”

On the other side, more forward looking economists, businesses and politicians see COVID as a breakpoint that allows us to strike out in new cheaper, cleaner directions that will set up a vibrant future Australian economy.

Recently the [Smart Energy Council](#) and [Renew Economy](#) hosted a fantastic day long webinar on a **Renewables Led Recovery**, featuring a wide range of experts that attracted more than 3500 people from across Australia and across the world. You can watch the contributions of some of the individual participants [here](#).

Principal among these is Ross Garnaut, whose recent book, [Superpower: Australia’s low carbon opportunity](#), neatly anticipated the way forward from here. The book is reviewed [here](#)

Each contribution is quite short but you can pick from progressive state politicians, scientists, economists and renewable energy experts for a great selection of practical and progressive ideas that can make Australia a great place as it emerges from the coronavirus pandemic.

And now for some good news

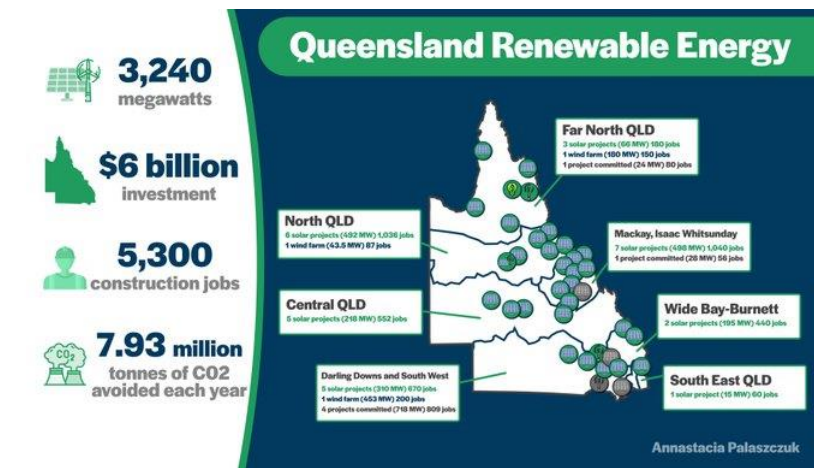
Old (dad) joke: The bad news is that there is no good news. The good news is that that is all the bad news there is.

In amongst all the worry and strain that COVID is visiting upon us I thought I should plough through the news to find some good news about our march to a low carbon future. Here goes:

Norway’s sovereign wealth fund has **dumped its stake in AGL** and placed BHP “under observation” as it seeks to sell its interests in companies that produce too much greenhouse gas emissions. [Read more](#)

A new report has found that manufacturing 'green steel' for export, produced with renewables, **could create jobs**, a multi-billion-dollar industry & cut emissions. [Read more](#)

Queensland is in the middle of a renewable energy boom. It’s created 5,300 construction jobs and, this year, we’re on track to exceed 20% of energy generation from renewables



For the second month in a row, and only the third month ever, electricity generation from **renewables in the U.S. topped coal**-powered generation. [See more](#)

Asian financial institutions and corporations have been stepping up and out of coal financing. In the last month alone, Japan's two largest institutional banks, Sumitomo Mitsui Financial Group and Mizuho Financial Group, the Japan Bank for International Cooperation, and Ayala Corporation of the Philippines announced the end of financing for new coal-fired power projects. [See more](#)

(And, for me, the best news of all) In an Australian legal first, **an environment group or young people has challenged Clive Palmer's proposed mega-coal mine** next to Adani on the grounds that it infringes on their human rights because of its contribution to climate change. [See more](#)

And in brief (courtesy of Assad Razzouk)

[Last](#) two weeks

- 1 UK hits coal-free record for power
- 2 Solar, wind now cheapest for 2/3 of world
- 3 Air France to cut emissions to get bailout
- 4 Portugal, China launch new green hydrogen plants
- 5 HSBC exits coal
- 6 China announces 3-year plan to accelerate EV adoption
- 7 Sweden exits coal
- 8 Milan, other big cities go big on bicycles
- 9 Germany breaks solar records
- 10 Philippines' oldest conglomerate ditches coal

To see the details of any of these, just copy and paste the words into your search engine.

POLITICS AND POLICIES

[Angus Taylor's UNGI slush fund up for audit](#)

The Morrison government's stalled Underwriting New Generation Investments (UNGI) program is set to come under scrutiny by the federal government expenditure watchdog.

The UNGI program has been operating effectively behind closed doors since its announcement in November 2018, with vague offers of funding being made by the Morrison government to new generation projects. But no official agreements for loans, grants or guarantees have been provided by the government, yet.

The UNGI program has attracted criticism due to perceptions that it will serve as vehicle for the Morrison government to [channel taxpayer funds into new investments in coal and gas generators](#).

Renewables, not gas, are the way forward

New research from the Centre for Future Work shows that, far from being paralysed by economic or technological restrictions, Australia enjoys an unprecedented commercial opportunity to green its energy sector and improve the competitiveness of its manufacturing sector – simultaneously.

The only barrier is lack of political foresight and courage.

Australia enjoys a superabundance of renewable energy resources – solar, wind, landmass – especially relative to our major trading partners to our north. As renewables demonstrate a growing cost advantage relative to fossils (including gas), energy intensive processes like steel and aluminium production become increasingly cost-competitive to undertake domestically. This in turn presents an unprecedented opportunity to move our production mix up the value chain. Instead of exporting huge amounts of unprocessed raw resources, we'd do the upgrading and manufacturing ourselves: generating more jobs, more income, more innovation, more export value.

The NSW Net Zero Energy Plan 2020-2030

Here is a very brief summary of Stage 1 of the NSW Government plan to reduce carbon emissions.

For the full report click on the heading above.

2020-2030 (Stage 1) is the foundation for NSW's action on climate change and goal to reach net zero emissions by 2050, grow the economy, create jobs and reduce emissions over the next decade.

The plan aims to deliver a 35% cut in emissions by 2030 compared to 2005 levels. The plan will support a range of initiatives targeting electricity and energy efficiency, electric vehicles, hydrogen, primary industries, coal innovation, organic waste and carbon financing.

Priorities

1. Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living
2. Empower consumers and businesses to make sustainable choices with information about the carbon impact of key goods and services and give them opportunities to offset that impact.
The NSW Government will provide consumers with opportunities to easily offset the carbon emissions associated with the goods and services they use and reinvest this money in NSW-based projects such as revegetating our national parks or supporting remote communities to install solar;
3. Invest in the next wave of emissions reduction technologies that show potential for becoming scalable, replicable and cost-effective. Investment in this area will be focused on linking research with industry, including through grants, low-interest loans and a new clean technology innovation hub.
4. Ensure the NSW Government leads by example by bringing sustainable goods, services and practices into (its operations) and maximising the environmental value of the assets it oversees.

SCIENCE

The Great Barrier Reef – not a pretty picture

This from Terry Hughes, who has just finished a two week aerial survey of the reef.

This year, February had the [highest monthly sea surface temperatures](#) ever recorded on the Great Barrier Reef since the Bureau of Meteorology's records began in 1900.

We surveyed 1,036 reefs from the air during the last two weeks in March, to measure the extent and severity of coral bleaching throughout the Great Barrier Reef region.

The accuracy of the aerial scores [is verified](#) by underwater surveys on reefs that are lightly and heavily bleached.



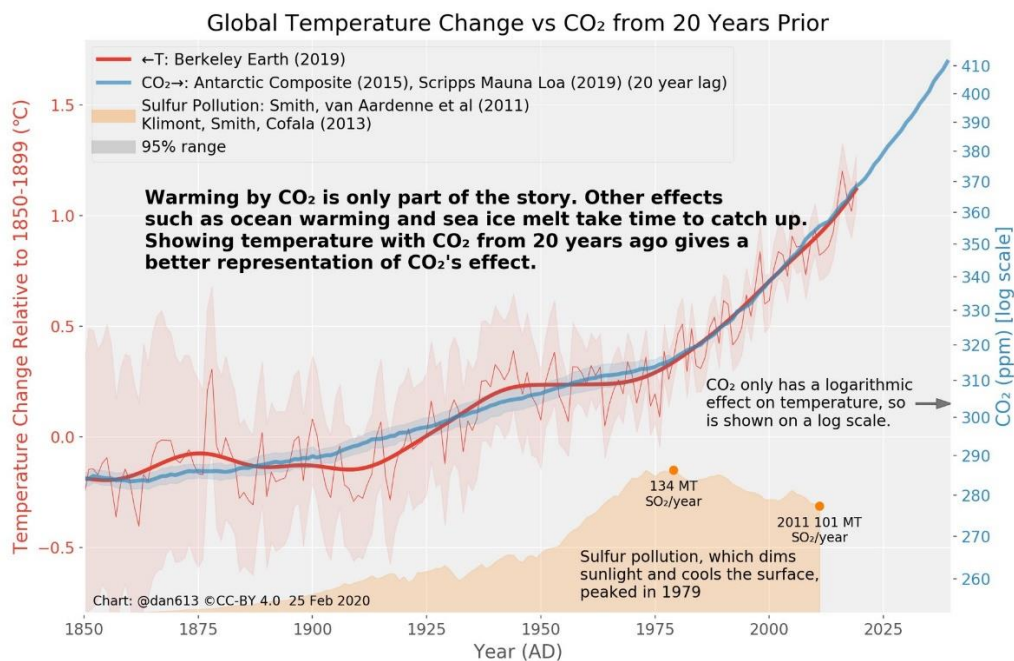
Of the reefs we surveyed from the air, 39.8% had little or no bleaching. However, 25.1% of reefs were severely affected. A further 35% had more modest levels of bleaching.

Bleaching isn't necessarily fatal for coral, and it affects [some species more than others](#). A pale or lightly bleached coral typically regains its colour within a few weeks or months and survives.

But when bleaching is severe, many corals die. In 2016, half of the shallow water corals died on the northern region of the Great Barrier Reef. Later this year, we'll go underwater to assess the losses of corals during this most recent event.

2020 is the second-worst mass bleaching event of the five experienced by the Great Barrier Reef since 1998.

For science nerds (me included) here is a lovely graph



Sam Neumann put this chart together for two purposes: First, to show how well CO₂ concentration correlates with temperature, particularly if we look at past CO₂.

Second, to show how sulfur pollution caused the cooling period between 1945 and 1975.

True, correlation is not causation. For causation, we can directly measure the amount of energy CO₂ absorbs and re-emits back to the surface. When we do this the numbers are exactly what we expect

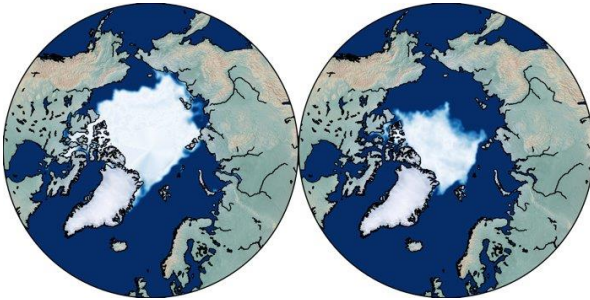
This means the surface temperature has to increase. Again when scientists do the research all the numbers check out with the measured temperature increase.

(But don't try to show the graph to a climate science denier – like Malcolm Roberts MP, they just won't be able to see it.)

Will Arctic Sea Ice be gone by Summers in 2050?

For [millions of years](#), the Arctic has observed an unbroken ritual. In winter, [Arctic sea ice](#) expands, as sub-zero polar temperatures freeze waters in their place. In summer, the ice pack retreats, as warmer temperatures thaw the winter-made gains, surrendering them back to the ocean.

For decades, the overall coverage of Arctic sea ice [has been in decline](#), expanding less and retreating more with each year. A [new analysis](#) of numerous climate models predicts the Arctic Ocean will become ice-free in the summer in only decades, and even before the mid-point of this century – a startling forecast that persists even in the best case scenarios, in which we manage to significantly cut down atmospheric CO₂ emissions.



Sea ice area at the end of the Arctic summer in 1979, at left, versus 2019. (Dirk Notz)

In the new study, Notz and his team examined dozens of different climate models simulating the evolution of Arctic sea ice in the future.

The models encompass a number different scenarios, including rapid reduction of future CO₂ emissions, as well as largely unchanged, 'business as usual' situations.

In most of the simulations, the Arctic Ocean becomes practically sea-ice free in summers before we reach the year 2050, and regardless of the hypothetical scenario employed.

TECHNOLOGY

Green steel – the ace up Australia's sleeve

Green steel can be made by using renewable energy to produce hydrogen, and then using that hydrogen [in place of metallurgical coal](#) in the steelmaking process.

The by-product is water, rather than carbon dioxide.

Winding back the 7% of global emissions that come from steel production will require creating demand for low-emissions steel. Australia has far better renewable resources than many of our major Asian trading partners, allowing us to make low-emissions hydrogen more cheaply, and therefore to make cheaper green steel. And because hydrogen is expensive to transport, it makes sense to use it to make green steel here rather than exporting it to make green steel somewhere else.

The Pilbara in Western Australia is the world's largest iron ore province, which makes it look like the natural place to make green steel. But it is difficult to attract workers to remote Western Australia. Making green steel for export would require large industrial workforces like those in central Queensland and the Hunter Valley.

Calculations suggest that the availability of reasonably-priced labour on the east coast of Australia more than outweighs the cost of shipping iron ore from Western Australia to turn it into green steel there.

... and on cue [Australia's biggest green hydrogen plant secures initial investment](#)

The Arrowsmith Hydrogen plant is the first of many green hydrogen projects across Western Australia being developed by Perth-based company [Infinite Blue Energy](#).

Western Australia is in the box seat to become the home of Australia's biggest green hydrogen plant after an initial \$300 million investment was secured for its first phase of construction. The project is being developed by Perth-based Infinite Blue Energy, which is aiming to have the plant operational by 2022.

The Arrowsmith Hydrogen Project, which will be built in the vicinity of the town of Dongara, about 320km north of Perth, is expected to produce 25 tonnes of green hydrogen a day using wind and solar energy. Infinite Blue Energy aims to commence works on the project by the middle of the year as part of its ambitious plans to build a series of installations throughout regional Australia to reduce dependence on coal-fired power stations.

Touted as the missing link in the energy transition, green hydrogen has so far seen limited uptake. In order to erase one-third of today's global emissions from fossil fuels and industry if it is deployed for steel making, providing dispatchable energy, producing ammonia, and powering trucks and shipping, meeting the related 24% of global energy demand with green hydrogen by 2050 would require massive amounts of additional renewable generation. To power the electrolyzers, some 31,320 TWh of electricity will be needed — “more than is currently produced worldwide from all sources”, Bloomberg New Energy Finance found in its [recent analysis](#).

MONEY

The Federal/NSW fracked gas deal will not reduce prices

Last month Angus Taylor and the Federal Government imposed a deal on NSW that requires the continued use of CSG (fracked gas).

The stated purpose of the deal between the NSW and Federal governments is to bring down the price of gas for consumers in NSW. Santos has committed to supplying the 70PJ from Narrabri to NSW. The 70 PJ of gas is equivalent to 60% of the NSW market.

While it may be true that Santos will supply gas from its Narrabri project to NSW consumers, it will not bring down the price of gas for four reasons:

1. Narrabri (Gunnedah) gas is nearly twice the cost of the most expensive developed gas field on the east coast of Australia. Producing high cost gas is no way to bring down the cost of gas.
2. Santos will be able to divert cheaper gas to exports while supplying Australian consumers with expensive Narrabri gas.
3. There is a cartel of producers on the east coast of Australia that controls the price of gas and ensures that Australians pay well above global parity prices.
4. Santos remains significantly short of gas at its export terminals. Santos needs approximately an additional 100PJ of gas to supply its terminals to ensure full production.

[Asian financiers are stepping out of coal](#)

Under the cover of COVID-19, Asian financial institutions and corporations have been stepping up and out of coal financing.

In the last month alone, Japan's two largest institutional banks, Sumitomo Mitsui Financial Group and Mizuho Financial Group, the Japan Bank for International Cooperation, and Ayala Corporation of the Philippines announced the end of financing for new coal-fired power projects. This follows coal exit announcements in 2019 by Singapore's United Overseas Bank, DBS Bank, and Overseas Chinese Banking Corporation.

Also this month, China released a draft renewable energy policy focusing on building a low carbon, innovation-driven, safe and efficient domestic clean energy system, while the South Korean government's Green New Deal manifesto sets a commitment to zero emissions by 2050, and introduces an effective carbon tax and the phase out of domestic and overseas coal financing by public institutions.

IEEFA expects the deflation of renewable energy costs to continue over the coming decade, accelerating the realisation of stranded asset losses for aging and obsolete coal-fired power plants and other fossil fuel technologies. The record low underscores this point, given this record is 15% below the latest record low reached only a few months back.

BZE's Million Jobs plan

The following article from RenewEconomy outlines the detailed and well-researched plan from Beyond Zero Energy for a recovery plan for Australia that would generate a million jobs, establish a clean, green environment and boost Australia's economy in the wake of the Coronavirus shutdown.

The full article is [here](#). An even better summary can be watched on the ten minute video [here](#).

Australia is at a crossroads. Billions of dollars will be spent in the coming months to reboot our economy. Much of it will be spent on jobs-rich infrastructure projects.

This means we have a once in a lifetime opportunity to set a direction for Australia's future development. Renewables are already the cheapest form of energy. With Australia's vast renewable resource, there is little doubt that they will power the majority of our activities by 2050. Accelerating that transition is our pathway to prosperity and international competitiveness and therefore the greatest opportunity for stimulus spending.

That is why Australia should enact a bold Million Jobs Plan that will modernise and electrify our infrastructure, setting Australia up for the next 50 years of abundance and decarbonising our economy in the process.

As just one example of the proposed strategies:

A bold home retrofit plan would create millions of electrified 'zero energy bill' homes. This initiative alone could create over 300,000 jobs, let alone the manufacturing demand for retrofit products and a large-scale training program. Even better it will pay itself back through the reduction in the cost of living for millions of Australians; reducing some of the income pressures many are under.