



# CROW Newsletter

(Keeping our eye on the climate news)

May, 2021

## Budgeting and the climate crisis. Will there be a green recovery?

The 2021 budget has little joy for the hope of government commitment to climate change or the environment. The following comments are typical of the responses from those who have ploughed through the budget papers looking for the Morrison government's response to the most pressing problem facing us as a nation. You can see their more detailed analyses by clicking on the headings.

### [Dr Nikola Casule from Greenpeace Australia:](#)

"In this budget, the Coalition government is putting on a show of taking action on the symptoms of climate change, without doing anything to tackle the root cause: the burning of fossil fuels."

### [Adam Morton - Guardian](#)

"The government remains averse to even using the word "climate". It appears in just two items in the 197 pages of [budget paper number two](#), which lays out proposed spending measures for the next four years.

Elsewhere, a table dedicated to "climate spending" confirms just 0.3% – 30c in every \$100 – of budget spending is dedicated to addressing the climate crisis. The government expects that to fall to 0.2% in 2022-23."

Support for gas " includes \$58.6m in new funding for expanding pipelines, a new gas import terminal, gas storage facilities and a gas supply hub at Wallumbilla in Queensland (and) \$30m for a company owned by the Andrew Forrest to help its [early works on a new gas-fired power station](#). There is a further \$24.9m for new gas-fired power plants to become "hydrogen-ready"

### [Richie Merzian – The Australian Institute](#)

The bumper #Budget21 was small on climate action. Incredibly small. Only a miserly \$19.3 million was dedicated solely for renewable energy and \$30 million for a big battery in the Northern Territory). By contrast there was no shortage of spending on fossil fuel energy and related technologies. Around \$1.6 billion over ten years was set aside to pay major polluters to 1) turn fossil fuels into hydrogen, 2) bury their emissions, 3) upgrade their equipment and practices and 4) meet and beat their agreed but weak emissions limits (under the Safeguards Mechanism). That's not to mention around \$300 million for the gas-fired recovery, undisclosed millions for liquid fuel security and a whopping \$8 billion in fuel tax credits.

### [Michail Mazengarb – Renew Economy](#)

The Morrison government has delivered another federal budget that offers little support for Australia's rapidly emerging clean energy sector, choosing instead to double down on its 'gas fired' agenda and pay major emitters to reduce their emissions.

It's another budget from the Coalition that will channel further public funds to the fossil fuel sector, particularly helping to grow the gas industry while letting major emitters off the hook, while almost entirely ignoring burgeoning wind, solar and storage technologies and entirely ignores electric vehicles.

## TECHNOLOGY AND SCIENCE

### We risk unstoppable sea level rise from Antarctica ice melt

The current pace of global heating risks unleashing “rapid and unstoppable” sea level rise from the melting of Antarctica’s vast ice sheet, a new research paper has warned.



Unless planet-heating emissions are swiftly reduced to meet the goals of the Paris climate agreement, the world faces a situation where there is an “abrupt jump” in the pace of Antarctic ice loss around 2060, the study states, fueling sea level rise and placing coastal cities in greater peril.

This tipping point for Antarctica could be triggered by a global temperature rise of 3C (5.4F) above the preindustrial era, which many researchers say is feasible by 2100 under governments’ current policies. The new research, [published in Nature](#), finds that ice loss from Antarctica would be “irreversible on multi-century timescales” should this happen, helping raise the world’s oceans by 17cm to 21cm (6.69in to 8.27in) by the end of the century.

### Going with the Vanadium flow – a better approach to battery back-up?

Engineering groundwork for the AUD 20.3 million (\$15.9 million) Yadlamalka vanadium flow battery near Hawker, South Australia, is now moving toward completion. With production of the 41 Invinity VS3 battery modules now ramping up for delivery later this year, **pv magazine Australia** recently caught up with Matt Harper, chief commercial officer of Invinity Energy Systems, to talk tech.

Yadlamalka, a 1,000-square-kilometer sheep and cattle farm 60 kilometers north of Port Augusta, is the family property of Andrew Dorman, a former senior director of McKinsey & Company and an entrepreneur with a passion for investing in new technologies that help to combat climate change.

The fundamental difference between a lithium ion battery and a vanadium flow battery is that in vanadium flow batteries, you don’t have the same cycle-charge degradation that you see with other technologies.

(We are) focused on working exclusively with solar energy, and taking a portion of that generation from the middle of the day to shift it, every day, into the evening peak period, when that electricity is most in demand and is most valuable. And because we don’t have that sort of degradation every time we charge and discharge the battery, we can do that every day of the year to match the 20- to 30-year life of solar or wind-generating plants colocated with the battery.

### ... but University of Southern California scientists say “Hold my beer”.

[University of Southern California](#) scientists have developed a new [battery](#) that could solve the electricity storage problem constraining widespread use of renewable energy.

The key innovation achieved by the USC scientists involves using different fluids: an iron sulfate solution and a type of acid. Iron sulfate is a waste product of the mining industry; it is plentiful and inexpensive. Anthraquinone disulfonic acid (AQDS) is an [organic](#) material, already used in some redox flow batteries for its stability, solubility and energy storage potential. While the two compounds are well known individually, it’s the first time they’ve been combined to prove potential for large-scale energy storage. Tests at the USC lab proved the battery has big advantages over competitors.

## It's not just CO<sub>2</sub>. Methane (natural gas) is a massive problem.

Methane is a potent greenhouse gas, [many times more powerful than carbon dioxide](#) at warming the planet, and its concentration in the atmosphere is increasing faster than at any time since record keeping began in the 1980s. But it's also a precursor of surface ozone, which is a toxic air pollutant.

For every million tons of methane emitted, about 1,430 people die prematurely, there are about 4,000 asthma-related emergencies and 300 million work hours are lost to the health effects. To put that into context, [around 370 million tons](#) of methane are released annually due to human activities.

With the technology already available today, the world could cut methane emissions from fossil fuels, agriculture and rotting waste by 45% within a decade. That would avoid 0.3 degrees Celsius (0.5 F) of warming, which might not sound like much, but it's one-fifth of the [Paris climate agreement budget](#) of 1.5 C.

## Climate emissions shrinking the stratosphere

Humanity's enormous emissions of greenhouse gases are shrinking the stratosphere, a new study has revealed.

The thickness of the atmospheric layer has contracted by 400 metres since the 1980s, the researchers found, and will thin by about another kilometre by 2080 without major cuts in emissions. The changes have the potential to affect satellite operations, the GPS navigation system and radio communications.

The discovery is the latest to show the profound impact of humans on the planet. In April, scientists showed that the climate crisis had shifted the Earth's axis as the massive melting of glaciers redistributes weight around the globe.

The stratosphere extends from about 20km to 60km above the Earth's surface. Below is the troposphere, in which humans live, and here carbon dioxide heats and expands the air. This pushes up the lower boundary of the stratosphere. But, in addition, when CO<sub>2</sub> enters the stratosphere it actually cools the air, causing it to contract.

## Has the Amazon rainforest flipped from friend to foe

The Brazilian Amazon released nearly 20 percent more carbon dioxide into the atmosphere over the last decade than it absorbed, according to a stunning report that shows humanity can no longer depend on the world's largest tropical forest to help absorb manmade carbon pollution.

From 2010 through 2019, Brazil's Amazon basin gave off 16.6 billion tonnes of CO<sub>2</sub>, while drawing down only 13.9 billion tonnes, researchers reported Thursday in the journal *Nature Climate Change*.

## **POLITICS AND POLICIES**

### Could we achieve the Paris goals despite the government's best efforts?

The Australian Energy Market Operator says the rate of wind and solar additions on the country's main grid, and the huge and growing pipeline, means it is "well ahead" of its most optimistic renewable transition scenario of 90 per cent renewable energy penetration by 2040.

AEMO chief systems design officer Dr Alex Wonhas said in a statement on Monday that a further 300 generation and storage projects, totalling 55,000MW, were currently proposed across the NEM, nearly double its current total installed capacity.

"Based on the pipeline of registered and commissioned renewable projects, we're well ahead of the 2020 Integrated System Plan's 'step change' scenario which would see more than 90 per cent renewable penetration, including rooftop solar PV, by 2040," he said.

AEMO's next Integrated System Plan is likely to include an [even faster change scenario](#), bringing forward the potential decarbonisation of the country's main grid by the mid-2030s, that would align with the Paris climate treaty goal of capping average global warming at 1.5°C.

### [Victoria joins the other states' push to reach Paris goals](#)

Victoria aims to cut its greenhouse gas emissions in half by 2030 and all government operations – including metro trains, schools and hospitals – will be powered by renewable energy by 2025.

The government announced its long-delayed carbon emissions reduction targets on Sunday, saying it will cut greenhouse pollution by 28 to 33 per cent of 2005 levels by 2025, and 45 to 50 per cent by 2030.

These targets bring Victoria into line with jurisdictions such as South Australia, which recently announced its own plan to cut emissions by 50 per cent of 2005 levels by 2030. The (much smaller) ACT will reduce its emissions by 65 to 75 per cent in the same period and NSW has a target of 35 per cent cuts by 2030.

### [Another chance for Keith Pitt to 'shine' his denier image.](#)

Keith Pitt, the Minister for Resources, Water and Northern Australia, recently burnished his climate science denier credentials by [vetoing a proposed \\$280 million loan from the Northern Australia Infrastructure Facility for a wind and battery storage hub in north Queensland](#).

Now he will have the final say on an outrageous plan to set up gas mining rigs off the coast of NSW.

It seems preposterous, like some kind of parody; an oil and gas rig off the coast of Sydney, somewhere between the golden beaches of Manly and Newcastle. But this is the absurd reality. It is a proposal still under consideration. On the share market, speculators are betting on a ten-fold surge in the share price of driller BPH Energy. "WooHoo, Go BPH :\$\$\$\$\$\$," cry the stock speculators in the chat forums.

Thankfully, this is no done deal. Very likely, it will never be done.

BUT

The decision on whether to proceed with PEP11, as the east coast Petroleum Exploration Permit is dubbed, rests with one man, Resources Minister and fossil fuels champion Keith Pitt, a Queenslander well known for his distaste for greenies and inner city latte drinkers.

AND, if you would like a laugh, [have a look at this amazing clip](#) of the Minister inaction (sic) having great difficulty in saying the word 'battery'.

## **MONEY**

### [Wallerawang's old power station has a new life](#)

The skyline of Wallerawang, dominated by the chimneys of its former coal-fired power station, is about to look very different.

The generator has been defunct since 2014 but a new company has taken over the site near Lithgow in central-western NSW to decommission the plant and turn it into a multi-purpose industrial area and renewable energy battery.

Greenspot was established in 2020 with the aim of rescuing stranded assets from the fossil fuel industry.

Chief executive Brett Hawkins said it was the new company's flagship project.

"Our objective in undertaking this project is to retain as much infrastructure as possible and to repurpose that infrastructure," he said.

(H/T Grant Adams)

### Can we recycle solar panels? Yes we are already on the way.

One of Australia's first solar PV recycling facilities is up and running in Melbourne's north, with video footage posted on LinkedIn on Wednesday showing the panel-crushing plant in action. The plant, which was completed last September in Thomastown by Melbourne based co-operative Lotus Energy, claims to recycle 100% of end-of-life solar PV modules and all associated materials recovered – inverters, cables, optimisers, mounting structures – using no chemicals.

It is likely to be followed closely by Reclaim PV Recycling, which [in February locked in plans](#) to develop its first processing facility in the industrial Adelaide suburb of Lonsdale, in South Australia.

Another company, Melbourne-based Elecsome, in 2020 [won a federal government grant](#) to set up its own "first of its kind" solar panel upcycling plant – an initiative being led by industrial manufacturing company Ojas Group in partnership with RMIT and the University of Melbourne.

The arrival of any and all PV recycling facilities and businesses in Australia is very welcome, because without them the nation's world-leading uptake of solar threatens to create a mountain of waste.

### Surprise, surprise. Coal companies pocket profits, leave the mess for us to clean up

Coal mining companies in the Hunter Valley have failed to set aside enough money to fill in their massive voids or maintain the vegetation required to restore the landscape once their mines come to the end of their lives.

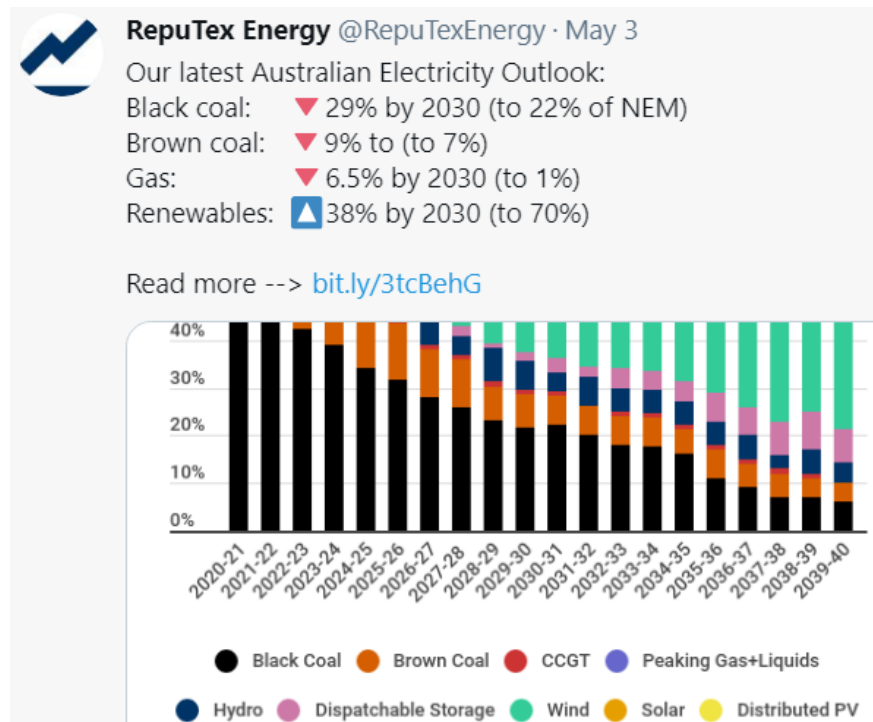
Japanese trading giant Idemitsu has fallen well short in its efforts to replant pasture and woodlands on its Muswellbrook Coal mine in the Upper Hunter, with insufficient topsoil and a poor choice of species being replanted, a report obtained by the *Herald* shows.

### **Coal and gas are falling, renewables are rising – 70% by 2030**

[Reputex](#) is Australia's leading forecaster of trends in the fossil fuel and renewables markets.

This graph clearly shows the decline in coal and gas as we approach the end of this decade.

We need to design a just transition now.



## Governments give more to fossil fuel companies than the army

Fossil fuel subsidies cost Australians a staggering \$10.3 billion in FY 2020-21. "Aside from being a climate issue, this is redirecting money from other priorities like health & education, & most of the money ending up w/ multinational mining corps.

The biggest portion of that figure is the whopping \$7.84 billion the federal government returns to business through its fuel tax credit scheme. That's more than the \$7.82 billion it put aside for the Army in the 2020-21 budget.

The progressive Canberra-based think tank, which is a vocal campaigner for aggressive climate action, found just over \$1.5 billion of that \$7.84 billion went on fuel used by the fossil fuel mining industry. In other words, it subsidised the fossil fuels used to help dig up more fossil fuels.

When the states and territories' spending on fossil fuels is added to the tally, the fossil fuel industry will have received \$10.3 billion of government support in the 2020-21 financial year.