



As the crow flies

(Straight to the point)

October, 2020

POLITICS AND POLICY

Comments on the Angus Taylor energy statement

Lenore Taylor in the Guardian

These choices – a gas-fired recovery, a government picking technologies, no pricing mechanism to drive private sector investment – are not what most in the business community want. That these policies are not what anyone concerned about the environment wants goes without saying.

[Budget commentary from the Conversation](#)

From Nicole Hasham, Section Editor, Energy + Environment

Few had high hopes the latest federal budget would be a salve for Australia's emission problem. But the papers unveiled on Tuesday by Treasurer Josh Frydenberg were dispiriting nonetheless. They also cemented this nation's status as an international outlier on climate action.

On energy, the Morrison government allocated money to upgrade a coal-fired power station and expand Australia's gas industry.

Meanwhile, money for renewable energy was scarce. Notably, just A\$5 million was allocated to developing electric vehicles – a technology that could strip emissions from our transport sector, were it given half a chance.

But globally, the tide on climate action is turning – not least in the US. Democratic presidential nominee and firming favourite Joe Biden is advancing an aggressive climate agenda, which includes taxing imports from carbon-intensive countries. So if Australia doesn't wake up to the need for climate action, even our closest allies seem willing to force our hand.

From John Quiggin, Economics Professor, University of Queensland

When it comes to action on climate change, Tuesday's [federal budget](#) delivered by Treasurer Josh Frydenberg was a real – though not unexpected – disappointment which favoured polluting technologies over a clean energy future.

It included money to upgrade a coal-fired power station in New South Wales, and confirmed A\$50 million [previously announced](#) to develop carbon capture and storage. The government will also spend A\$52.9 million expanding Australia's gas industry.

But investment in renewable energy was largely shunned. Notably, the government allocated just A\$5 million for electric vehicles. It confirmed funding for the Australian Renewable Energy Agency (ARENA) for another decade, but the money is far less than what's needed.

The COVID-19 pandemic has seen the Morrison government abandon long-held dogma on debt and deficits. However, the federal budget shows when it comes to climate and energy, the government is singing from the same old songbook.

[Did Xi Jinping just save the world?](#)

From the Chinese Premier's speech at the UN, September 22:

"China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures. We aim to have [carbon dioxide] emissions peak before 2030 and achieve carbon neutrality before 2060."

Xi Jinping's speech via video link to the United Nations General Assembly on Sept. 22 was not widely trailed in advance. But with those two short sentences China's leader may have redefined the future prospects for humanity.

EU increases its renewable goal to 55% reduction by 2030

The European Commission is raising its greenhouse gas emissions reduction target from 40% to 55% by 2030, based on 1990 levels, a target that will require significant increases in energy efficiency and renewable energy shares.

To achieve the newly proposed 55% greenhouse gas emissions reduction, the EU will need to increase the share of renewable energy to around 38% to 40% of gross final consumption. For the EU's power sector, renewables will be required to supply around two-thirds of the EU's electricity while fossil fuels must generate less than 20% of the EU's electricity by 2030.

Within this, Germany has set a target of 65% by 2030 and France has unleashed a 30 billion euro green stimulus program.

(By comparison, Australia's goal is 26% on 2005 levels, ie a higher starting point, by 2030).

Lobby Land

This is a brief excerpt from an article by Ian Dunlop in Michael West Media. It is well worth a read if you want to understand why our government is so inactive in dealing effectively with climate change.

Lobbyists for the fossil fuel industry have enjoyed a meteoric rise in influence both locally and globally over the past few decades.

Despite the supposed success of the 2015 Paris Climate [Agreement](#) in uniting disparate parties behind the common objective of tackling climate change, the words "fossil fuels", "coal", "oil" or "gas" do not appear in the entire document, even though reduction in their carbon emissions is the agreement's [raison d'être](#).

It is just one example of the influence of fossil fuel lobbyists. From the outset of international climate negotiations under the 1992 UN Framework Convention on Climate Change, industry representatives played a major role in influencing [outcomes](#) in favour of continued fossil fuel use, led in Australia's case by the Australian Industry Greenhouse Network (AIGN).

Industry's forked tongue

Publicly the industry now accepts that climate change is real and caused by anthropogenic carbon emissions; every corporate and lobby group website has its commitment to sustainability, and in many cases a climate change plan. However, the urgency for action is yet to be accepted.

And in Australia, denial mounts. The recent "Gas-Led Recovery" and "Technological Roadmap" announcements of the Morrison government confirm the continued influence of the fossil fuel industry and its lobbyists, with the Prime Minister's office, the Covid Commission and other advisory groups stacked with fossil fuel representatives.

Since

SCIENCE AND TECHNOLOGY

Renewables hit 50%

On Saturday, 3 October, in the late morning, the share of renewables ((in the Eastern states) reached 54.5 per cent, nearly two percent above the record set a day earlier. What was even more striking was the share of wind and solar, which broke above 50 per cent for the first time on Friday, and then did so more emphatically on Saturday, breaking through 50 per cent around 9.15am and staying above 50 per cent until around 1.30pm.

The wind and solar output got to a high of about 52.3 per cent, with slightly more than half of this coming from rooftop solar. The percentage of wind and solar might have been higher, but some wind and solar farms switched off to avoid the negative pricing events which were recorded in most states at some point in the day.

But wait, there's more

The more striking achievement came in South Australia, where wind and solar combined to meet 73.3 per cent of local demand in **the whole month** of September.

While on Thursday, South Australia's wind and solar reached 66 per cent of local generation. Dylan McConnell, an energy analyst from the Climate and Energy College in Melbourne, points out that South Australia is a net exporter (to Victoria) and the share of wind and solar in South Australia compared to local demand was 73.3 per cent.

First UK flight for first hydrogen powered plane

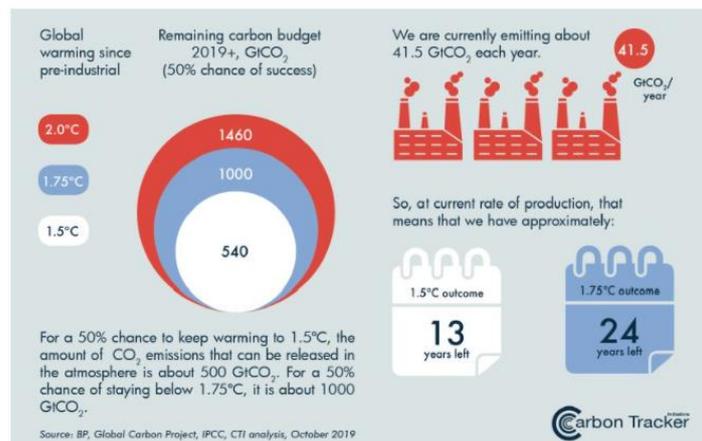
CRANFIELD, UK - JUNE 23, 2020 — [ZeroAvia](#), the leading innovator in decarbonising commercial aviation, conducted the first ever electric-powered flight yesterday of a commercial-scale aircraft carried out in the UK. The test flight is a significant milestone both for the UK's net zero and green aviation ambitions, and for ZeroAvia on the journey to demonstrating long-distance zero emission flights in large aircraft.

[See the video here.](#)

The global carbon budget is running out

Great info graphic. But remember: this is for just a 50% chance of staying below those global warming levels. If we want to give current and future generations better climate odds than the flip of a coin, we need to work harder and faster to reduce fossil fuel emissions. *(Comment from Penny Sackett)*

The global carbon budget is running out *We can't burn it all*



Copper is the new silver – UNSW strikes again in solar technology

Next generation high efficiency solar cell technology spun out of the University of New South Wales is a step closer to being manufactured in Australia at scale after being awarded a \$3 million ARENA grant.

Australian Renewable Energy Agency (ARENA) funding for NSW start-up SunDrive Solar was announced on Monday, in support of its \$9 million bid to produce a commercial-size PV module for use on household rooftops.

SunDrive's technology replaces the growing use of silver in solar cells – a key barrier to the broader adoption of next generation technologies – with copper, which is significantly cheaper and more readily sourced.

The technology was originally developed by SunDrive CEO Vince Allen during his PhD at UNSW. Allen went on to found SunDrive in 2015 with his flatmate from his undergraduate studies David Hu.

It's a Popeye led technology breakthrough

"Eat your spinach," is a common refrain from many people's childhoods. Spinach, the hearty, green vegetable chock full of nutrients, doesn't just provide energy in humans. It also has potential to help power fuel cells, according to a new paper by researchers in AU's Department of Chemistry. Spinach, when converted from its leafy, edible form into carbon nanosheets, acts as a catalyst for an oxygen reduction reaction in fuel cells and metal-air batteries.

An [oxygen reduction reaction](#) is one of two reactions in fuel cells and metal-air batteries and is usually the slower one that limits the energy output of these devices. Researchers have long known that certain carbon materials can catalyze the reaction. The AU researchers wanted to find an inexpensive and less toxic preparation method for an efficient [catalyst](#) by using readily available natural resources. They tackled this challenge by using [spinach](#).

Aluminium needs renewables and vice versa

IEEFA consultant, Clark Butler says that the failing aluminium sector could move to low-cost, zero-emissions electricity and invest in plant modernisation to support demand response management

Putting a lens on the industrial energy demand hub of Gladstone in Central Queensland, he concludes the area could become a model for sustainable heavy industry, centred on demand driven by the local aluminium smelter.

Gladstone has four major hydrogen projects in the planning stages. Butler found that if electricity could be generated and delivered to Gladstone at A\$40-50/megawatt hour (MWh) this would support increased export competitiveness and jobs growth, not just in aluminium but in all of Gladstone's heavy industry sectors, including cement, and help establish a platform for a new green hydrogen industry.

"Gladstone has four major hydrogen projects in the planning stages and has a number of competitive advantages when it comes to developing a green hydrogen industry: World class solar energy, available land, a major export port and an established energy exports industry," says Butler.

Butler says the Gladstone plan could be a template for expansion across the aluminium sector, and is also applicable to Victoria and New South Wales.

"By focusing on large scale, low cost of capital, zero-emissions renewable infrastructure tied to significant energy users with long-term growth prospects in a low-carbon economy, there is a real chance to build momentum."

Full report: [An Aluminium-led Energy & Industry Renewal for Central Queensland](#)

Are your solar panels facing the wrong way?

(Hat tip: Grant Adams)

Facing rooftop solar panels east and west instead of north may save homeowners money and help with electricity grid stability, new research suggests.

Key points:

- Kirrilie Rowe is not the first person to think of pointing panels more east and west, but she has quantified the benefit
- The University of South Australia scientist says the orientation change would help capture morning and afternoon sun
- AEMO is seeking solutions to better integrate rooftop solar with the electricity network

Kirrilie Rowe, a scientist at the University of South Australia, said the electricity use of most households peaked in the morning, dipped in the middle of the day, and peaked again in the late afternoon.

"So if we were to face our panels to catch more of the morning sun, we can better match electricity load in the morning," she said.

"And similarly, if we

MONEY

Wallerawang: used to be a dirty coal fired power station, but it's alright now

Key points:

- The owners of the industrial park hope to attract manufacturing and food production businesses
- A councillor says the project will help diversify the local economy
- A state member says job opportunities at the site will bring people to the region

EnergyAustralia handed over the keys of the old Wallerawang power station, near Lithgow in central-western New South Wales, to its new owner Greenspot.

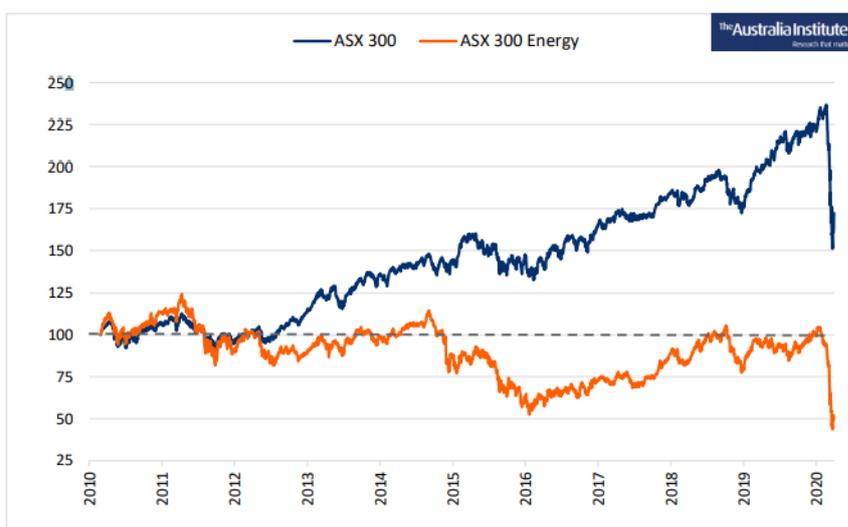
Greenspot partner Neil Schembri said he hopes the site will attract manufacturing and protective cropping food production businesses to generate employment for the area.

"A few hundred jobs is more than achievable out of the next few years," Mr Schembri said.

Around 60 jobs will be created in the initial demolition and rehabilitation phases over the next two-and-a-half years, he said.

So, that's where all my millions of dollars have gone

ASX 300 vs fossil fuel dominated ASX 300 Energy



Fossil fuel companies have performed worse than the wider market over the entire last decade. In fact, the fossil fuel dominated ASX 300 Energy sector performed worse than all other sectors over the last decade.

Nuclear and renewables don't mix

New research has warned that nuclear and renewables should not be combined in any recipes for effective energy system decarbonisation, with the two generation types likely to crowd each other out and limit their effectiveness when mixed.

The upshot of the research is that nuclear and renewable programs do not co-exist well together in national energy systems for a range of reasons, not least of all because of the inherently different production profiles of the technologies.

The study noted that a grid structure optimised for larger-scale centralised power production such as conventional nuclear, for example, would make it more challenging, time-consuming and costly to introduce small-scale distributed renewable power.

The real question is not "How do we pay for green policies?" its "How can we possibly afford unchecked climate change?"

The world is underestimating the economic effects of climate change by **trillions** of dollars, according to a new study co-authored by scientists from the University of Warwick.

The study shows that current economic forecasting models fail to account for unpredictable variations in [global temperatures](#), rather than the more predictable rising temperatures themselves.

"Our study identifies a new category of economic costs—those arising from the unpredictable, but unavoidable fluctuations in [global climate](#) that we're bound to face," says Professor Raphael Calel, "To prevent these losses, we need a more diverse set of policy responses with increased investment in adaptation and resilience."

Cost of Inaction

Calel says that current models fail to take into account the unpredictable fluctuations in global temperatures observed year after year. "These fluctuations will create trillions of dollars of additional economic damages," Calel says.

The extra damages—anywhere from \$10 trillion to \$50 trillion over the next 200 years when measured in today's dollars, according to the study—show us that the cost of inaction is substantially higher than previously believed, he says.