

China's push puts end of fossil fuels in sight

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With a single shock announcement at the United Nations this week, Chinese leader Xi Jinping has brought the end of the fossil fuel era into view and left Australia further isolated on its climate policy, says a former director at the Australian Department of Defence, now working at the Climate Council.

"The writing [for fossil fuels] is on the Great Wall," says Cheryl Durrant, a former director of preparedness and mobilisation at the ADD.

Xi at the UN General Assembly spoke of a "green revolution" and committed his nation, the world's largest carbon emitter, to reaching net-zero emissions by 2060.

Looking over recent events in China, Xi's direction makes great sense, says Durrant, a councillor with the Climate Council.

Since June flooding in China has hit 27 provinces killing at least 219, leaving 4 million in need of evacuation and costing the economy \$US25 billion (\$35 billion) according to *The Lancet Planetary Health* journal. Experts attribute increased rainfall and flooding to climate change, which they also blame for increased water insecurity in China, in large part due to retreating glaciers in the Himalayas.

When stability in China is threatened the Chinese Communist Party tends to act forcefully, says Durrant.

With China now broadly in line with Europe, a third of the world's population now has governments backing mid-century net-zero targets. Should US Democratic presidential candidate Joe Biden win office in November and institute the climate policies he has campaigned on, global efforts on climate change could be overturned in the space of months.

According to Niklas Hohne of Germany's New Climate Institute, with Europe, the US and China acting in concert along with pledges already made, the world would be 63 per cent of the way towards the emission reductions needed to limit warming to 1.5 degrees celsius.

"That's a huge number and totally different to what we saw before," Hohne, a climate scientist and creator of the Climate Action Tracker, told a New York Climate Week online panel.

Xi in his speech also flagged the possibility of working with the US, noting that it was agreements between himself and former president Barack Obama that made the 2015 Paris climate agreement possible.

This week Energy and Emissions Reduction Minister Angus Taylor made the first of what are to be annual statements supporting the government's lower emissions technology road map.

In the speech he detailed how \$18 billion would be spent via the Clean Energy Finance Corporation, the Australian Renewable Energy Agency, the emissions reduction fund and other grants. In keeping with government policy it did not include a 2050 target, instead Taylor detailed five low-emissions technologies the Australian government would prioritise for funding: clean hydrogen, electricity storage technologies, low carbon steel and aluminium, carbon capture and storage (CCS) and soil carbon, sometimes referred to as carbon farming. The plans are in addition to the government's determination to support a gas-led economic recovery.

The plans have attracted both support and trenchant criticism, with former prime minister Malcolm Turnbull dismissing support for gas as "mad ideology".

"A green new deal, renewable-led economic stimulus, would be much more effective than focusing on what is a very expensive fuel in gas," he told the ABC.

Professor Will Steffen, former director of the Australian National University Climate Change Institute and a member of the Australian Climate Commission until its dissolution in September 2013, criticises the plan for the inclusion of CCS, which he says is so far not commercially viable and will serve to maintain the fossil fuel industry for a few more years rather than help Australia to rapidly reduce its emissions. And though Taylor said in the speech that the plan would result in Australia emitting 250 million tonnes less of carbon dioxide a year by 2040, Steffen says the target was meaningless as it was set against no benchmark.

Australia's Chief Scientist, Dr Alan Finkel, who led an advisory panel established by Taylor as the policy was being devised, says it is deliberately technology neutral.

"One of the overarching principles that all of the panel members, and the minister, hold is that the aim here is to reduce atmospheric emissions of carbon dioxide or methane into the atmosphere," he says. "The aim is not to terminate a given technology. The aim is to reduce carbon dioxide emissions and whatever technology can do that, most rapidly, and most cost effectively needs to be considered."

Finkel rejects criticism of the government's decision not to include a 2050 target and describes the projected carbon reductions as "huge" compared with current Australian emissions of about 500 million tonnes a year.

"It's a very, very credible starting place," he says.

Also this week the world's largest energy consultancies, Wood McKenzie, issued a report on the progress of global emission reductions efforts and energy transition.

It makes for grim reading.

According to Wood McKenzie's analysis the world is on track to a 2.8 to 3 degrees warming trajectory – not 2 degrees or lower – which is far above the Paris goal of close to 1.5 degrees as possible.

Speaking after the report was issued Prakash Sharma, the group's Asia Pacific head of markets and transitions, says that the government's focus on hydrogen energy and carbon capture on storage in the low emissions statement is appropriate.

He says the two technologies will become crucial if the world is to begin to meet its targets, and that green hydrogen – hydrogen produced using renewable technologies only, rather than via gas and CCS – will not produce carbon-free energy at the scale and in the timeframe needed.

If CCS technology is made commercially viable, he says, it could be linked to existing energy and industrial infrastructure.

But he agrees with Durrant that Xi's announcement has huge implications for the world, despite China's recent expansion of its coal fleet and that it will continue importing coal and gas in the coming few years.

China acting on its own has the economic and industrial scale to drive down the cost of crucial low emission technologies and bring forward the end of fossil fuels. (At present Wood Mackenzie expect fossil fuel demand to peak in 2036.)

"If you draw a parallel to what happened to solar and wind and batteries when China suddenly went ahead and started deploying those technologies the cost fell quite dramatically. And something similar could happen in the emerging technology space as well," Sharma says.

"So, for example, if China goes full steam on CCS and green hydrogen and on electrolyser technologies [which are used to make hydrogen], then the cost of those technologies would also fall faster than expected and that means the whole world might benefit with China's deployment.

"It is probably one of the most important statements made in the global energy industry for a long time."

In the long run the shift could benefit Australia, which due to its space, sun and wind has the potential to become a significant exporter of hydrogen, says Sharma, as the Australian government has already noted in its own hydrogen strategy.

This outcome could be dependent not only on the development of hydrogen technology but also methods of safely and efficiently shipping it and Sharma warns that customers such as Japan, China and South Korea are going to prefer a green hydrogen product produced either with renewable energy or proven CCS.

Durrant believes that Xi might use his nation's environmental push not only to address the heating world but to begin to reset his nation's diplomatic efforts.

If that happens, she says, Australia could find itself under pressure across the Indo-Pacific, locked into an unambitious climate policy at odds with its trade, defence and foreign affairs policies in a region set to become "ground zero" for climate change.

We could find ourselves isolated among outlier countries determined to prolong the life of fossil fuels, Durrant warns, "part of an axis of carbon with Russia and Nigeria".