

To whom it may concern,

I am a member of the public, someone who values CSIRO greatly and hope the following feedback is valuable as I think constructive criticism from many angles is the only way to make progress.

Some main points of criticism of the report, which are partly taken from Aidan Morrison @QuixoticQuant and expanded upon by myself.

1. Include large scale nuclear costs in the report, not the single case SMR example used previously as the technology is in it's infancy and is only speculative currently. I support R&D and investment in SMR's and I think CSIRO can do a better job at costing this, see Ben Heard's critique <https://www.parliament.vic.gov.au/48fd33/contentassets/261bd316e0334072b3bb18888ad9eac2/submission-documents/s74---bright-new-world.pdf>

And

also, <https://web.archive.org/web/20211213110553/https://www.brightnewworld.org/media/2021/6/21/why-gencost-isnt-the-answer-for-nuclear-economics>

If SMR's or large scale nuclear can't be costed properly, then don't include them in the report at all.

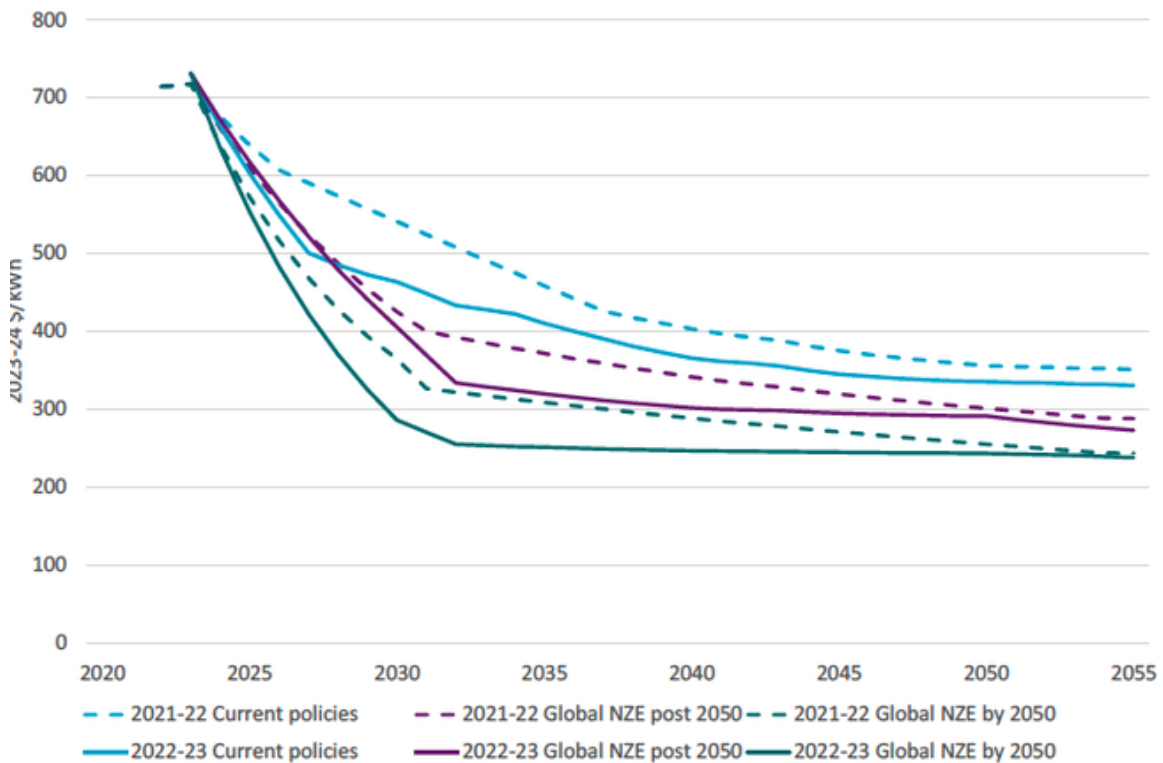
2. Using fuel prices from the Ukraine war appears to be cherry picking, which artificially inflates the cost of coal. It appears CSIRO is using the average cost of low coal prices and the highest cost of high coal prices to arrive at a range. It doesn't take a statistician to see the error in this. It would take a simple correction to then use as a more accurate comparison to renewables.

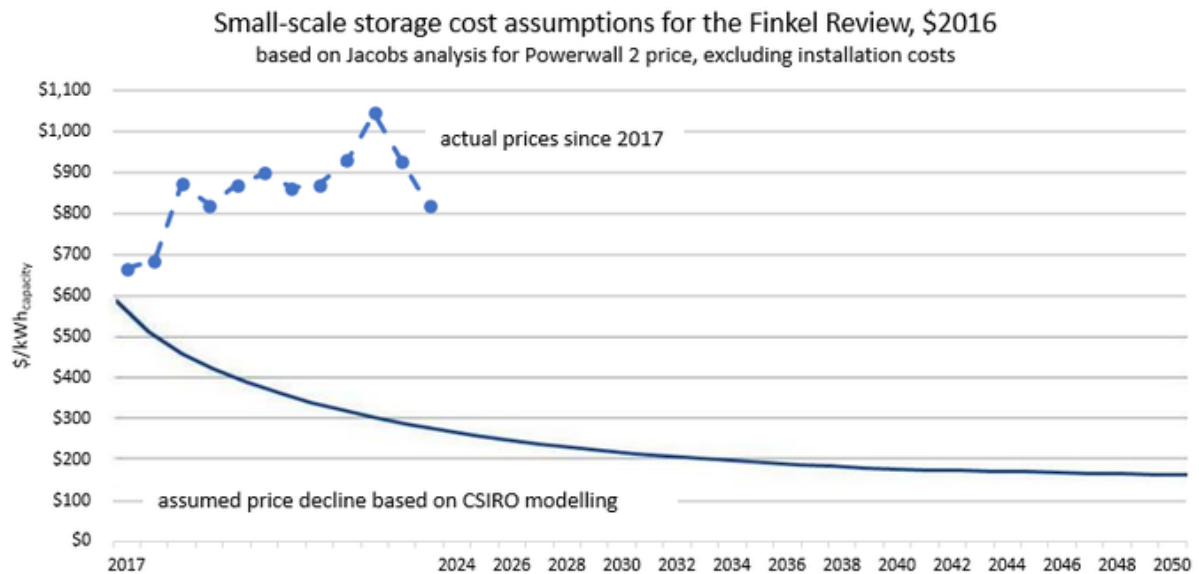
	CSIRO's values	Avg of IASR	Max of IASR
2023 Low	\$ 4.3	\$ 4.32	\$ 1.43
2023 High	\$ 11.3	\$ 4.79	\$ 11.27
2030 Low	\$ 2.7	\$ 2.69	\$ 3.24
2030 High	\$ 4.1	\$ 3.04	\$ 4.10
2040 Low	\$ 2.5	\$ 2.49	\$ 3.04
2040 High	\$ 3.8	\$ 2.91	\$ 3.78
2050 Low	\$ 2.5	\$ 2.47	\$ 3.04
2050 High	\$ 3.8	\$ 2.83	\$ 3.61

3. It is crucial to realistically calculate the full cost to integrate reliable renewables. What's been published doesn't appear to reconcile with the ISP in regards to battery storage. There appears to be an approximate doubling of \$/MWh for battery storage reported by ISP compared to Gencosts estimates. I can't make sense of it, what is going on here? For a thorough analysis see the following thread <https://twitter.com/QuixoticQuant/status/1755103476236042327> Additionally, grid scale battery storage doesn't yet exist, there is no grid on earth that has this technology yet, so why is the CSIRO speculating on the cost of a non-existent technology? Are there better ways to calculate potential costs let alone develop the technology required to achieve it?

4. The sunk cost method used originally in last year's report is still not good enough for the 2030 calculation. Sunk costs are still costs and it is disingenuous to hide these. What about the costs of Snowy 2.0, the battery of the nation (pumped hydro), transmission expansion projects and the Kurri Kurri and Illawarra gas peaker plants? Consumers eventually pay for these and writing them off as "costs to investors" misinforms any debate. Transparency of total costs is vital to inform the public and decision making.

5. Battery price assumptions are also very speculative





sources: energy.gov.au/publications/report-independent-review-future-security-nem figure 12
solarchoice.net.au/products/batteries/tesla-powerwall-2-review 13.5 kWh, adjusted for inflation

The ISP is banking on consumers to buy vast volumes of batteries while they've gotten more expensive over the last 3 years. Any prediction that they will come down in price needs a lot more explanation.

These are just a few of the criticisms of the report, although probably the main ones to focus on.

As a side note on nuclear energy in general, it is the cleanest source of high density fuel we know of and despite the bad press, there is a much larger scientific consensus on its safety in reactor design and waste storage. Unfortunately this doesn't get publicised and nuclear prohibitions certainly don't help give scientists in Australia the chance to demonstrate this. Australian scientists have a strong history of punching above our weight when it comes to research and development that benefits the entire world. Development of penicillin and wifi technology come to mind among many others. I believe the current prohibitions on nuclear power in Australia not only slows progress globally in this field but denies local employment for Australian scientists, harms Australia's global scientific leadership and most importantly stifles long term economic prosperity for Australia in a field which is making large technological advancements in many other countries.

It is hard to reconcile the errors that appear to have come out of CSIRO's Gencost reports and it is disappointing if not dangerous that transparency and accuracy hasn't been practiced. Disappointing on a personal level, an institution that has been revolutionary for Australia and the world's progress, where it appears to be partly captured by political ideology through government persuasion. Dangerous on a societal level, where lack of independent, objective reporting can lead the public to misunderstand the ramifications of an energy system that is expensive, unreliable and not based in reality. One only has to look at Germany to get a real

world example of a nation that tried and failed to implement a system that Australia wants to pursue. At the very least, a proper analysis and costing of such an ambitious VRE system needs to be done to inform the public. I have hope that these critiques and further public debate can help get closer to a rational outcome. CSIRO is an institution that we all need and should value and one I wish to continue to support.

Sincerely,
Joshua Leyshon