

**This newsletter examines the policy direction of Teals / Independents, based on simplifications in CSIRO GenCost 2024, a misunderstanding of how nuclear energy combined with renewables provides benefits including a pathway to net-zero, and why the 100% renewables pathway, is really a renewables + gas pathway that maintains Australia's reliance on fossil fuels beyond 2050.**

### **Six Fundamental Problems for the Teals**

**Australia is alone in the world, going for a 100% renewables mega-grid, regrettably it doesn't stack up. Here are six fundamental problems that are only going to get worse the further we go.**

**COST** – The 100% renewables pathway is too expensive. CSIRO in GenCost 2024, didn't consider the overall cost of renewables in an integrated system. Detailed modelling and costing by Frontier Economics show that the inclusion of nuclear for baseload power is 25% to 44% cheaper than a renewables, storage and peaking gas system. Cost blowouts and delays on Snowy Hydro 2.0 and HumLink are early indicators that costs are out of control.

**ENVIRONMENT** – The Government has under-estimated the extent of environmental damage and the public outcry from wind farms, solar farms, access roads and the transmission lines, that they are planning to increase 600% by 2050. This includes impacts on wildlife, land amenity, the devaluation of nearby properties, and a degradation in the natural beauty of Australia, particularly along our coastline and hinterland. It's so bad that not even Bob Brown wants another electricity link to Tasmania to support mainland renewables.

**REPLACEMENT** – Not accounting for the extraordinary cost, resource demand and environmental impact of replacing all the grid batteries every 10 years, solar panels every 20 years, onshore wind every 30 years, and offshore wind every 10 to 15 years. Then adding to this the projected ongoing growth in renewables. All this, because renewables don't last, and they lack energy density – you need a lot of stuff for not much energy, then you throw it away.

**HOUSEHOLDS** - Ignoring the burden to households of buying, maintaining and replacing household solar panels and batteries every 10 to 15 years, together with the cost to taxpayers of subsidies. Then charging households for sending electricity back to the grid at peak times.

**SPILLAGE** - Building a system with too much spillage and not enough storage. Renewables make too much electricity some of the time, that needs to be spilled, and not enough at others when the sun isn't shining, and wind isn't blowing. This kills efficiency and will get unmanageable when there is no baseload energy to offset this variability.

**FOSSIL FUELS** - Underpinning a renewable energy mix with gas turbines (despite Net Zero 2050 – obligations), because intermittent, variable renewables are too unreliable and energy storage constraints for batteries and pumped hydro are orders of magnitude too small.

**Kate Chaney 1 – evidence shows that it is too costly and too slow to roll out in Australia, and its potential is eclipsed by solar and wind. This is confirmed in the recent 2023/24 GenCost Report.**

It is understandable that Kate drew this conclusion from the GenCost Report, as it doesn't consider the integrated cost of variable renewables that only operate some of the time, with storage and gas turbines.

AEMOs Integrated System Plan addresses renewables, storage and peaking gas turbines. Frontier Economics adjusted this model to provide 38% nuclear power. This resulted in a cost saving of between 25% and 44%, compared with the AEMO model.

**Kate Chaney 2 – “Coalition modelling is full of wishful assumptions. It’s a triple threat: higher power bills, burning more coal and taxpayers left to foot the enormous bill. We need to do what makes sense, and this doesn’t.”**

Rising power bills are not driven by a C2N plan by the Coalition, but by renewables projects and extensions to the NEM grid that are running way over budget and not providing a return on investment. These include Snowy Hydro 2.0, HumeLink and EnergyConnect.

Our power bills are also influenced by the NEM trading mechanism, where an increased variability in the supply of renewable energy has pushed up power prices, and undercut baseload coal.

**Sophie Scamps 1 – “Most concerning is that Mr Dutton’s energy demand projections assume Australia will not have a serious green manufacturing sector.”**

Energy demand projections are assessed by energy economic experts and not by wishful thinking by politicians. Danny Price (Frontier Economics) has taken a realistic position in assessing the AEMO Progressive and Step Change energy growth models.

Danny’s assessment does not preclude any green manufacturing. In fact, it is more likely with a combination of renewables and nuclear energy, as costs are considerably lower, and baseload power from nuclear is more reliable than a combination of renewables, with batteries and gas turbines.

**Sophie Scamps 2 - “Mr Dutton’s plan to cap renewables in the grid at 54 per cent by 2050 is nonsensical. We’re already on track for 48 per cent renewable energy by the end of 2025, so enforcing this cap would pull the rug out from under billions in private investment**

These projections of renewables are way off. Investment has stalled because there is inadequate transmission, and investors are holding back from investing when wind and solar farms can't be connected to the grid. AEMO is planning six times (600%) today's utility scale wind and solar for Australia by 2050, plus 56GW of storage, and 14.8GW of gas turbines. (See the attached growth chart from AEMO 2024).

# NEWSLETTER No.4

Mon 13 Jan 2025

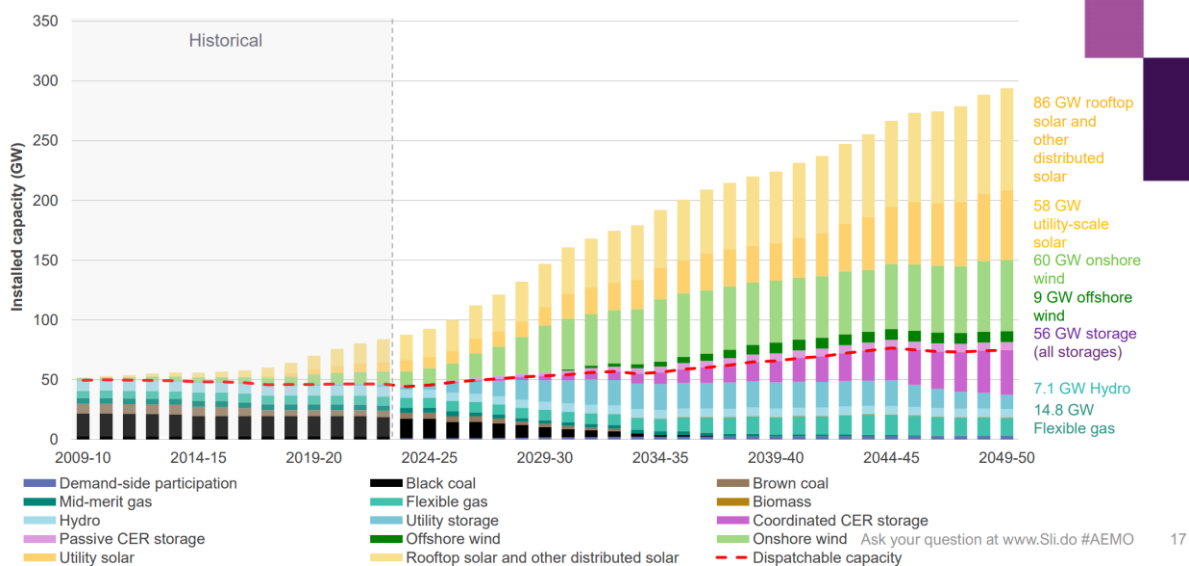
Teals/Independents - energy policy positions.



Think what it means. Six times the number of wind farms and solar farms, plus rooftop solar and batteries, that we keep having to replace every 10 to 30 years, depending on the components, and a mega-grid of transmission lines to connect it all together.

Under the Coalition plan there will still be growth in renewables, but it can be distributed in a far more cost effective way to a more compact grid, without offshore wind, which is prohibitively expensive, with less storage and reliance on CO2 emitting gas turbines.

## Six times today's utility-scale wind and solar, and five times today's consumer energy resources, by 2050



AEMO ISP 2024 – Publication Webinar

**Sophie Scamp 3 - "If nuclear energy was viable in Australia, commercial operators would be lining up to benefit from the opportunity. They're not. "Instead, the big energy companies have said they'll be staying on track with their renewable targets and plans."**

Commercial operators aren't pursuing nuclear opportunities in Australia, because state and federal bans are in place that need to be lifted. Nuclear power also requires combined support from sovereign funds and private sector investment, with an investment structure that addresses investor returns in a timely fashion, and long term, low cost electricity that benefits consumers well beyond 20 years. (As seen in France and Canada).

**Zali Steggall 1 - "I'm very disappointed that the Coalition don't have a realistic policy to take to the Australian people for the next election,"**

The Coalition energy policy is realistic as confirmed in Frontier Economics Report No.2 Dec 2024, that factored in the life of existing coal power stations, a timeframe to phase them out,

## NEWSLETTER No.4

Mon 13 Jan 2025

Teals/Independents - energy policy positions.



and replacing them with nuclear. This achieves Australia's net zero by 2050 obligations, with a system that doesn't rely on gas.

The plan also addresses the timeframe needed to switch over from coal-to-nuclear C2N and maintains a grid with 65% baseload capacity, making it more stable than the renewables plus batteries and gas turbines alternative.

**Zali Steggall 2 - "the concept of baseload power is "antiquated" and "proving to be more and more a thing of the past".**

The concept of baseload power is antiquated for energy speculators who derive profits from gaps in intermittent renewable energy supplies, or when pumped hydro and batteries are depleted. But investors are the only ones who benefit, for households and businesses it simply pushes up our electricity bills.

Baseload power is essential in industry. Portland smelter, our data centres, even the South Australian energy grid rely on baseload power in the Latrobe Valley. IT giants Microsoft, Google and Amazon lock in long term baseload contracts from nuclear, because it's reliable, green, and essential in supporting emerging technologies. Reliable baseload electricity is anything but a "thing of the past."

**Monique Ryan – "Even if we could get nuclear going in Australia – which would take at least 15 years – it would cost at least four times more than electricity from renewables."**

Monique has repeated a consistent error from CSIRO, Labor and now the Teals. There is a flawed comparison between renewables and nuclear from the CSIRO in GenCost 2024, that ignores the overall cost of an integrated system. Detailed modelling and costing by Frontier Economics show that the inclusion of nuclear for baseload power is 25% to 44% cheaper than a renewables, storage and peaking gas system.

**Nicolette Boele (Facebook 1) – "Cost taxpayers up to \$600b", "supplies as little as 4% of Australia's total energy needs" and "requires enormous amounts of water".**

Frontier Economics have shown that the cost to taxpayers is between 25% and 44% less than the renewables only pathway in the Integrated System Plan (ISP) this makes 100% renewables unaffordable, as is currently being experienced.

The Frontier Economics study incorporated a phased a C2N transition with nuclear providing 38% of Australia's energy needs, with the remaining 54% from renewables.

Nicolette raises a concern over enormous amounts of water for nuclear. Yet no additional water is needed for C2N projects. The water supply, cooling ponds and cooling towers switch from C2N, which is a great benefit for these projects.

**Nicolette Boele (Facebook 2) – "Nuclear will add at least \$665 a year to household power bills and force household solar systems to shut down".**

## NEWSLETTER No.4

Mon 13 Jan 2025

Teals/Independents - energy policy positions.



Nicolette has relied on an assessment by the Smart Energy Council. They failed to account for household power bills going down with nuclear between 25% and 44% based on Frontier Economics Report 2, Dec 2024.

Even without nuclear, rooftop solar is in serious trouble, as excess solar electricity produced in the middle of the day needs to be spilled back into the grid, which is now a cost to consumers. There are hidden costs in all the subsidies for solar panels and batteries that end up being paid for by households through added taxes. Finally, batteries that last 10 years and solar panels that last 10 to 20 years are not going to be replaced, free of charge. (Can you imagine the work to replace these for 5 million households?)

There is a role for rooftop solar, particularly where electricity can be used during the day, for cooling, charging EVs and home batteries, but this all comes at a cost, and all the hidden costs need to be included in assessing the impacts of rooftop solar on households.

**Nicolette Boele (Facebook 3) – “Will take at least 20 years to build and get nuclear online, meaning the use of gas and coal will be extended until then”**

First-of-a-kind (FOAK) reactors can take 20 years to build. Whereas proven reactors that are nth-of-a-kind (NOAK) can be constructed in anywhere from 5 to 10 years. It is these NOAK reactors that are proposed in the Coalition’s plan.

They include a transition from coal to nuclear (C2N), based on reasonable coal power station closure dates in the Frontier Economics modelling. Whereas the Labor plan in the AEMO ISP has been accelerated and requires 14.8GW of gas from 2050 onwards as a backup for renewables. This is a massive amount of gas and exposes a critical flaw in Labor’s policy. It is not net-zero.

**Nicolette Boele (Facebook 4) “there are no sites to store high level nuclear waste in Australia...”**

Nuclear reactor spent fuel is being managed at 440 reactor sites around the world, where it is safely placed into cooling tanks, then dry caskets. The same would occur in Australia, where it is initially stored at nuclear power station sites. It is then transported to a repository for the permanent storage of intermediate and high level waste.

The same repository that is required for the AUKUS submarine spent fuel can accommodate the spent fuel from nuclear power stations. This repository is already required in Australia as part of the AUKUS agreement made by the Labor Government. As a result, the Government have effectively locked in the need for long term nuclear waste storage. There is plenty of time to find the best location in Australia, as both AUKUS submarine spent fuel and energy reactor spent fuel will not need to go into permanent storage until well after 2040.

**Some comments sourced from:**

<https://www.skynews.com.au/australia-news/politics/teal-independents-stance-on-nuclear-could-shape-australias-energy-future-amid-likely-hung-parliament-at-2025-federal-election/news-story/2f53d5b9ed07bbdc1d47c4a809895c64?amp>