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The energy debate positions by leaders and in the media.

Labor and the Coalition have been establishing their respective positions. We look at key issues, where they stand, based positions stated by Chris Bowen in Energy Insiders RenewEconomy Podcast 19 Dec 2024 and Danny Price the author of Frontier Economics Interview with Nuclear for Australia 31 Dec 2024. Then we review some recent energy articles from The Guardian newspaper.

Overall Energy Policy Directions:

Labor – are focused on achieving net-zero as quickly as possible with 100% renewables and interim goals such as 82% renewable energy by 2030. This involves building a grid for renewable energy with backup storage and gas for peaking loads.

Coalition – are focused on the lowest cost energy mix that their modelling shows to include nuclear and renewables. Their focus is to reduce electricity costs for households and businesses, drive the economy and meet Australia's net-zero by 2050 obligations.

Frontier Economics (Danny Price) – Used AEMO ISP model assumptions and added in nuclear energy in stages based on coal power station closures, then solved for the least cost options.

In Table 1 we compare the analysis by AEMO and Frontier Economics on key energy issues and provide commentary on their policy differences.

Table 1: Labor and Coalition Respective Positions on Energy

Issues	AEMO – ISP	Frontier Economics	Remarks
Cost of Electricity – generation and transmission by 2050	$528 billion Supply $66 billion Transmission $594 billion Total	$317 billion Supply $14 billion Transmission $331 billion Total (44% cheaper)	The Coalition are focused on reducing costs to households and businesses, as key to driving economic growth.
Electricity - Demand by 2050	Pursuing a high supply pathway based on AEMO ISP Step Change model will drive demand and growth 374TWh.	Propose lower supply using the AEMO Progressive Model to better balance demand and supply 277TWh.	Labor believes green energy will drive green investment, whereas Coalition believes low electricity prices will drive growth.
Coal baseload phasing out	Accelerated coal closures to minimize carbon emissions, without cost optimizing. .	Extended operating life of coal to minimize unnecessary costs. Timing is based on advice from coal operators.	Labor earlier coal closures mean Australians pay more for renewables, earlier, but also reduce CO2 emissions up to 2045, after this the Coalition proposal is more CO2 efficient.

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Network Reliability	Blames coal for being unreliable, noting coal power stations are designed for smooth baseload	High fluctuations in the output from renewables, system spillage and a lack of storage, effect reliability.	Australia needs a clear direction given to coal operators as they will be essential in maintaining grid stability in the interim.
Grid Stability	Relies on batteries, synchronous condensers and generators added to the grid to maintain grid stability.	Coal plant turbines are replaced with similar nuclear plant turbines to provide system inertia for the grid.	The Labor plan is untested across a whole network the size of the NEM and requires added elements to maintain stability.
Baseload Electricity	Relies on a large grid of renewables that are phased in and out to match supply with demand.	A minimum of 65% baseload is maintained with coal transitioning to nuclear to maintain a solid based load.	Labor prefers trading in variable renewables, storage and gas firming turbines, on the NEM market, to any reliable baseload.
Nuclear Capacity Factor	The 0.9 factor is too high, as any adjustment to nuclear output would reduce the capacity factor.	The 0.9 factor is verified through international studies. Renewables need their own batteries or gas for stability.	Maintaining a high capacity factor is achieved by locking in fixed baseload contracts (Contracts for Difference).
Household solar systems	Continue the expansion of solar, and household batteries, with subsidies.	Maintain household solar and batteries, but remove subsidies, that distort costs. Also factor in replacement issues for 5 million homes.	A serious problem with excessive solar is peak rooftop solar and utility solar occur at the same time. They supply to much electricity and cause spillage.
Environmental Impacts	Adverse effect of extra 10,000km of transmission lines, wind turbines and solar farms are not addressed.	There is minimal adverse impact under the Coalition proposal, as added land is not required.	Loss of pristine bush is immense under the 100% renewables plan, impacting flora, fauna, and a delicate, natural environment.
Impact on adjacent property owners	No compensation to adjacent owners due to expanded transmission and wind turbines.	Minimal transmission grid changes and wind farms, keeps losses to a minimum.	Government rezoning with no compensation is a cost or loss to effected households. (While legal, it's unethical).
Impacts on dislocated communities in coal fields.	Have proposed $1 billion to Hunter Valley to stimulate solar panel manufacturing.	Coal to nuclear transition supports local communities and provides expansion opportunities through high paying jobs.	The Labor stimulation package seems impractical, as solar panels are made in China (over 80%) with supporting industries, that don't exist in coal towns.

There has been a barrage of negative press in Australia on nuclear energy, particularly following the release of Coalition costings in December 2024. In Table 2 we look at this through the Lense of articles in The Guardian newspaper.

Table 2: Media Commentary by The Guardian

The Guardian Article	Position / claim made against the proposal for incorporating nuclear energy in the article	Clarification of misconceptions about the Coalition nuclear plan and assessment by Frontier Economics
CSIRO Refutes Coalition case that nuclear is cheaper than renewable energy due to operating life (9 Dec 2024)	CSIRO found that renewables and large-scale batteries, were a lower cost than nuclear, based on small modular reactors (SMRs) or First-of-a-kind (FOAK) large scale reactors.	CSIRO failed to assess the most practical and least cost nuclear option to build Nth-of-a-kind (NOAK) nuclear reactors that have a proven track record and manufacturing supply lines. Existing reactor designs can be delivered far more quickly and with greater certainty. Kepco demonstrated this in United Arab Emirates.
The CSIRO pours cold water on the Coalitions' nuclear claims in a new report. Here's how (9 Dec 2024)	The CSIRO explain how they worked out the cost of nuclear power, the time frame for nuclear, power shortages from coal power station closures and capacity factors, the amount of power generated compared to an idealised, maximum possible.	More reliable costings are provided by the International Energy Agency (www.iea.org), who don't have a vested interest in the energy mix in Australia that is highly politicised. The capacity factors for coal, have been undermined by intermittent renewables that are not backed up with storage. Instead, of building batteries, coal is stepped down. Failing to acknowledge this makes CSIRO data unreliable. Nuclear energy should not be assessed as a balancing device for renewables. To avoid this a Contract-for-Difference model is needed, instead of trading on the NEM and being undercut by intermittent solar and wind.
Peter Dutton says nuclear will be cheaper, but critics say Coalition costings a 'Fantasy.' (13 Dec 2024)	Two energy models were provided by AEMO, Labor are proposing the Step Change model, and the Coalition have suggested the Progressive Change model with reduced demand is more appropriate.	Danny Price (Frontier Economics) was not an advocate for either model but carried out costings for comparative purposes. He points out that AEMO is a very poor predictor of demand and the assumption that EV's will make 97% of vehicles isn't supported by consumer data. Also, the national electricity distribution system won't support this projected number of EV's. Hence the Progressive Change model is a more likely predictor of demand but would need refining.
Never mind that the Coalition's nuclear proposal is a fantasy – it doesn't even claim to	The Coalition plan to have a first reactor by 2036 is unrealistic, the CSIRO claim it would take at least 15 years to develop a nuclear plant.	The Guardian and CSIRO seem to think Australia would develop a nuclear plant. We would be using a proven existing reactor design that can be built in 8 to 10 years.

reduce power bills. (14 Dec 2024)		We also have regulatory agencies, the ANSTO team and Nuclear Engineering programs in Australia, largely for overseas students working in the nuclear energy industry in China, India etc. Frontier Economics show that including nuclear energy will lower energy costs and electricity bills, but they are not directly relatable since there are distribution and retailer costs that need to be included in assessing total savings.
The Coalition's nuclear energy plan takes a sharp turn away from a cheaper, cleaner future Simon Holmes a Court (16 Dec 2024)	Issue 1: The Coalition plans for lower household income and the collapse of heavy industry in adopting AEMO Progressive Change model rather than Labor's preferred Step Change model. Issue 2: Frontier appear to have confused the industry term Nth of a Kind (Noak) with next of a kind. Because we are building them. Issue 3: The Coalition's unrealistic schedule leaves us short on power Issue 4: Our grid doesn't have room for these reactors	Issue 1: Both Step Change and Progressive models are 25% cheaper than comparable models by having 38% nuclear, and the gap extends to 44% cheaper if the Progressive Change model is adopted. A grid that includes nuclear will also have far greater opportunities to expand beyond 2050, as it is not constrained by sites that are progressively built out by wind turbines. Issue 2: The NOAK argument is not understood, as it refers to the reactor that has already been designed and operated by a world leading supplier, we will not be designing reactors in Australia. The biggest delays are likely to come from obstructionist activities. Issue 3: By transitioning from C2N there isn't a risk of a power shortage as has been suggested. Power shortages come from intermittent renewables, solar and wind with inadequate storage and gas firming. Issue 4: C2N replacement allows the coal to be switched off and nuclear to be switched on at the same location on the grid. It avoids the need to build the additional 10,000km of transmission lines, that are required under the Labor proposal.
Coalition's nuclear plan will hit earth with 1.7bn extra tonnes of CO2	Experts calculate that Coalition delay to renewables and batteries and implementation of nuclear	The experts fail to address three critical issues: Firstly, the 100% renewables reliance on gas and coal as there isn't a pathway to

before 2050, experts say (17 Dec 2024)	from 2040, would add 1.7bn tonnes of CO2 to the atmosphere.	address storage at present. Secondly, the relative embodies carbon used for renewables, batteries and nuclear including replacement life. Thirdly, the cross over point from 2045 onward when 38% nuclear and 54% renewables emissions are less than 100%renewables, storage and gas firming. Beyond 2050 the advantage of nuclear will extend further, as the 100% renewables plan is very reliant on gas firming.

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