

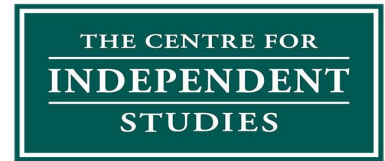
6 November 2025

Ms Anna Collyer

Chair

Australian Energy Market Commission

Submitted via www.aemc.gov.au



(Limited by Guarantee) A.B.N. 15 001 495 012
Level 1, 131 Macquarie St, Sydney NSW 2000
Phone: 61 2 9438 4377 Email: cis@cis.org.au

cis.org.au

RE: Submission to AEMC's Treatment of policies and costs in the ISP Consultation Paper

Dear Ms Collyer,

The Centre for Independent Studies (CIS) welcomes the opportunity to respond to the AEMC's Consultation paper on our proposed rule change, the *National Electricity Amendment (Clarifying the treatment of jurisdictional policies and system costs in the ISP) Rule 2025*.

The CIS is a leading independent public policy think tank in Australia. It has been a strong advocate for free markets and limited government for close to 50 years. The CIS is independent and non-partisan in both its funding and research, does no commissioned research nor takes any government money to support its public policy work.

AEMO's current approach to modelling jurisdictional policies and system costs in the ISP should be altered if it is to protect the long-term interests of consumers and achieve the National Electricity Objective (NEO) in a balanced way. The current approach to jurisdictional does not protect consumers from the risks of premature and over-investment due to AEMO applying every target as a constraint to every scenario. The ISP should consider a range of possible outcomes. It should not assume the success of government policies in all scenarios, nor even that policy commitments will remain the same in the short-term, as has recently been seen with the Queensland government removing its renewables targets. Instead, the ISP should model a broad, distinctive and useful range of scenarios that involve varying levels of policy constraints and reflect likely futures.

AEMO currently excludes the costs of CER, distribution network upgrades and disposal and recycling of solar panels, wind turbines and batteries, as well as excluding indirect emissions. If the ISP is to be a truly whole-of-system plan, AEMO should include these cost categories in its total cost estimates. AEMO should also provide data concerning the cost impact of jurisdictional policies on the ISP model. This will help inform policymakers and consumers about the costs of different policies and promote efficient investment in the NEM.

Yours sincerely,

Aidan Morrison

Director of Energy Program

Centre for Independent Studies

Email: amorrison@cis.org.au

Question 1: What are your views on AEMO's current approach to incorporating jurisdictional targets and policies into the ISP and its alignment with the NEO?

AEMO's current approach to incorporating jurisdictional targets and policies into the ISP does not adequately uphold the long-term interests of consumers as required by the NEO. The NEO provides AEMO with three components that must be balanced: "price, quality, safety, reliability and security of supply of electricity", "the reliability, safety and security of the national electricity system", and the achievement of emissions reduction targets. By creating ISP scenarios that presume all government targets are met, regardless of the cost to consumers, AEMO has placed the emissions reduction target component above the price component, violating AEMO's responsibility to consumers under the NEO.

As detailed in our rule change request, AEMO's current approach does not adequately consider the risk of premature and over-investment as required by NER 5.22.10 (a)(5)(ii). The current approach of binding every scenario to meet every government target, regardless of plausibility of achievement or likelihood of future change, is not necessary to meet the requirements of NER 5.22.3 (b). These requirements to consider government targets and policies can be met by having one scenario constrained by all targets, another constrained by none as a baseline comparison, and one or more constrained by targets assuming delays occur or some less feasible policies are removed, etc.

As Figure 1 demonstrates, the diverse range of scenarios included in the 2020 ISP has been replaced with a narrow range of very similar scenarios in the 2024 ISP.¹ Three of AEMO's criteria for selecting scenarios is that the scenario collection as a whole should be broad (the scenarios explore a diverse range of possible futures that could be achieved over the planning horizon), distinctive (individual scenarios should be distinctive enough to provide value to AEMO and stakeholders) and useful (particularly for AEMO's ISP planning requirements, the scenarios explore the risks of over- and under-investment).² None of these three criteria are being met under the current approach. The 2024 ISP scenario collection clearly does not represent a broad range of distinctive futures, which limits the value it can provide to AEMO and stakeholders, and limits its usefulness in exploring the risk of over- and under-investment.

Without having a range of truly broad, distinctive and useful scenarios to explore likely futures, there is little point in modelling different scenarios in the first place. AEMO must alter its approach if it is to balance NER 5.22.3 (b) and NER 5.22.10 (a)(5)(ii) and, crucially, the price and emissions reduction components of the NEO.

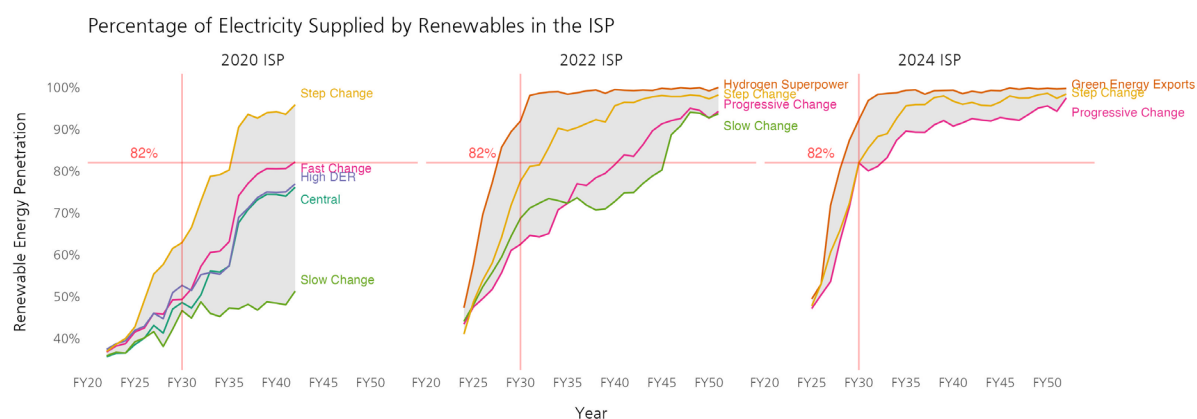


Figure 1. Percentage of electricity supplied by renewables shows less variance across scenarios in successive iterations of the ISP.

Question 2: Do you consider that the current approach increases the risk of overinvestment or early investment in transmission?

The current approach presents a material risk of premature and overinvestment in transmission.

One concrete example where the risk of premature and overinvestment has been directly increased by AEMO's current approach is the HumeLink project. The 2024 ISP, which made the full scope of HumeLink an actionable project, states:

The biggest driver for the need to deliver HumeLink is the inclusion of several policies such as the Powering Australia Plan which targets 82% VRE by 2030 and the modelled carbon budget which further limits coal generation.³

This is despite there being little doubt that Australia will miss the 82% renewables by 2030 target by a substantial margin, as suggested by the Grattan Institute,⁴ Energetics,⁵ Nexa Advisory,⁶ Rystad,⁷ and more recently Professor Ross Garnaut⁸ and UBS⁹. Clean Energy Council data of financially committed generation projects indicate that the rate of new renewables projects being committed to has failed to increase in the past few years, with annual new committed capacity now lower than in 2018.¹⁰ Recently, the Clean Energy Council declared commitments to renewables projects are “well short of the pace required to meet Australia’s 82% renewable energy target by 2030”.¹¹

A major barrier to this target being achieved is workforce capacity. A UTS report commissioned by AEMO found that delivering the 2024 ISP's ODP would require tripling the number of electrical engineers by 2029, alongside a total electricity sector workforce estimated at 200,000–400,000 by 2030.¹² The report warned that the rapid increase in requirements for workers brings a high risk of skill shortages that could impact on the delivery of the ODP and create risks of delays, higher project costs, and increased cost of capital.¹³

AEMO's strict adherence to the virtually unachievable 2030 target has inflated the benefits of HumeLink and will likely result in premature and/or overinvestment in transmission for this and other transmission projects.¹⁴

NER 5.22.10 (a)(5)(ii) should be sufficient to ensure AEMO adequately considers risks to consumers arising from uncertainty, including overinvestment, under-investment, premature or overdue investment. However, AEMO's approach in the 2024 ISP did not meet the requirements

of this clause due to AEMO misinterpreting NER 5.22.3 (b). Instead of interpreting NER 5.22.3 (b) to mean that AEMO must consider government targets in its scenarios, AEMO interpreted this clause to mean it must only consider government targets to the exclusion of any other relevant factors, such as the likelihood of achievement or the cost to consumers from premature and overinvestment.

AEMO's failure to balance the relevant clauses of the NER, and indeed the components of the NEO, through its current approach necessitates a rule change to make AEMO's responsibility to do this even more explicit. The current approach should not have been permitted under the current rules, but given this has been allowed to occur by the AER, a rule change is the only way to ensure consumer interests are protected.

Question 3: Do you consider that the categories of costs included/excluded in the ISP analysis are appropriate? If so, how material is this?

The cost categories included in the ISP are inappropriate for a "whole-of-system plan"¹⁵ that purports to deliver the "lowest cost pathway for secure and reliable energy"¹⁶, as AEMO has described the ISP. AEMO's mischaracterisation of the ISP has led to confusion among policymakers and the public as to what the ISP's cost estimates represent, which has led to the costs of the energy transition being underestimated. This lack of clarity of the full costs of achieving emissions reduction targets in the NEM has had a substantial negative impact on public discourse around Australia's energy policy.

Key cost categories that are excluded by AEMO include consumer energy resources (CER), distribution network upgrades, and recycling and disposal costs for wind turbines, solar panels and batteries.¹⁷ The exclusion of these costs negates any claim to the ISP representing a "whole-of-system" plan or a "lowest cost pathway".

As a result, the ISP has led to misstatements at the highest levels of government. Energy Minister Chris Bowen has portrayed the ISP's annualised capital cost of \$122 billion as the total cost of reaching emissions reduction targets in the electricity sector, despite acknowledging that this figure does not include consumer energy resources:

Today the Energy Market Operator released their latest Integrated Systems [sic] Plan. It has the updated cost — \$122 billion. That's the system-wide non-customer owned cost of renewable energy generation, transmission and storage. If you're asking what's the cost of getting our energy sector, our electricity sector to 82% renewables by 2030 and then net zero by 2050, what we're talking about is that figure in the Australian Energy Market report.¹⁸

This inaccurate portrayal of what the ISP's annualised capital cost figure represents effectively hides the true cost to consumers of the government's policies. For example, we have estimated the ISP's excluded costs of CER alone total around \$360 billion, far exceeding the \$122 billion figure.¹⁹ In order to achieve the levels of rooftop solar and battery uptake relied on by the ISP to reach government targets, consumers must have sufficient financial incentives to invest in these technologies. This necessitates the cost of CER being recouped through other consumers — or taxpayers in the form of subsidies — thereby adding to whole-of-system costs.

The ECMC’s review of the ISP has flagged that treating CER as an “exogenous variable” is “a limitation of the current ISP”, explaining that:

... modelling future CER investments in this way is unlikely to adequately consider the trade-offs between small-scale investments in CER against investments in renewable generation and storage, the wholesale market, distribution networks, and transmission infrastructure. This is problematic from the perspective of the ISP’s ongoing scope as a national transmission plan, but also presents challenges for stakeholders who rely on the ISP to assess energy market conditions. For example:

- policymakers rely extensively on the ISP for jurisdictional planning, such that an analysis of the trade-offs between small-scale CER investments and large-scale energy infrastructure investments may have an impact on the development path for REZs.
- DNSPs and the Australian Energy Regulator (AER) consider the ISP’s projections when assessing the efficient distribution network capital expenditure required to support Australia’s energy transition.²⁰

The ISP must include the cost of CER to represent a truly whole-of-system plan, along with distribution network upgrades and recycling costs.

Another category that should be included is lifecycle (Scope 3) emissions. While not a cost category in and of itself, AEMO’s failure to consider Scope 3 emissions has resulted in emissions arising from the ODP potentially being underestimated by a factor of 12.²¹ The current approach means that emissions reduction targets may not be met in the most cost-effective way for consumers within the ISP model.

Question 4: Is the range of cost information published as part of the ISP sufficient, or do you consider it too limited? If you consider it is too limited, then how material is this problem?

The range of cost information published as part of the ISP is too limited, and this is a significant problem for the ISP providing meaningful information in the long-term interests of consumers. The annualised capital cost of utility-scale generation, storage and transmission does not provide meaningful information on what the plan set out in the ISP will cost consumers, or how these costs compare to other alternatives. This means consumers are left in the dark on how costs compare to the current system and to alternatives, such as existing coal plants closing at the end of their technical life or government renewables targets being missed, moderated or removed. If AEMO was to provide genuine whole-of-system cost estimates which included currently excluded costs — outlined in Question 3 — and allowed comparison between a broader range of plausible scenarios — outlined in Question 1 — this would provide consumers with sufficient information to understand the relative costs of different options. Providing estimates of the costs of all government policies, or at least the policies with the largest impact on the model, would also increase the usefulness of the ISP for policymakers and consumers.

Question 5: What are your views on the role the ISP should play in the development of the energy sector and the way it can best support achievement of the NEO?

This is a high-level question that is best answered as part of the consultation for the AEMC's ISP Review. However, at a minimum, the ISP should seek to balance each component of the NEO, rather than appearing to give greater weight to emissions reduction compared to other factors, such as price, which is AEMO's current approach. As clarified by the energy ministers in the Second Reading Speech of the 2023 *Statutes Amendment (National Energy Laws) (Emissions Reduction Objectives) Bill*:

The emissions reduction component is not intended to sit above, or be prioritised over, any other component within the [national energy] objectives.²²

The current approach to the ISP is prioritising emissions reduction targets above all other components of the NEO, is inconsistent with the stated intent of the legislative change that inserted the emissions reduction component into the NEO in the first place. Enacting the proposed rule change will ensure the ISP pays sufficient attention to the price of electricity and help to achieve the NEO in a balanced way, as intended by the energy ministers.

Question 6: What are your views on the proposed solution to include a 'baseline' scenario and plausible changes in government policy in the ISP?

- 1) *Do you consider that the proponent's proposed solution addresses the identified problem?*
- 2) *Do you have views on how 'plausible changes in future government policy' could be assessed or defined?*
- 3) *What are your views on the alternative solutions noted above in section 3.1.1? Are there other solutions the Commission should consider?*
- 4) *What do you think are the key considerations that the Commission should take into account when assessing potential solutions?*
- 5) *What is AEMO's role, if any, in assessing the deliverability or likelihood of emissions reduction targets being met on time as intended? What impact could a change in AEMO's role have?*

Inclusion of a baseline scenario will provide crucial information to policymakers and consumers on the costs of government policies, which will help guide more efficient investment in the NEM and balance the emissions reduction component of the NEO with the price and other components. Likewise, plausible changes in government policy — specifically, targets being removed or being met later than intended — should be considered in the scenario collection. The recent instruction from the Queensland government to remove renewable energy targets from the targets statement is an excellent example of the kind of change in government policy AEMO should consider in its scenario collection.²³ If AEMO continues to exclude any consideration of policy change, the ISP may risk continuing to promote premature and overinvestment which will harm the long-term interests of consumers.

AEMO employing further sensitivity analyses will do little to address the problems with the current approach to ISP modelling. Sensitivity analyses have little impact on AEMO's decisions

around project actionability compared to the impact of scenario parameters. Limiting consideration of the most likely outcome (e.g., 82% renewables by 2030 target being missed) to a sensitivity analysis while continuing to include an unlikely outcome (e.g., the target being met on time) in every scenario is not an appropriate solution.

Likewise, establishing different approaches for different categories of policies in the ISP is unlikely to solve the identified problems if this means applying certain targets in all scenarios. The fact that a target has a requirement for a proportional budget commitment or regulatory obligation does not mean it will necessarily be achieved. Targets not being achieved on time are often due to factors largely outside government control, such as lack of consumer interest, lack of commercial viability, community opposition and project delays. Simply having a budget or regulatory commitment to a target does not necessarily guarantee its achievement. No targets should be assumed to be achieved in all scenarios — there should be at least one scenario in which targets are not achieved.

AEMO has previously exercised its judgement to assess the likelihood of different scenarios being achieved through its influence on the Delphi Panel process.²⁴ This means AEMO should have the ability to include in the scenario collection, not only targets being met at their intended time, but also one or two (or more) expected dates of delivery. Providing such a range of options will prevent AEMO from being seen as an arbiter of government policy. However, if AEMO is not comfortable with taking on a more explicit role in assessing the deliverability of emissions reduction targets, it can employ an objective approach to scenario design. For example, AEMO may choose to model five scenarios including an unconstrained ‘baseline’ scenario, a fully target-constrained scenario, a scenario in which targets are achieved two years in advance and two scenarios with, say, two- and 10-year delays to targets being achieved. Virtually any consideration of scenarios that are not fully constrained by government targets will have a positive impact on ensuring the scenario collection is sufficiently broad, distinctive and useful.

Question 7: Should additional cost categories be included in the ISP?

- 1) *Do you consider the proponent’s proposed solution to expand the categories of costs considered in the ISP addresses the identified problem?*
- 2) *Do you consider that there are any costs that should be added to the ISP analysis? If yes, what are these costs, why should they be added, and what is the materiality?*
- 3) *If additional categories of costs are included, are there any related benefits that would not be captured and should be included? For example, distribution network upgrades would increase costs but could also have corresponding benefits such as increased CER export capacity and potential emissions reduction.*

Please refer to the answers to Question 3.

The related benefits of excluded cost categories are already included in the ISP model, i.e., it is only the costs that have been excluded. For example, the benefits of distribution network upgrades are already captured in ISP modelling. The current approach takes upgrades as a given and assumes distribution networks can handle a large increase in CER exports, which are used to help meet the carbon constraints in the model. There is no risk of benefits not being captured by the model if the relevant excluded cost categories were to be included.

Question 8: Should AEMO publish additional information on policy costs as part of the ISP?

AEMO should publish information on individual policy costs or, failing this, the costs of a fully constrained scenario compared to an unconstrained scenario. This will help promote good policy choices by policymakers and make clear to consumers how the NEO is being balanced in terms of price and the achievement of emissions reduction targets.

Question 9: What are the key costs and benefits of the proposal and alternatives?

- 1) *Do you agree with the costs and benefits identified by the proponent?*
- 2) *Are there other relevant costs and benefits that should be considered?*
- 3) *Are stakeholders able to provide quantification or other supporting evidence as to the scale of the various costs and benefits of the options under consideration?*

The relatively small increase in modelling and data collection costs that may arise from this rule change is dwarfed by the benefits to consumers of efficient outcomes in transmission planning. In making decisions about the optimal pathway for the energy transition, hundreds of billions of dollars are at stake. Given the scale of investment involved, even modest inefficiencies in planning, which include premature and overinvestment, could result in significant additional costs for consumers. Even if addressing the flaws in AEMO's current approach to ISP modelling results in additional modelling costs of several million dollars, this would still represent overwhelmingly a net benefit to consumers.

Question 10: What are the key implementation considerations?

AEMO would be required to model additional scenarios to enact this change to the ISP Methodology. For the 2020 ISP, AEMO modelled five diverse scenarios, so increasing the number of scenarios from three back to five should not prove too onerous. The ISP model already includes a 'shadow carbon price' as an output, so calculating the cost impact of individual government policies (particularly those with the greatest impact on cost) should not dramatically increase the amount of modelling required. However, if this proves too difficult, comparing the whole-of-system costs of the ODP in the baseline scenario to the ODP in the fully target-constrained scenario will provide an estimate of the cost impact of government policies without greatly increasing modelling requirements.

Cost estimate data for CER already exists in the CSIRO's GenCost report and other industry sources, so estimating CER costs should be a straightforward calculation. AEMO is already consulting with DNSPs to include more information about distribution network options in future ISPs, so cost information and modelling of distribution networks can be shared through this avenue. Disposal and recycling cost estimates should also be readily available from industry and governments as increasing amounts of solar panels, wind turbines and batteries reach the end of their lives.

Question 11: Assessment framework

Do you agree with the proposed assessment criteria? Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

The most important assessment criterion which has been excluded from the proposed set is ‘Outcomes for consumers’. The key reason why the ISP methodology should be changed is that the current approach does not adequately protect consumers from the risk of premature and overinvestment. Therefore, this criterion should be taken into consideration by the AEMC.

¹ Morrison, Aidan. 2024. ‘Submission to Select Committee on Energy Planning and Regulation in Australia regarding Government Policy in the Integrated System Plan’. <https://www.cis.org.au/wp-content/uploads/2025/09/CIS-Submission-to-Senate-Inquiry-re-Government-Policy-in-the-ISP.pdf>.

² AEMO. 2024. ‘2025 IASR Scenarios’. https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/consultation-paper.pdf.

³ AEMO. 2024. ‘2024 ISP: Appendix 6 Cost Benefit Analysis’. p 61. <https://www.aemo.com.au/-/media/files/major-publications/isp/2024/appendices/a6-cost-benefit-analysis.pdf>.

⁴ Yan, Richard. 2024. ‘Now comes the hard part of the great energy transition’. *Grattan Institute*. <https://grattan.edu.au/news/now-comes-the-hard-part-of-the-energy-transition/>.

⁵ Energetics. 2024. ‘Why Australia is not on track to achieve a 43% emissions reduction by 2030’. <https://www.energetics.com.au/insights/thought-leadership/why-australia-is-not-on-track-to-achieve-a-43-emissions-reduction-by-2030>.

⁶ Mercer, Daniel. 2023. ‘Australia will fall well short of 82 per cent renewable energy by 2030, analysts predict, as problems mount’. *ABC*. <https://www.abc.net.au/news/2023-08-06/australia-likely-to-fall-short-of-82pc-renewable-energy-target/102689392>.

⁷ Cropp, Ryan. 2025. ‘Renewables rollout running seven years late, PM told’. *Australian Financial Review*. <https://www.afr.com/policy/energy-and-climate/renewables-rollout-running-seven-years-late-pm-told-20250829-p5mq8>.

⁸ Kelly, Paul. 2025. ‘Labor’s energy target all miss and wind as turbine construction slumps’. *The Australian*. <https://www.theaustralian.com.au/nation/politics/turbine-construction-slump-labors-energy-target-all-miss-and-wind/news-story/96909d29b83b5aa80287b46c6cff6c0c>.

⁹ Rolfe, John. 2025. ‘Analysts reveal shock forecast for Australia’s biggest power station Eraring’. *Daily Telegraph*. <https://www.dailytelegraph.com.au/news/national/analysts-reveal-shock-forecast-for-australias-biggest-power-station-eraring/news-story/9c5cfd6768d6c7caa58bee3ad4e7d903>.

¹⁰ Clean Energy Council. 2025. ‘Quarterly investment report: Large-scale renewable generation and storage’. p 11. https://cleanenergycouncil.org.au/getmedia/8f050d63-3955-483a-8934-8fd8b0cfd4f7/cec_renewable-projects-quarterly-report_q1-2025.pdf; Clean Energy Council. 2022. ‘Renewable Projects Quarterly Report’. p 4. <https://cleanenergycouncil.org.au/cec/media/background/resources/cec-renewable-projects-quarterly-report-q4-2022.pdf>.

¹¹ Clean Energy Council. 2025. ‘Quarterly investment report: Large-scale renewable generation and storage’. p 5. https://cleanenergycouncil.org.au/getmedia/258ddf47-4d31-4c80-bea4-f602584ed585/q2-2025_clean-energy-council_quarterly-investment-report.pdf.

¹² Rutovitz, Jay, Elianor Gerrard, Helen Lara, and Chris Briggs. 2024. ‘The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050’. *RACE for 2030*. <https://racefor2030.com.au/project/australian-electricity-workforce-for-the-2024-integrated-system-plan/>.

¹³ Ibid., p. 3.

¹⁴ Morrison, Aidan. 2024. ‘Submission to Select Committee on Energy Planning and Regulation in Australia regarding HumeLink’. *Centre for Independent Studies*. <https://www.cis.org.au/publication/submission-to-select-committee-on-energy-planning-and-regulation-in-australia/>.

¹⁵ AEMO. 2025. ‘Integrated System Plan (ISP)’. <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/integrated-system-plan-isp>.

¹⁶ AEMO. 2023. ‘Updated energy plan reiterates the need for urgent delivery’. <https://www.aemo.com.au/newsroom/media-release/updated-energy-plan-reiterates-the-need-for-urgent-delivery>.

¹⁷ Hilton, Zoe, Aidan Morrison, Alex Bainton & Michael Wu. 2024. 'The six fundamental flaws underpinning the energy transition'. <https://www.cis.org.au/publication/the-six-fundamental-flaws-underpinning-the-energy-transition/>.

¹⁸ Bowen, Chris. 2024. 'Politics with Michelle Grattan: Chris Bowen on 'calling out' claims about the energy transition's cost'. *The Conversation*. <https://theconversation.com/politics-with-michelle-grattan-chris-bowen-on-calling-out-claims-about-the-energy-transitions-cost-233357>.

¹⁹ Ibid.

²⁰ Energy and Climate Change Ministerial Council. 2024. 'Review of the Integrated System Plan: Final Report'. <https://www.aph.gov.au/DocumentStore.ashx?id=5a846e04-13ff-4216-aa90-3bbe1a6a0f5d>.

²¹ Hilton, Zoe, Aidan Morrison, Alex Bainton & Michael Wu. 2024. 'The six fundamental flaws underpinning the energy transition'. <https://www.cis.org.au/publication/the-six-fundamental-flaws-underpinning-the-energy-transition/>.

²² Hansard, South Australian Legislative Council, 31 August 2023, p 3545. <https://hansardsearch.parliament.sa.gov.au/daily/uh/2023-08-31/pdf/download>.

²³ Janetzki, David. 2025. 'Ministerial directions 8 June 2025'. <https://www.aemc.gov.au/sites/default/files/2025-06/Ministerial%20directions%208%20June%202025.pdf>.

²⁴ Hilton, Zoe, Aidan Morrison, Alex Bainton & Michael Wu. 2024. 'The six fundamental flaws underpinning the energy transition'. Section: 'Lack of a neutral baseline scenario in the ISP'. <https://www.cis.org.au/publication/the-six-fundamental-flaws-underpinning-the-energy-transition/>.