

11 February 2025

Mr Daniel Westerman
CEO
Australian Energy Market Operator

Submitted via: forecasting.planning@aemo.com.au

Dear Mr Westerman,

Draft 2025 Inputs, Assumptions and Scenarios Report Stage 1 submission

Nexa Advisory welcomes the opportunity to share our views and insights on AEMO's Draft 2025 Inputs, Assumptions and Scenarios Report (IASR) Stage 1.

Nexa is an advisory firm with an unwavering focus to accelerate the clean energy transition in a way that provides secure, reliable, and affordable power for consumers of all types. Nexa Advisory is a team of experienced specialists in the energy market, policy and regulation design, stakeholder engagement, and advocacy. We work with public and private clients including renewable energy developers, investors and climate impact philanthropists to help them get Australia's clean energy transition done.

The Integrated System Plan (ISP) remains a critical planning and system design roadmap for the National Electricity Market (NEM) and a vital tool which informs investors, policy makers and broader industry as we progress Australia's clean energy transition. However, given recent contention around this roadmap, there is a clear need for AEMO to improve the robustness of its modelling to deliver a high conviction forward view of the energy system and ensure the lowest-cost pathway to achieve this. These concerns were exemplified during the recent Select Committee¹ through questions around the robustness of the current approach, including whether CER investments included in the ISP were realistic, or if they would require government support (e.g., battery subsidies) to be realised.

Additionally, without clear and robust inputs and assumptions around key near-term investment risks – including coal closure and on-time delivery of large energy infrastructure such as transmission and pumped hydro energy storage (PHES) – this roadmap is unlikely to be achieved. This will result in underinvestment in renewable energy and firming capacity, risking energy system reliability and affordability and resulting in knee-jerk policy interventions which further knock Australia's energy transition off course.

It is critical that AEMO upholds the purpose of the ISP as a planning document, rather than to inform or set policy. This reflects the importance of AEMO remaining independent within its

¹ [Select Committee on Energy Planning and Regulation in Australia – Parliament of Australia](#)

system planning and operation roles, and policies of the state or federal governments being informed by their own cost-benefit assessments.

However, it has become clear that more robust assessment of future states of the world is needed in the ISP – through its Methodology², scenarios, and inputs and assumptions. Nexa has extensively discussed the weaknesses in the current energy system planning frameworks which have resulted in a future energy system which we plan and then don't build³. As such, we encourage AEMO to better reflect the investment risks and root causes of associated delays to delivering the ISP's Optimal Development Pathway (ODP) on time – namely the uncertainty around coal closures, as well as large energy infrastructure projects such as transmission and PHES.

We note that a key recommendation of the Energy and Climate Change Ministerial Council (ECMC) Review of the Integrated System Plan⁴ was for deeper analysis of coal-fired generation shutdown scenarios, by exploring alternative shutdown timings in sensitivities and including this “more prominently as part of the ISP narrative”.

As such, AEMO should explicitly model on-time coal closure to provide market confidence. This should be reflected as part of the key narrative of specific scenarios – such as *Step Change and/or Green Energy* – or, at a minimum, as a sensitivity to inform the ODP. This will be critical to highlight the cost of continued coal retirement delays to the transition, and the necessary investment in large-scale generation, storage and transmission needed to replace this capacity. This would progress AEMO's current positioning around the risk of early coal retirements as discussed in the 2024 ISP⁵, providing a more holistic view of the risks associated with uncertainty around coal retirement.

Additionally, AEMO should acknowledge and quantify the risks associated with continued delays to transmission and PHES projects – namely Snowy 2.0, which has faced consistent construction challenges as recently as last month⁶. It is critical that AEMO improve the robustness of the ISP and provide clarity on the impacts of these delays for electricity adequacy, reliability and affordability.

The remainder of this submission highlights key inputs and assumptions included in the Stage 1 Draft Report which we consider must be held to greater scrutiny.

AEMO must consider the interaction between inputs and assumptions, and improvements to Methodology – namely the improved consideration of demand-side factors

The rapid uptake of CER is seeing consumers becoming increasingly involved in electricity system. This has prompted detailed assessment of many elements of CER, including pricing and the role of networks by the AEMC⁷, and more recently, as part of the Select Committee on

² As highlighted in the recent ISP Methodology consultation and [Nexa submission](#)

³ Nexa Advisory, [We Plan and then Don't Build](#), May 2024

⁴ Energy and Climate Change Ministerial Council, [Response to the Review of the Integrated System Plan](#), April 2024

⁵ Section 4.1 of the 2024 ISP

⁶ ABC News, [Work on Snowy 2.0 tunnels stopped after 'refuge chambers' concerns](#), 28 Jan 2025

⁷ AEMC, [The pricing review: Electricity pricing for a consumer-driven future](#), November 2024

Energy Planning and Regulation in Australia⁸. As pricing becomes more dynamic and cost-reflective, this will see consumers become increasingly responsive to wholesale electricity prices. It is time for AEMO to recognise and incorporate this shift within system planning.

We have previously discussed^{9,10} that there is growing concern around AEMO's current approach of including Consumer Energy Resources (CER) projections, despite these being developed by reputable providers such as the Commonwealth Scientific and Industrial Organisation (CSIRO) and Green Energy Markets (GEM) and broadly consulted on as part of the ISP consultation process. These concerns were exemplified during the recent Select Committee through questions around the robustness of the current approach, including whether CER investments included in the ISP were realistic, or if they would require government support (e.g., battery subsidies) to be realised.

Noting AEMO's awareness of this scrutiny, we are concerned by the shifted weightings of these CER forecasts between the 2023 IASR and current Draft 2025 IASR – namely more conservative rooftop PV, battery and VPP forecast weightings as described in Section 3.3.7 of the Draft Report.

It is also important to consider the 'second-order' drivers of CER uptake, which we consider the current methodology does not allow for. This would reflect the response of consumers to broader developments across the energy system.

For example, CER may see greater uptake if there are continued coal outages and increased public perception around the unreliability of existing coal-fired power stations, resulting in greater investment in household solar and batteries to provide 'backup' in case of outages¹¹, as well as large commercial and industrial (C&I) loads – including data centres – which carefully consider reliability as part of their commercial decisions around grid connection vs behind-the-meter self-generation. The flow-on effects of this consumer behaviour ultimately also be reflected through decreased operational demand.

We encourage AEMO to further explore this dynamic as part of ongoing engagement with large industrial loads and data centre stakeholders as part of its electricity demand forecasting.

While this is a reflection on the ISP Methodology and the benefits of co-optimising for demand-side factors, we consider this – at a minimum - provides relevant justification against the use of more conservative weightings between CER forecasts.

AEMO must not downplay the role of outages for coal-fired generators as they approach end of life

⁸ [The Senate Select Committee on Energy Planning and Regulation in Australia Final Report](#), December 2024

⁹ Nexa Advisory, [ISP Methodology Issues Paper submission](#), November 2024

¹⁰ Nexa Advisory, [Improving consideration of demand side factors in the ISP draft determination submission](#), November 2024

¹¹ We note this was the third most common motivation to purchase battery storage in the Queensland Household Energy Survey 2024 conducted by Powerlink.

Outages of coal-fired power stations – particularly unplanned – drive higher market volatility, which results in higher contract prices¹². These prices ultimately flow through to retail contracts and impact the retail price of electricity paid by consumers.

As coal unavailability becomes increasingly prevalent in market dynamics¹³, it is becoming more evident that this generation source is challenging the ability to provide reliable, secure and affordable electricity to consumers.

We agree with the underlying methodology, inputs and assumptions described in Section 3.4.3 if coal-fired power stations are closed on time. However, as generators approach the end of their technical life, it is likely that outage rates – particularly unplanned – will increase. This risk will likely be compounded further if coal-fired power stations are not closed on time.

As such, there is an inherent link between outage assumptions and the timing of coal-fired generator retirement.

AEMO should therefore determine whether a ‘near-end-of-life’ premium should be added to the outage rate to reflect these ageing generators. This is directly relevant for coal-fired generators given the significant commercial implications of unplanned outages for these assets, as well as for the broader system – as an investment signal for new firming renewable generation.

We consider this would also align with the ECMC’s recommendation to better explore coal closure, discussed above.

Thank you for the opportunity to provide input to the Draft Report. We welcome the opportunity to further discuss any aspect of our report or submission - please contact either myself or Jordan Ferrari, Director - Policy and Analysis, jordanferrari@nexaadvisory.com.au.

Yours Sincerely,

Stephanie Bashir
CEO and Principal
Nexa Advisory

¹² AER, [Wholesale electricity market performance report 2024](#), December 2024

¹³ AEMO, [Quarterly Energy Dynamics Q4 2024](#), January 2025