13 February 2026

Mr Daniel Westerman
CEO
Australian Energy Market Operator

Submitted via: ISP@aemo.com.au

Dear Mr Westerman,

Submission to Draft 2026 Integrated System Plan

Nexa Advisory welcomes the opportunity to provide input on AEMO's Draft 2026 Integrated System Plan (Draft ISP).

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.

We have provided prior input across AEMO's system planning consultations, including the ISP Methodology, Inputs Assumptions and Scenarios Report (IASR), Electricity Network Options Report (ENOR), and demand-side factors (DSF) reforms. In those submissions, Nexa has consistently advocated for:

- a stronger, more explicit focus on transmission deliverability - including the gap between the modelled Optimal Development Path (ODP) and what can realistically be built on time and on budget, including the consumer costs of delays;
- stronger identification and assessment pathways for non-network options (NNOs) and market-led alternatives; and
- deeper integration of distribution and demand-side factors, progressing toward integrated distribution system planning and co-optimisation of CER, flexibility and network investment within the ISP.

The Draft ISP reinforces that a least-cost transition relies on a large build of renewable generation, storage, and transmission and distribution investment. We note AEMO estimates the annualised capital cost of all future utility-scale generation, storage and transmission and distribution infrastructure in the ODP have a present value of $128 billion, including around 6,000 km of additional transmission. The Draft ISP also indicates that actionable (and future) transmission projects can deliver material consumer benefits relative to their investment costs – outlining that these projects would repay their investment costs of around $9 billion and deliver $24 billion in net market benefits for consumers (shown below).

	Net market benefits ($b, as reported)	Transmission scope (km)	Transmission capital cost ($b)
Final 2022 ISP	28	~10,000	12.7
Final 2024 ISP	22	~10,000	16
Draft 2026 ISP	24	~6,000	9

We note that the ISP's headline transmission build, transmission capex and net market benefits have moved materially between editions. This volatility reinforces that while the ISP is an important planning framework, it is increasingly challenged as a stable 'roadmap' for investors and policy makers. In this context, AEMO should ensure its scenario set keeps pace with rapidly changing market and delivery conditions, including by explicitly modelling a credible "status quo / slow build" counterfactual (delayed transmission, extended coal operation and slower clean energy build-out) and presenting the consumer and reliability costs relative to *Step Change* and other scenarios.

We plan and then don't build

Nexa supports the ISP's role as the NEM's principal whole-of-system planning framework. However, a recurring challenge across successive ISP cycles is the widening gap between what is planned and what is delivered on time and on budget. This "plan vs build" implementation gap is not a critique of the ISP's modelling ambition; it is a reflection that the transition now requires an implementation discipline that sits alongside the ISP. A least-cost plan on paper will not translate into least-cost outcomes for consumers if delivery falters, sequencing slips or substitute pathways are not developed early.

We recognise that it is not AEMO's role to inform government policy or implement the ISP. However, given the scale of the delivery challenge and its first-order impact on consumer outcomes, Nexa recommends governments and market bodies progress a National Implementation Plan that complements the ISP and aligns targets with actionable, accountable steps.

Key asks

Nexa broadly supports the Draft ISP direction of travel, but recommends AEMO should strengthen four areas to improve the credibility and deliverability of the ODP, namely:

1. **Transmission deliverability and genuine non-network options (NNOs) -** including explicit delivery pathways for actionable projects and earlier/stronger integration of credible, market-led alternatives (including "virtual transmission" and other NNOs).
2. **Coal reliability and end-of-life outage modelling** - ensuring the ISP's modelled scenarios reflect increasing unplanned outages of ageing coal assets.

3. **Distribution and demand-side factors** – further progressing the methodological updates already undertaken toward integrated distribution system planning and deeper co-optimisation of distribution/CER and transmission within the ISP.

4. **The cost of gas as reliability 'insurance'** – transparently test non-gas alternatives for rare-event reliability, and more clearly outline the cost of additional gas build required as a result of delays to renewable generation, storage and transmission.

The remainder of this submission provides further feedback on the Draft 2026 ISP and details how the current and future ISP iterations should better incorporate these areas.

Transmission deliverability

AEMO's Draft ISP recognises that delivery risk is material and has materially worsened since the 2024 ISP. In this ISP and associated ENOR, AEMO reports higher transmission and generation costs driven by sustained supply chain pressures on materials, equipment and workforce, heightened competition from many concurrent projects, project complexity, social licence, scope revisions and additional contracting costs.

Beyond aggregate cost pressures, the timing of cornerstone ISP transmission projects has drifted materially from original estimates. Shown below, indicative completion years illustrate that multi-year slippage is no longer isolated – but have become systemic across ISP iterations.

Project	First delivery date	First identified	Draft 2026 proponent timing (in-service)	Draft 2026 proponent timing (full capacity)	Indicative slippage (years)
Project EnergyConnect	2025	2016	Oct 2026	Nov 2027	~1 (in-service); 2 (full)
HumeLink	2025	2018	Dec 2027	Dec 2027	~2
Central-West Orana REZ Network Infrastructure Project	2025	2020	Dec 2028	Dec 2028	~3
Victoria–NSW Interconnector West (VNI West)	2024	2015	Nov 2030	Nov 2031	~6 (in-service); ~7 (full)
Western Renewables Link	2023	2016	Nov 2029	Nov 2029	~6
Project Marinus (Stage 1)	2025	2016	Jun 2030	Dec 2030	~5

This supports AEMO elevating the 'cost of the downside' (e.g., *Constrained Delivery*) to a more prominent, quantified output of the ISP, including the incremental consumer costs and reliability/emissions impacts of under-delivery relative to the ODP.

Constrained delivery sensitivity

Nexa supports AEMO strengthening deliverability analysis and welcomes the explicit consideration of the *Constrained Delivery* sensitivity. In this sensitivity, renewables supply reaches around 75% of NEM energy by 2030 (missing the 2030 renewable target), with grid-scale solar around 25 GW by 2030 (vs 32 GW in Step Change), and coal remaining in the system longer - heightening exposure to end-of-life reliability risks and ultimately increasing consumer costs. Nexa agrees this underscores the need to progress actionable projects urgently to mitigate delivery risk and keep the transition least-cost for consumers.

However, we recommend that AEMO further explore constrained deliverability – beyond just representing this through cost blow-outs and delays to transmission options.

It should also drive a more serious consideration of alternative delivery pathways, including non-network and market-led solutions (including large-scale batteries as 'virtual transmission', and private/market-led intra-regional network solutions).

Stronger consideration for NNOs

We have previously discussed that virtual transmission options and market-led intraregional proposals, which offer faster, lower-risk pathways to unlocking hosting capacity remain sidelined. AEMO's treatment of these options is largely consultative and conceptual, rather than collaborative and embedded within scenario modelling.

The Draft ISP demonstrates the under-utilisation of NNOs most clearly in that AEMO has only explicitly called for one actionable NNO project as part of this consultation cycle (Switching Station Near Wondalga). The NNO guidance outlines what it is seeking as alternatives or complements to augmentation through this project, including:

- local generation, load reductions and/or energy storage within Central New South Wales and Sydney/Newcastle/Wollongong to meet the identified need (in addition to network augmentation);
- an explicit linkage to the relevant network constraint context (including that periods of high Southern New South Wales generation / imports and pumped hydro output can be constrained by the HumeLink transfer capacity), which provides "opportunities for strategically placed battery storage and/or local generation" to defer or reduce the scale of proposed network augmentation near Wondalga.
- a clear statement that any new credible NNOs received must be considered in the RIT-T for this actionable ISP project, and an open invitation for all non-network service providers to propose solutions.

While this is a helpful, cost-effective alternative to transmission network investment, Nexa's view is that the Draft ISP currently does not adequately explore NNOs. The Draft ISP notes that Switching Station Near Wondalga is the additional smaller project proposed to become actionable in this iteration, alongside larger future projects proposed to become actionable. Nexa encourages AEMO to identify a stronger pipeline of NNO opportunities beyond isolated

examples – both as part of joint system planning with Network Service Providers (NSPs), and throughout the ENOR and ISP processes to outline credible NNO alternatives.

We urge AEMO to incorporate credible, market-led non-network proposals into the ISP on equal footing with traditional augmentation pathways - and develop a clear methodology for assessing their viability, capacity value and speed-to-deployment in system planning.

Coal unreliability and end-of-life outage modelling

Nexa has consistently raised that coal reliability deteriorates as plants age, and that unplanned outages are a key driver of market volatility and consumer cost outcomes. Uncertainty around the retirement of coal-fired power stations erodes the confidence of investors and developers in new energy resources and therefore poses a significant risk to an orderly energy transition.

This Draft ISP places sharper emphasis on coal unreliability than prior ISP iterations by explicitly documenting recent evidence of increasing forced outages and sustained unavailability events. For example, AEMO highlights that reliability risks were exposed in June 2022, when 3.5 GW of coal-fired generation was out of service for sustained periods (around 15% of NEM coal capacity), and notes that New South Wales black coal units were in full forced outage 7% of the time in 2011, rising to 17% in 2020.

Nexa supports these callouts and reiterates that as units approach end of life, forced outage rates are likely to increase and may be compounded where closure is delayed – as under the *Constrained Delivery* sensitivity.

Accordingly, Nexa recommends AEMO consider whether a near-end-of-life premium should be added to outage rates and apply this transparently in ISP modelling.

Distribution and demand-side factors – toward integrated distribution system planning and co-optimisation

Nexa strongly supports the direction of travel toward Integrated Distribution System Planning (IDSP) - integrating distribution, CER and broader demand-side factors into whole-of-system planning. Nexa has consistently advocated that the ISP should evolve from treating distributed resources as exogenous inputs toward an integrated framework where distribution hosting capability, CER export limits, flexibility services and network investment are jointly optimised alongside transmission and utility-scale supply. This is increasingly essential as distributed energy becomes a material driver of both peak demand outcomes and locational network constraints, and as jurisdictional and market reforms progressively push operational and planning decisions toward the distribution network.

Nexa also reiterates that credible consideration of distribution network and demand-side requires greater transparency over distribution augmentation options, constraints and hosting capacity so market participants can respond efficiently (including through third-party flexibility and NNO offerings).

In particular, improved transparency is needed to support third-party CER and flexibility providers to make efficient investment and locational decisions (including where to target connections, export capability and enabling works) across the distribution network, and to ensure ISP outputs can be validated and used by DNSPs and jurisdictional planners.

As such, Nexa encourages AEMO to continue to incorporate demand-side factors and distribution development opportunities into the ISP. This should advance AEMO's DSF work which provides a practical foundation to:

- explicitly identifying distribution network development opportunities (e.g. voltage management/enabling works) as part of the whole-of-system solution set;
- represent distribution hosting capability and the trade-offs between distribution investment, NNOs and transmission/utility-scale alternatives; and
- link CER export capability and distribution development decisions to system-wide least-cost outcomes.

In practical terms, improved transparency should move beyond general statements of opportunity to a minimum consistent dataset that enables third-party CER and flexibility providers to identify where they can relieve constraints or reduce augmentation at lowest cost.

Nexa recommends AEMO (working with NSPs) progressively standardise and publish this information (at a level that is actionable for investors and aggregators), including hosting capacity and export limits, feeder/zone constraint drivers (including when/why they bind), the forward program of distribution enabling works (including voltage management and connection-enablement upgrades as modelled through demand-side factors), and consistent assumptions on CER export capability and operating envelopes. This is a necessary foundation for genuine integrated distribution system planning, and it will materially improve the ISP's ability to capture market-led and distribution-led alternatives to traditional augmentation.

We encourage AEMO to continue to work towards an explicit co-optimised methodology where distribution investments, flexibility and NNOs are treated as competing pathways to meet reliability and locational network needs.

Alternatives to low-utilisation gas

Nexa acknowledges the Draft 2026 ISP continues to assign a limited role to flexible gas capability to manage infrequent reliability and system security risks through the transition. However, this should not be interpreted as a case for broad-scale investment in new gas generation or major new gas network expansion. Rather, the Draft 2026 ISP underscores that gas is transitioning toward an 'insurance' resource: rarely dispatched, high-criticality capacity used mainly during renewable lulls and winter peaks.

This 'insurance' framing is supported by AEMO's own outputs. Under the proposed ODP, AEMO projects the NEM will require 14 GW of flexible gas-powered generation by 2050. This is broadly similar to the 2024 ISP's 15 GW (and above the 2022 ISP's ~10 GW), but importantly AEMO also notes utilisation is expected to be very low - a typical gas plant may generate only ~7% of its annual potential. On AEMO's numbers, most of today's gas fleet retires over the period, meaning the system may need substantial gross replacement build (order-of-magnitude ~11 GW of new build to replace retiring plant and reach the 14 GW total), despite only modest net growth in nameplate capacity.

This raises a sharper question for the ISP: is maintaining (or expanding) high fixed-cost gas supply and generation capability for rare dispatch events the most efficient pathway, or can

alternative portfolios deliver equivalent reliability outcomes at lower whole-of-system cost and lower emissions/stranded-asset risk?

Nexa's recent work on the role of gas reached a consistent conclusion to the Draft ISP: gas retains a targeted but limited 'back-up' role, with very low utilisation[1]. However, we found that the quantum of gas capacity build in the 2020s is primarily a function of delivery risk; where major storage, transmission and interconnectors are delayed, new gas build is required immediately, and peak gas capacity requirements increase to meet reliability between 2027–2032.

Conversely, where credible alternatives are delivered now - particularly measures that accelerate renewable hosting capacity - including intra-regional solutions such as non-network/virtual transmission and faster network augmentations - our modelling shows the need for additional gas declines materially, avoiding ~1.8–2.8 GW of extra gas plant otherwise required under delay pathways.

We note AEMO has recently updated their approach to the ISP to better consider gas system integration by modelling gas development projections. AEMO also highlights that "the commercial viability of investments that primarily support generation is largely untested" and notes that alternatives that do not require gas infrastructure investment (e.g. long-duration storage) may be more efficient in some circumstances, provided they deliver equivalent reliability outcomes. AEMO has further explained that it:

> *has used a sensitivity analysis in this Draft 2026 ISP to explore a future in which this additional investment is not made. In that case, similar levels of gas-fired generation capacity would still form part of the ODP. However, individual power plants may need on-site storage or the capability to use secondary fuels (such as diesel) to support their operation if gas supply were constrained.*

Nexa encourages AEMO to provide clearer transparency and stress-testing of these gas options (including costing of on-site measures), as well as explicit costing of the reliability 'insurance' value (e.g., fixed costs, fuel logistics and secondary fuel/storage requirements). This would allow clearer comparison to non-gas alternatives, such as long-duration storage, alternative transmission projects (i.e., virtual transmission), and demand response / procured reliability services.

Nexa appreciates AEMO's ongoing work to strengthen the ISP and its supporting consultation materials. We welcome the opportunity to further discuss any aspect of our 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

---

[1] Nexa Advisory, Gas-fired Electricity Generation is a Bridge, Not a Destination, Oct 2025