

13 February 2026

Australian Energy Market Operator (AEMO)

Submitted via email (ISP@aemo.com.au)

Dear AEMO ISP Team,

Draft 2026 Integrated System Plan (ISP) Consultation

Hydro Tasmania appreciates the opportunity to respond to the Australian Energy Market Operator's (AEMO) *Draft 2026 Integrated System Plan (ISP) for the National Electricity Market (NEM)*. The ISP is a key information source for NEM participants. We support AEMO's continued strong stakeholder outreach, and the depth and transparency of consultation involved in each ISP.

Our submission focuses on the following areas:

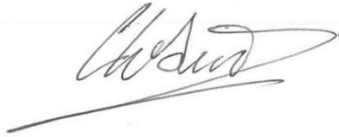
1. Optimal Development Path (ODP) and findings on generation/storage investment;
2. Storage durations - how these are modelled and the interaction with market settings;
3. The role of hydropower;
4. Assumptions on Tasmanian demand;
5. Commerciality of new build;
6. Constrained delivery sensitivity analysis; and
7. Development of the Energy Services Entry Mechanism (ESEM).

These are discussed in Attachment A.

Responses to the Draft ISP's consultation questions is addressed as Attachment B.

Hydro Tasmania looks forward to engaging further with AEMO as the ISP is finalised. If you wish to discuss any of this submission in more detail, please contact Colin Wain at colin.wain@hydro.com.au.

Yours sincerely,



Colin Wain
Manager Policy Development

ATTACHMENT A – Hydro Tasmania response to the Draft 2026 Integrated System Plan (ISP)

1. Optimal Development Path (ODP) and findings on generation/storage investment

As Hydro Tasmania understands it, the primary role of the ISP is to identify specific transmission investments, labelled as the Optimal Development path (ODP), that are robust under a range of plausible futures. While development of specific generation or storage projects are not directly 'actionable' through the ISP, its modelling outcomes carry significant influence and increasingly shape policy, regulatory and investment expectations. It is therefore important that generation and storage outputs are clearly framed as indicative system needs rather than prescriptive outcomes.

While we believe there is significant value in the ISP outlining the broad supply needs in the future NEM, including quantities and types of technologies (see point 2 below), this should be weighed against the risk of selection of particular projects/technologies over others (picking winners).

- One example of this is the ISP's modelled build out of REZ which may not match developer interest or sometimes local TNSP views on network constraints and hosting.
- A second example is the ISP's findings and narrative that there is a compelling need for deep storage which contrasts with the modelling outcome that no new pumped hydro investment is needed beyond currently 'committed projects'.

Such results are influenced by several factors, including technology cost assumptions, which change over time. The 2025 IASR assumes much higher pumped hydro costs than previous ISPs, and the latest CSIRO numbers have revised these down again. Under another set of assumptions, or delays to deployment of key technologies, the future capacity mix would be different.

Modelled outcomes also typically exhibit orchestration of investment, however, developers may hold different risk perspectives or views on the timing and likelihood of individual projects. This is not intended to criticise the validity or usefulness of the ISP, but instead highlights that the ISP's intended purpose must be to inform and provide actionable network investments (robust to a range of generation and storage investments and cost assumptions). With respect to generation and storage, the ISP's role is better focussed on providing stakeholders with a broad quantification of system needs and possible timings.

2. Storage durations - how these are modelled and the interaction with market settings

The ISP separates storage durations into Shallow (up to 4 hours), Medium (4 to 12 hours) and Deep (greater than 12 hours). It is essential the ISP continues to consider different storage durations and the varying roles they will play in a transitioning and future NEM. As noted above, while there is value in the ISP identifying the market need for volumes of certain services, and need for different types of storage, investment outcomes are ultimately shaped by commercial signals.

Hydro Tasmania has recently responded to the AEMC's consultation on the Reliability Standard and Settings Review. The Cumulative Price Threshold (CPT) currently sits at around 8 hours of Market Price Cap over the course of a week. As a hydropower operator and pumped hydro developer, this setting materially influences the commercial value of storage depth. Under current market settings, storage beyond approximately 8 hours is not fully valued through price signals alone. This is directly relevant for assets such as our proposed Cethana Pumped Hydro project (20-hour design) in northern Tasmania, where the system value identified in the ISP exceeds the revenue certainty currently available under market settings. Where modelling assumes deployment of longer-duration storage without corresponding revenue mechanisms, this represents a delivery risk rather than a modelling limitation.

With this framing in mind, the appropriateness of the 4 to 12 hour 'Medium' duration category should be considered further. There is a considerable commercial and operational distinction between 4 hr and 12-hour storage portfolios. The ISP should take caution when assuming that 12-hour storages are being developed if there is only the incentive to build for 8 hours under current market price signals. It also makes it more challenging to understand the needs of the market and how they may evolve over time.

There may be scope for longer duration storage to be valued differently through changes to the NEM's design as proposed by the NEM Wholesale Market Settings Review. However, this is not the reality for investors today. Aligning the ISP's storage duration categories more closely with existing market settings (for example, up to 2 hours, 2 to 8 hours, and 8 hours plus) would improve transparency around what the market is currently incentivised to deliver versus what may require alternative commercialisation pathways.

Consideration could also be given to breaking up the 'Deep' category further given the need for 16hr or deeper storages capable of supporting the NEM through sustained VRE droughts or for weekly/monthly energy shifting. A change such as this could better communicate, at a high level, the storage requirements of the NEM, noting that these deep storages would likely require alternative commercialisation arrangements to be realised.

3. The role of hydropower

Hydro Tasmania welcomes the Draft ISP's recognition of hydropower and long-duration storage as critical components of a high VRE system. The ISP appropriately highlights the role of hydro in firming renewable output during prolonged dark and still conditions, supporting reliability during winter peaks, and managing system security as new infrastructure is connected¹.

Hydropower's contribution extends beyond short-term firming. The NEM's approximately 7 GW of existing hydro provides daily, weekly and seasonal energy balancing, helping to manage renewable lulls and sustain reliability across weeks and months². In a system increasingly dominated by weather-correlated generation, this diversification and seasonal energy-shifting capability provides structural system value that is not necessarily readily recognised in the current market settings.

¹ ISP explainer Page 61

² ISP explainer Page 69

As the transition progresses, system risk increasingly shifts from average conditions to low-probability, high-impact events, including prolonged renewable droughts, clustered outages and delivery delays. While least-cost modelling focuses on expected outcomes, it is important to recognise the insurance value of assets that perform in these tail events. Large-scale hydro and deep storage provide resilience across extended periods, helping to manage correlated risks that may not be fully reflected in central modelling assumptions.

The NEM's existing hydro fleet is often treated in modelling as stable and enduring capacity. In practice, maintaining this performance requires considerable ongoing refurbishment and reinvestment. Despite this, they remain cost-effective providers of flexibility and energy security. Continued recognition of both existing hydro and future pumped hydro developments will be important as VRE penetration increases and coal and gas generation reduces.

4. Assumptions on Tasmanian demand

Hydro Tasmania believes that the Draft 2026 ISP better reflects a mid-case for future Tasmanian demand and is an overall improvement on the 2024 ISP. In particular, Tasmania's more moderate demand growth in the Step Change scenario aligns more closely with Hydro Tasmania's current market outlook.

With respect to the individual components of Tasmanian demand, Hydro Tasmania notes that projected reductions in Tasmanian residential and small business operational demand are heavily driven by assumptions regarding rooftop PV uptake, self-consumption and particularly orchestration. In draft projections, Tasmanian residential operational demand declines substantially over the outlook period. This represents a structural shift in net demand and implies very high levels of DER penetration and behavioural response.

These assumptions are inherently uncertain and highly sensitive to behavioural, technology cost and policy variables. Evidence has shown that small deviations can materially change net demand trajectories and system balancing requirements. Further sensitivity testing around distributed energy uptake and orchestration assumptions would strengthen confidence in ISP outcomes.

5. Commerciality of new build

The ISP's least-cost modelling provides valuable system-level insights and shared information to guide future NEM development and the ODP for network investment. However, as AEMO is aware, this approach has limitations and does not necessarily translate into commercially financeable investment pathways. Least-cost modelling can produce outcomes that rely on sustained high levels of VRE build even if commercial conditions for later projects may be materially weaker due to price cannibalisation and correlation effects.

Similarly, new build of capacity-style services, such as deep storage, gas peakers, or firm capacity, may also appear a least-cost outcome, but may not be commercially feasible under current incentives. Where there is a divergence between modelled outcomes and investable market outcomes, this represents a delivery risk rather than merely a modelling limitation.

Continued refinement of modelling assumptions, as well as clearer commentary around drivers of commercial viability not captured in least-cost modelling, would assist stakeholders in interpreting ISP results and understanding the practical implications for investment timing and sequencing.

6. Constrained delivery sensitivity analysis

Hydro Tasmania welcomes a number of significant improvements AEMO has made with the 2026 ISP. Among these is a greater focus on sensitivity testing through the *Constrained Delivery sensitivity analysis*, which provides greater depth and weight to the draft ISP's findings. The fact that the "*transmission projects in the ODP still deliver benefits, even if the pace of delivery is constrained*" gives confidence that these are the right investments for the NEM across a range of future outcomes.

As the draft ISP notes, delays to transmission and new generation sources would mean that coal will remain in the system longer but that strong interconnection helps mitigate some risks, including around unforeseen coal closure. The NEM is in a critical phase. The sequencing of coal retirements, transmission delivery and long-duration storage investment will be critical, and misalignment between these elements could materially increase system and price risk. This analysis and commentary is important and we appreciate the sensitivity analysis AEMO has undertaken. Hydro Tasmania supports further sensitivity testing as a means to strengthen and build confidence in ISP findings, particularly regarding slower technical or commercial progress of certain technologies and the potential cost impacts of delayed deployment.

7. Development of the Energy Services Entry Mechanism (ESEM)

The ISP identifies the growing need for flexible and long-duration capacity. However, current market settings do not provide sufficient revenue certainty for the deep storage investments required to manage renewable variability and tail risks. The ISP modelling assumes that market design reforms will evolve to support these resources, yet an investability gap exists under today's arrangements. Alignment between ISP modelling assumptions and wholesale market reform outcomes will be critical to ensuring these resources are delivered in practice. Where modelling identifies services that provide system value, including resilience and risk management benefits, but which are not commercially viable under existing settings, it is important that AEMO clearly highlight this gap so policymakers can consider targeted policy solutions.

Hydro Tasmania looks forward to the further development of the *Wholesale Market Settings Review* recommendations, in particular the ESEM. The current Capacity Investment Scheme (CIS) has so far appeared to favour easier to commercialise, short-lead time projects such as 2 to 4 hour batteries and, as an underwriting mechanism, is not designed to provide for revenue outside of existing market settings. As a result, it is unlikely to deliver the portfolio of long-duration resources indicated by the ISP.

The ESEM has the potential to bridge this gap, but only if it is explicitly designed to support and provide a realistic path to commercialisation for deep storage including pumped hydro. These investments have long development lead times and cannot be expected to materialise in response to late-cycle scarcity pricing. Without a credible commercial pathway, there is a material risk that required storage will not be available ahead of coal retirements.

ATTACHMENT B – Hydro Tasmania responses to Consultation Questions

Consultation questions

1. AEMO has proposed an ODP that represents a mix of investments that help deliver a reliable, secure, and least-cost power system while also meeting government policy targets.
Do stakeholders agree with AEMO's optimal development path selection in the Draft 2026 ISP? If yes, what gives you that confidence? If not, what should be further considered, and why?
2. In the Draft 2026 ISP, AEMO has proposed some changes to actionable transmission projects including:
 - 11 actionable projects to remain for delivery over the next decade,
 - three projects to move to 'committed or anticipated' status,
 - one project to move to 'future' status to align with the timing of other projects that influence its benefits (Central Queensland to Southern Queensland Expansion aligned with Borumba Pumped Hydro), and
 - two projects under review due to uncertainty in input assumptions and the influence of recent policies (Northern Transmission Project and QNI Connect).*Do you agree with the proposed timing and treatment of actionable projects in this draft?*
3. For the Draft 2026 ISP, the tested sensitivities were on constrained delivery of the ODP, variations on the gas development projection, and the pace of coal closures. The effect of demand-side factors was also tested by assessing the impact of reduced energy efficiency measures, and no further CER coordination.
What other sensitivities should be considered to further test the robustness of the candidate development paths, and why? What other sensitivities are relevant to testing robustness of investment decisions, why?
4. For the first time, AEMO has assessed opportunities for investment in distribution networks across the NEM, that are consistent with the efficient development of the power system, to support operation of consumer energy resources. This recognises the key role of distribution networks in supporting the integration of consumer energy resources. See Appendix A9 for more information.
Does the ODP appropriately identify and leverage distribution investment opportunities?
5. For the first time in the Draft 2026 ISP, AEMO has incorporated combinations of gas investments that may be developed by the gas industry. These gas development projections influence the availability of gas to support the power system in the future, and (potentially) the mix of investments required in the ODP.
Do the gas development projections reflect an appropriate level of investment to support the gas sector, including gas-powered generation in the NEM?
6. The Addendum to the 2025 *Inputs Assumptions and Scenarios Report* (IASR) provides further explanation in response to the AER's Transparency Review. This includes further explanation of forecast components including policies affecting consumer demand, data centres, hydrogen production, biomethane and community batteries.
Do stakeholders have feedback on the Addendum to the 2025 IASR?

1. **ODP investments:** Hydro Tasmania broadly agrees that the ODP contains a set of critical network investments that could underpin a high VRE NEM. As the draft report finds, through further interconnection, Tasmania can play an increased role to support and balance energy flows over days, weeks and months. With respect to the findings on possible generation and storage investments, these should not be seen as prescriptive as actual investment and deployment of technologies rests on a complex range of factors. Hydro Tasmania believes the need for deep storage may be under-represented in the draft ISP outputs and that significant investment in these technologies is needed to enable a confident and stable transition to a high VRE supply.

2. **Changes to Actionable Transmission Projects:** No comments

3. **Sensitivity testing:** Hydro Tasmania supports AEMO's use of sensitivity testing and the Draft 2026 ISP is an improvement on previous ISP in this regard. With respect to further testing, Hydro Tasmania suggests that AEMO could run cost sensitivities on key technologies, including batteries, pumped hydro, solar, wind and gas. We also support ongoing discussion and analysis of the potential levels of coordination of resources given the likely impacts this will have on overall system needs and utility-scale investment.

4. **Distribution Investments:** Hydro Tasmania supports AEMO's efforts to include analysis of potential network investment opportunities. This adds to the robustness of the ISP, particularly if this properly captures the cost of the investments needed to support the system. We support AEMO expanding this analysis further in future ISPs.

5. **Gas investments:** We support the inclusion of greater gas market analysis in the ISP. With respect to costs, Hydro Tasmania's April 2025 ISP methodology submission stated that:

“Hydro Tasmania is mostly supportive of AEMO's proposed methodology for incorporating additional gas analysis into the ISP, contributing to a more comprehensive energy plan. While gas will play a supporting role in the energy transition, it is important that modelling accurately reflects its evolving function within an increasingly renewable-based system.

We maintain our recommendation that if development pathways have materially different levels of GPG and associated gas market developments, that AEMO should apply a 'gas price uplift' to account for these additional costs. Industry consultation on the application and level of this uplift remains important.”

Hydro Tasmania continues to believe that this creates an inconsistency between gas and other generation types (for which additional network investment costs would be included in the ISP's Net Present Value calculations). We suggest AEMO explores options to include some gas upgrade costs in the ISP, or through a flow on effect in gas prices.

6. **Addendum to the 2025 IASR:** Hydro Tasmania recognises the considerable effort that AEMO goes to in making data available to stakeholders and in their willingness to discuss and explain assumptions leading to this. We note that there was a delay in publishing demand traces and that the Draft ISP Model has not been published. This makes interrogating the modelling more difficult. In past ISPs we have observed discrepancies in the reported inputs and methodology and how they are ultimately reflected in the model. We encourage further communication by AEMO on these issues.