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Integrated System Plan methodology – Issues paper – 23 October 2024

EnergyAustralia is one of Australia's largest energy companies with around 2.4 million electricity and gas accounts across eastern Australia. We also own, operate and contract a diversified energy generation portfolio across Australia, including coal, gas, battery storage, demand response, wind and solar assets, with control of over 5,000MW of generation capacity.

We appreciate the opportunity to provide feedback on revisions to AEMO's Integrated System Plan (ISP) methodology. Two key method changes, namely the additional modelling of gas system and electricity distribution network impacts, reflect the recent ministerial review of the ISP and the associated rule change proposal now before the AEMC. As per our submission to that rule change process, we question whether the proponents and stakeholders have a clear and shared understanding of what additional value the ISP can deliver by expanding into adjacent sectors.

The final 2024 ISP already presented detailed analysis including sensitivities on the uptake of consumer energy resources (CER) and the feasibility of gas-fired generation projections, given fuel and pipeline supply constraints. It is not clear that this had a material impact on AEMO's selection of an optimal development path (ODP) and, importantly, the designation of Actionable transmission projects. Neither the rule change proposal nor AEMO's proposed method changes envisage co-optimisation of gas or distribution networks in the evaluation of candidate development paths. AEMO's method changes, therefore, seem limited to developing a set of assumptions regarding adjacent energy systems that would align with, but not alter, its development paths.

We recognise that the value of the ISP, in addition to its formal designation of Actionable transmission projects, is in informing the need for new policies and market responses that will deliver decarbonisation objectives at least cost. AEMO is currently under increasing pressure regarding different estimates of the cost of the transition, its projected technology mix, and the role of the ISP in evaluating government policy. The inclusion of adjacent sectors within the scope of the ISP carries a risk of spurring further unproductive debate unless accompanied by additional analysis. In this context, the following sections provide some suggestions to help ensure AEMO's methodology changes and resulting ISP outputs can provide genuinely valuable information for stakeholders.



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Integration of the gas system

AEMO proposes to identify plausible candidate upstream supply sources and transport infrastructure. Our expectation is that the ISP will assume this supply infrastructure is brought online and in time to facilitate gas generation as a backup technology in the NEM. The policy implications of this, namely the current gap in government support for gas, and limited market response to forecast supply shortfalls, are already clear. As suggested in our submission to the draft 2024 ISP, AEMO could help underline the need for and types of policy support by modelling a development pathway, for information purposes only, which constrains any new gas generation, thus highlighting potentially higher system costs or risks from a reliability or system security perspective.

We otherwise support AEMO expanding on the analysis of daily supply constraints that it produced for the 2024 ISP. As flagged in its issues paper, AEMO should explore logistical and other physical constraints that might arising in needing to rely on liquid fuel alternatives. Any method improvements here should also be reflected in the Gas and Electricity Statement of Opportunities.

AEMO proposes to seek stakeholder input on plausible gas supply investments. We expect proponents will take this as an opportunity to advocate for their own projects, and trust that AEMO will conduct due diligence on any cost or project information it receives. Analysis of plausible gas supply options should also consider locational advantages associated with options like LNG import terminals (for example, consider any trade-offs in the cost of associated pipeline expansions) and generally consider whether options are complementary or substitutes.

AEMO's issues paper does not discuss the implications of the draft rule requirement to include prices in its 'gas development projections', which might be used to validate AEMO's fuel price assumptions.¹ AEMO already relies on a range of gas price forecasts and it should explore whether they adequately capture the increasing need to recover fixed costs of existing and new gas supply infrastructure from a shrinking customer base, compounded by the intermittency of gas generation. Changes to usage profiles will be reflected in contract shape premiums and other participant risk factors, which also affect the cost of delivered gas.

Improving demand-side modelling

Given data and modelling limitations, AEMO proposes to produce a high level 'cost curve' assessment of necessary augmentation to distribution networks that facilitate CER uptake and orchestration. We expect some advocates will intentionally take this cost estimate out of context to advocate for transitional pathways involving widespread hydrogen and renewable gas uptake, in opposition to electrification. AEMO could ensure a balanced debate and proper policy responses by also modelling the comparative cost and feasibility of a transitional pathway involving high rates of green gas uptake by mass market customers.

The challenges AEMO has alluded to in obtaining granular information on distribution network hosting capacity is symptomatic of challenges in enabling efficient, market-led CER uptake and orchestration. While some distribution network service providers (DNSPs) do publish useful network data and also invite non-network solutions via RIT-Ds, retailers and aggregators currently face significant barriers in identifying deployment opportunities that would benefit customers and the wider system. There appears to be

¹ AEMC, *Better integration of gas and community sentiment into the ISP*, Draft rule determination, 26 September 2024, p. 12.

some expectation from ministers and stakeholders as part of the current rule change consultation that AEMO publishing of a “statement” on expected CER development and orchestration will aid decision making by a range of parties, underpinned by new information reporting obligation on DNSPs. AEMO has been engaging with DNSPs on the extent of current information reporting and analysis of network capacity. As part of this method review and its 2026 ISP, AEMO should assess whether DNSPs are consistently providing useful data to the market, and whether this can be improved as a real way to enable CER development.

A further implication of outlining impacts on electricity distribution and gas infrastructure within the ISP is AEMO’s methodological approach to policy targets. The 2024 ISP already projected very high rates of NEM investment to meet 2030 targets. Unfortunately some delays in investment seem inevitable, meaning that AEMO’s 2026 ISP might see a further compression of necessary action into a shorter window i.e. four years. The plausibility of the ISP’s projections would be further undermined once build-out of gas supply and electricity distribution networks are added. We otherwise foresee a risk of AEMO designing scenarios with lower economic and demand growth to ease pressure on necessary supply side expansion, in order for the model to achieve 2030 and other policy targets. AEMO has clearly stated that the purpose of the ISP is to set out a least cost pathway in meeting government targets, in its consideration of power system needs under NER clause 5.22.3(b). It would be highly valuable for it to publish a non-compliant pathway, with higher associated emissions and costs in line with the Value of Emissions Reduction.

Perfect foresight

We support AEMO further refining its methods to address modelling bias arising from perfect foresight assumptions. To date, AEMO appears to treat this as more an issue affecting shorter duration storage technologies. AEMO should confirm it is also exploring the extent to which longer duration and seasonal storage operation is over-optimised given foresight of events such as forced outages of other plant, renewables droughts and rainfall-affected energy limits. Notably this will be material for incumbent hydro operators and multi-day pumped hydro storage which are expected to play an increasingly critical role in maintaining system reliability. If it has not done so already, AEMO should move from relying on the medium-term schedule and explore different combinations of the current day and day-ahead settings in its short-term time sequential modelling to better explore the impact of perfect foresight on system resilience.

If you would like to discuss this submission, please contact me on 03 9060 0612 or Lawrence.irlam@energyaustralia.com.au.

Regards

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