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**Daniel Westerman**
Chief Executive Officer & Managing Director

Australian Energy Market Operator (AEMO)
L22/530 Collins St, Melbourne
VIC 3000

Via email to: forecasting.planning@aemo.com.au

Dear Mr Westerman**,**

**AEMO ISP Methodology Consultation 2026 – AGIG Submission**

Australian Gas Infrastructure Group (AGIG) welcomes the opportunity to provide this submission to the Australian Energy Market Operator (AEMO) on the Integrated System Plan (ISP) Methodology Consultation 2026.

AGIG is one of Australia's largest energy infrastructure groups with distribution, transmission and storage assets worth over $9 billion. We deliver natural gas reliably, safely and efficiently to over 2 million residential, commercial and industrial customers across Australia. We are committed to decarbonisation and leading the transition from natural gas to renewable gas. We are investing in renewable gas projects - today we have three projects operating or under construction, and a pipeline of additional projects which will provide confidence in the deliverability of renewable gas to customers.

We welcome AEMO's collaboration so far on the development of the ISP, with the inclusion of a Gas Supply Model to appropriately address the action in the Energy Ministers' response to the review of the ISP. Integration of gas and electricity planning with appropriate industry engagement is essential to informing policies that deliver an energy transition that is reliable, safe, secure, and low-cost. The integration of gas and electricity planning will also allow greater visibility on the critical role that gas currently plays in the energy system, through the gas distribution networks, gas storage, and gas-powered generation.

We are also supportive of initial steps taken to include the role of renewable gases such as hydrogen and biomethane in integrated system planning through updated industry data and look forward to continuing to engage with AEMO as the commercial-scale production of renewable gases develops.

Once again, we commend AEMO for their commitment to stakeholder engagement. Our detailed responses to relevant questions are detailed below. Should you have any queries about the information provided in our submission, please contact Mr Mehar Vilkhu, Senior Policy Advisor, at Mehar.Vilkhu@agig.com.au.

Yours sincerely,

**Cathryn McArthur**
**Executive General Manager, Customer and Strategy**

# Consultation Questions Provided in the ISP Methodology Issue Paper

1. **Do you consider that the proposal to develop a gas supply expansion model appropriately addresses the action in the Energy Ministers' response to the Review of the ISP for additional gas analysis to be incorporated in the ISP? If yes, why? If not, why not, and how could this action otherwise be achieved?**

AGIG is supportive of the proposal to develop a gas supply expansion model and considers this appropriately addresses the action in the Energy Ministers' response to the Review of the ISP for additional gas analysis to be incorporated.

We are supportive of the response for the following reasons:

1. The model's high-level focus on regional solutions is consistent with the commercial nature of gas infrastructure projects.
2. We are also supportive of the model's improved consideration of all gases, including hydrogen and biomethane. Further, we are supportive of AEMO's approach of incorporating updated industry data on the potential of hydrogen and biomethane.

2. **Do you agree with the proposal for AEMO to develop at least one gas development projection per ISP scenario, and apply the projection as an input to the capacity outlook model? If yes, why? If not, what method would you recommend for the inclusion of gas development projections in the ISP?**

We agree with the proposal for AEMO to develop at least one gas development projection per ISP scenario and apply the projection as an input to the capacity outlook model.

By incorporating multiple projections, AEMO can better anticipate and respond to uncertainties and changes in the energy market, ultimately leading to more informed and effective decision making.

3. **What alternative approaches should AEMO consider for enhancing the incorporation of gas in the ISP to address the action in the Energy Ministers' response?**

To enhance the incorporation of gas in the ISP, AEMO should consider several enhancements to the existing approach.

Firstly, with the improved ability to integrate gas and electricity planning available to AEMO, it will be able to evaluate the extent to which gas usage is being moved from existing assets (i.e. distribution networks) to assets requiring new investment (i.e. gas-powered generation (GPG)) to meet new maximum winter peak demand levels. This would make clear the contribution of gas distribution networks to times of peak winter demand - an important attribute that can be considered and weighted in planning and investment decisions. For instance, in our previous submission on the ISP, we demonstrated that distribution gas networks in Victoria contributed approximately an additional 6% (~600MW) of supply during record maximum winter peak demand experienced in Victoria on 15th July 2024[1].

[1] See Figures 2 and 3 in our submission to AEMO dated 9 August 2024: https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/submissions/australian-gas-infrastructure-group-agig.pdf?la=en

Secondly, **11**it is also important to recognise the critical role that gas storage plays in the reliability of the energy system, both through GPG and direct use of gas, in meeting increased winter peak demand in the electricity system. For example, Table 8 of AEMO's Gas Statement of Opportunities (GSOO)[2] illustrates the capabilities of gas storage in the context of proposed energy storage developments across electricity and gas systems; existing daily capacity at Iona UGS alone (570TJ/d) is equivalent to approximately 158.3GWh.

**Table 8 Key existing market-facing and proposed storage infrastructure**

| Name | Maximum storage capacity (PJ)[A] | Maximum withdrawal rate (TJ/d) | Connecting location |
|---|---|---|---|
| Silver Springs | 46 | 25 | Wallumbilla, Queensland |
| Iona UGS<br>• Existing<br>• Upgrade (Proposed) | <br>24.4<br>26-28 | <br>570<br>570-615 | Otway Basin, Victoria |
| Newcastle LNG Storage | 1.5 | 120 | Newcastle, New South Wales |
| Dandenong LNG Storage | 0.68 | 87[B] | Melbourne, Victoria |
| Golden Beach Storage (Proposed) | 35 | 250 | Gippsland Basin, Victoria |

A. The maximum storage capacity includes buffer gas.
B. This storage can supply at faster rates for short periods of time, but that is non-firm supply and not able to be supported across a 24-hour period.

*Extract from AEMO's 2024 GSOO – Table 8.*

Thirdly, while the ISP currently views hydrogen mainly as a source of electricity demand, the relationship is becoming increasingly dynamic. Future iterations of the ISP should explore ways to better recognise this evolving relationship. Hydrogen is also a source of energy supply and can provide benefits to the electricity grid. As integration of gas and electricity planning matures, the potential of these solutions should be taken into consideration to ensure the least-cost pathway considers all options for electricity supply.

As we indicated in our previous submission to the ISP[3] the production of hydrogen can be used to reduce "spilled" solar or curtailed load, as demonstrated in our Hydrogen Park South Australia demonstration plant. Currently, our internal modelling estimates that a quarter of the solar power available for dispatch in South Australia is curtailed[4] and that significant commercial opportunities exist to scale up the use of the "solar sponge" in hydrogen production with our Hydrogen Park Adelaide project. This would also apply to other future hydrogen projects.

We also note that hydrogen can be used as a replacement for natural gas in existing distribution networks. Currently, our operational electrolyser (Hydrogen Park South Australia) injects a 10% blend of hydrogen into parts of the South Australian natural gas network. International and domestic evidence demonstrates that the upper hydrogen blending limit for Type A appliances is up to 20%[5], and we are working closely with technical regulators (such as the Office of the Technical Regulator SA) to gradually increase this blend amount to 20%, consistent with conservative engineering practices.

Therefore, while we are comfortable for this iteration of the ISP to adopt a forecast of hydrogen blends at 10% (as indicated by AEMO's Forecasting Reference Group), we consider that this assumption should be reviewed in light of future developments.

[2] AEMO Gas Statement of Opportunities 2024 available at https://aemo.com.au/-/media/files/gas/national_planning_and_forecasting/gsoo/2024/aemo-2024-gas-statement-of-opportunities-gsoo-report.pdf?la=en
[3] p6 of AGIG's submission to the 2024 ISP – 19 February 2024 https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2023/draft-2024-isp-consultation/draft-submissions/agig.pdf?la=en
[4] Based on 2023 NEM data of actual generation of large-scale solar units in SA from WattClarity
[5] See, for example: Hydrogen blending in GB distribution networks: strategic decision - GOV.UK; RP1.4-05 Performance of Type A appliances with blends of hydrogen and natural gas - Future Fuels CRC; and Australian Hydrogen Centre State-Wide Blending Studies - Australian Renewable Energy Agency (ARENA).

4. **What improvements could be made to AEMO's proposed approach to increase consideration of gas availability, considering gas transportation and storage capacity?**

Please refer to responses in question 3.

5. **What improvements could be made to AEMO's proposed approach in its capacity outlook models to improve the representation of fuel usage for gas generation, particularly for mid-merit capacity?**

NA

6. **What are your views on AEMO's proposed inclusion of distribution network capabilities and their impact on CER within the ISP model? What further enhancements could be made?**

NA

7. **Do you agree with AEMO's proposals to improve its hydrogen electrolyser load modelling, or have further enhancements to suggest? Please provide any supporting evidence.**

We agree with AEMO's proposals to improve its hydrogen electrolyser load modelling and suggest further enhancements below that could be considered.

The Forecasting Reference Group indicates that hydrogen modelling will be based on large-scale domestic projects targeted at decarbonising iron, steel, ammonia, and cement. It should be noted that there are hydrogen projects currently operating within distribution networks today which can provide a valuable source of actual data.

We also note that there is currently no framework for receiving information from developers on hydrogen projects, similar to the obligations on electricity generators and developers to provide information to AEMO under its Generation Information Guidelines[6]. We recommend future iterations of the ISP could undertake more work and further consultation to establish a framework to collect hydrogen project data.

8. **What are your views on AEMO's proposal to test previously actionable projects for actionability at the project proponent's timing within the actionable window, and at a later re-start timing?**

NA

9. **Do you agree with AEMO's approach to model storage devices with headroom and foot room energy reserves and imperfect energy targets in the time-sequential modelling component? What improvements should be made to model energy storage limits to better reflect actual behaviour and address issues of 'perfect foresight'? Please provide any supporting evidence.**

NA

10. **What risks should AEMO consider when assessing how inverter-based resources (IBR) can complement synchronous machines in providing system strength and inertia?**

NA

11. **Do you agree with AEMO's approach for uplifting cost and modelling representation for system security services in the ISP? If not, what alternative methods would you recommend? Please provide any supporting evidence.**

[6] https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/generation_information/2020/final-generation-information-guidelines.pdf

NA

12. **Do you agree with AEMO's proposal to model more than two wind resource quality tranches for geographically large REZs? If not, what alternatives should AEMO consider?**

NA