24 June 2025

Australian Energy Market Operator (AEMO)
Via email: ISP@aemo.com.au

RE: Draft Gas Infrastructure Option Report – May 2025

Dear Sir/Madam,

Squadron Energy welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) consultation on the Draft Gas Infrastructure Options Report (GIOR).

Squadron Energy is Australia's leading renewable energy company that develops, operates and owns renewable energy assets in Australia. We have 1.1 gigawatts (GW) of renewable energy in operation and will be the single biggest contributor to helping Australia meet its renewable energy and decarbonisation targets. Our development pipeline has projects at differing stages of development and includes wind, solar and firming capacity such as batteries and gas peaking plants with dual fuel capability.

We have also repurposed the former Port Kembla coal terminal into an LNG regassification facility - the Port Kembla Energy Terminal (PKET). Once operational, Squadron Energy's PKET will include a floating storage and regasification unit (FSRU) to enable LNG to supply the domestic market. At full capacity, PKET will supply over 500TJ/day and up to 130PJ per annum.

Generally, we are supportive of AEMO preparing gas development projections for inclusion in the Integrated System Plan (ISP) and consider it can provide insights into the availability and limitation of gas to supply Gas Powered Generation (GPG). However, the development of new inputs that will be used to evaluate plausible levels of future gas availability should consider that:

- comparison of gas infrastructure options based on their respective costs and capacities does not adequately consider the value of solutions to provide peak day or embedded capacity services that will be required to ensure gas supply adequacy, particularly for GPG.
    - comparison of gas infrastructure options using the Building Block method does not reflect the economic regulatory settings in the gas market, with pipeline tariffs on key gas transmission pipelines that are set much higher than would be determined for a regulated pipeline subject to an access arrangement
- comparison of gas infrastructure options on a cost basis overlooks the real cost that consumers will face, which will factor in the total cost of the supply solution, not just the cost of a gas infrastructure solution. Put differently, comparison of gas infrastructure options on a cost basis only is not an effective measure of the most cost-effective gas infrastructure options. This is because the cost of gas faced by consumers will reflect the highest possible charge that can be achieved relative to the customers' next best option for supply delivered to GPG demand points, not the breakeven cost of single new assets, or a single gas infrastructure option. For example, tariffs on expanded north-south pipelines will not reflect the delivered gas price of supply from northern fields which will ultimately be set by northern producers' willingness to sell at a particular price to Southern consumers.
- comparison of gas infrastructure on a cost basis does not adequately consider the economic benefit of increasing competition in gas *supply* provided by increasing gas supply options, including by way of imported LNG.

Additional comments on capital expenditure assumptions for specific assets and consultation questions are provided in Appendix A.

Assessment of gas infrastructure options based on the cumulative costs of component projects does not capture the relative value of some assets to meet supply adequacy needs for GPG

We welcome the GIOR's consideration of gas availability and its influence on electricity investment needs, and risks, when attempting to assess optimal power system investment needs. It has the potential to provide important insights into the availability and deliverability of gas fuel for GPG as well as transport and storage constraints in the East Coast Gas Market (ECGM). This is particularly important as the demand-supply balance in the ECGM continues to tighten, and the market is more exposed to reliability and supply adequacy risks, notably in short periods of high demand (be it direct gas use or GPG).

Levels of future gas use vary widely dependant on the transition pathway taken by the electricity market (e.g. rate of closure of coal generators and rate of build of renewables). It is important to recognise that gas will underpin a greater volume of GPG generation in the near term to support the renewables transition with a decreasing share over time. Put differently, we will see a significant increase in daily gas capacity required - and a concurrent increase in idle capacity during non-peak days - with an overall declining gas requirement with the passage of time. This will place additional strain particularly on the gas transmission system to deliver affordable gas to where it is needed, and therefore has important implications for how AEMO and governments should think about and plan for gas infrastructure options to support the transition.

As currently proposed, the GIOR will assess multiple gas development projections (made up of varied gas infrastructure options) based on a comparison of baseline cost of individual gas infrastructure options. This is only a partial basis on which to reflect plausible pathways for gas investment given limited:

- focus on the gas supply options (and associated costs) that are needed to underpin gas infrastructure investment (in the case of transmission pipelines)
- consideration of the types of services required now and in future and relative value of different forms of gas infrastructure to deliver these (location, shape and term in which gas is supplied).

The changing nature of gas use in the energy system necessitates a focus on infrastructure options that provide the flexibility and reserve capacity that the market needs to manage peak demand - the ability to ramp up as required and then withdraw when the need is no longer present. This will not necessarily be captured in a comparison of baseline costs.

For example, LNG regassification terminals, such as the PKET, offer this flexibility and mean that domestic supply is not solely reliant on limited interstate pipeline capacity or domestic production. Its Floating Storage and Regasification Unit (FSRU)-based model allows for scalable supply adjustments, unlike pipeline projects that lock in infrastructure and consumer costs for decades and require commensurate investment in long term gas production infrastructure. If market conditions shift, PKET's floating infrastructure can be ramped to meet demand or redeployed/repurposed, reducing the risk of stranded assets or ongoing perverse impacts on market outcomes. Equally, like storage infrastructure, the PKET is operationally well suited to provide the types of services capable of meeting the peak daily and seasonal gas demand requirements of GPG for peak firming close to demand centres.

In this context, we encourage AEMO and governments to consider more fully the importance of and embedded value of flexible capacity and time-limited gas supply arrangements - particularly considering their ability to minimise costs faced by customers across the life of a gas infrastructure option. This requires

long-term policy vision and a clearly articulated and coordinated vision for the feasibility, timing and role to be played by gas infrastructure and GPG in the transition.

A Building Block cost assessment for gas infrastructure may not provide an appropriate method to compare the costs of projects and does not value increased competition

GHD's compilation of gas infrastructure costs to inform the GIOR is based on a similar approach to the Transmission Cost Database (TCD) which guides AEMO's estimation of new electricity transmission infrastructure costs. The TCD is used to inform a building block approach for regulated network infrastructure and involves the determination of forecast efficient costs to set revenue and/or prices. The core objective of this approach is to provide investors with a reasonable rate of return and allow the service provider to meet efficiently incurred costs relevant to providing the regulated service. However, this approach does not apply well to the assessment of gas infrastructure as proposed in the GIOR because:

- the relevant pipelines considered for expansion are not covered by regulation and their tariffs are not determined using the building block method. For example, the AER's Form of Regulation Review into the South West QLD Pipeline found a reference service using the Building Block model could be 33 to 59% lower than current tariffs
- it does not consider the economic benefit of increasing competition to drive lower charges for existing infrastructure
- merchant investment in gas infrastructure (i.e. not underwritten by long term contracts) inherently takes on more risk (being unregulated/having no guaranteed rate of return), and this will be reflected in expectations for their relative risk weighted rate of return
- gas pipelines, storage, production and regasification facilities provide different products, some of which reflect the needs of the market more clearly than others (profiled gas supply either within a day or over a longer period)
- the characteristics of different forms of infrastructure (e.g. asset life, utilisation and ability to be repurposed) will have implications for the overall costs faced by consumers

We encourage AEMO to more fully consider these implications, along with the veracity and utility of the GIOR focus on the cost of gas infrastructure components, when the objective appears to be understanding future gas availability and deliverability for GPG use.

Comparison of gas infrastructure options on a cost basis only overlooks the real cost that consumers will face

Comparison of gas infrastructure options on a cost basis overlooks the real cost that consumers will face, which will factor in the total cost of the supply solution, not just the cost of an asset solution. Comparison of gas infrastructure options on a capex-to-capex basis is therefore not an effective measure of the most cost-effective gas infrastructure options. This is because the delivered cost of gas faced by consumers will reflect the highest possible charge that can be achieved relative to the customers' next best gas supply option, not the breakeven cost of the infrastructure investment (i.e. gas producers will price their gas supply taking into account the customer's next best alternative).

It also does not adequately consider the economic benefit of increasing competition in gas *supply* provided by regassification infrastructure - source cheapest gas wherever it is sourced from, including both domestic and international gas supply. This will have implications for the effective actual costs faced by users and built into tariff structures. In practice, pipeline investments typically need to be underwritten by secure, long-term gas supply contracts. This is because pipelines are expensive, long-lived assets, and investors need sufficient assurance that there will be sufficient gas demand to justify the investment and ensure cost recovery. If there is not enough gas supply to utilise the pipeline capacity, the investment may not be

viable. Returning to consideration of the future levels of gas use, pipelines may be less well suited to an energy system that will see a significant increase in daily capacity required with idle capacity during non-peak days / periods and an overall declining gas requirements base. Equally, this introduces limited confidence that the cost of the asset can be recovered over the operation life of the pipeline with enduring implications for customers. The outturn of these considerations for the GIOR are:

- the feasibility of various forms of new gas infrastructure options cannot be realistically costed based on capex alone as their viability is underpinned by long-term supply contracts from gas producers;
- the cost of any new pipeline is only one cost that needs to be factored in, given that a new single pipeline itself does not necessarily deliver gas to an existing or future GPG, rather, it is just one cost associated with the ultimate delivered cost of that gas;
- additional sources of gas supply from currently unconnected Australian sources (such as NT or WA) and international sources will put downward pressure on overall prices;
- subsequently, the capex costs of new gas infrastructure components are not reflective of delivered gas prices which will be set at a discount to the customers next best option for supply, not the breakeven cost of a single new gas infrastructure component.

If you would like to discuss this submission or any related content, please contact Rupert Doney, Director - Policy at [redacted]

Yours sincerely,

Walter Schutte
EGM Customer and Energy Markets
For and behalf of Squadron Energy Services Pty Ltd

Appendix A

Consultation area and question	SQE positions
Gas infrastructure costs	
Do you have any feedback on the gas infrastructure base costs, adjustment factors and escalation indices provided by GHD?	• Risk/efficiency factors should be included to compensate for things like: deliverability risk, reserves risk (scale and timing), market $ impact of reliability events resulting from single infrastructure risk. • High-level estimates (AACE class 5) are used for PKET capex assumptions (a facility that is already built). It is therefore appropriate to use the higher end of the cost range for other gas infrastructure types. • Significant underestimate of real cost for pipeline and bottle storage costs in Australia.
Do you have any feedback on the methodology for the gas infrastructure base costs and forecasts provided by GHD?	NA
Do you agree with the proposed forecasting approach of applying a single set of cost escalation indices for gas infrastructure components across all ISP scenarios?	NA
Gas development projections	
Do you have any feedback on AEMO's use of GHD's component costs in costing gas infrastructure options?	See body of submission.

AEMO has proposed to limit sources of new natural gas supply to known contingent (2C) resources provided via the Gas BB and GSOO surveys. Should other sources of new gas be included?	• Suggest AEMO include supply sourced from domestic or international sources via regasification facilities up to the nameplate capacity of the facility.
Of the list of gas infrastructure options mentioned in Section 3.2.2 and provided in Appendix A2, are there any options that should not be included, or any further options that should be considered?	NA
Application of gas development projections for fuel limitation in the ISP	
Will AEMO's proposed gas supply and pipeline zone limitations be effective in limiting fuel availability for GPG?	NA
Considering the purpose of the assessment, is it reasonable to apply priority to residential, commercial and industrial customers ahead of GPG?	• AEMO to provide clarification on rationale. SQE would assume that customers would value electricity greater than gas so may be circumstances where GPG is valued over customer gas load.
Are there any supply zones missing? Are there any supply zones that will be unrealistically represented by the proposed constraints to gas supply?	NA