

9 August 2024

**Daniel Westerman**

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**Dear Mr Westerman,**

**AEMO Draft 2025 Inputs, Assumptions and Scenarios Report (IASR) – AGIG submission**

Australian Gas Infrastructure Group (AGIG) welcomes the opportunity to provide this submission to the Australian Energy Market Operator (AEMO) on the Draft 2025 Inputs, Assumptions and Scenarios Report (IASR).

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 several projects which will provide confidence in the deliverability of renewable gas to customers.

We welcome AEMO's collaboration on the development of the IASR. Industry engagement is essential to informing policies that deliver an energy transition that is reliable, safe, secure, and low-cost.

In the 2024 Integrated System Plan (ISP), gas-fired power generation (GPG) plays a more significant role compared to earlier versions of the ISP. These plans incorporate both natural gas and renewable gases. It is expected that this trend will continue in the 2026 ISP, as outlined in our submission.

Renewable gases such as biomethane and renewable hydrogen will play a critical role in decarbonising the Australian economy, and have the potential to provide a decarbonised solution in both electricity and gas networks while providing the same benefits natural gases currently do today - such as reliability and the ability to be stored. However, they will need the right investment signals to get to commercial scale. A high economic growth scenario and narrative should, therefore, include one with widespread uptake, development and use of renewable gases reflecting known supply potential.

Furthermore, the proposed Australian Energy Market Commission (AEMC) changes to the National Gas Law (NGL) currently underway will allow AEMO to obtain a clearer picture of designing a low-cost solution for decarbonising the wider energy system, including on gas supply and networks.

AEMO recently noted on 15 July 2024 in Victoria that its electricity system reached a new winter peak demand of 8,612 MW at 6:10PM; the Victorian gas distribution network serviced an additional ~600 MW of demand at the same time. It will therefore be crucial for the 2026 ISP's assumptions to indicate the level of investment needed across the energy system for the energy transition to be safe, reliable, secure and low-cost.

Our detailed submission is attached to this letter. 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](mailto:Mehar.Vilkhu@agig.com.au).

Yours sincerely,



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

# Detailed Submission – AGIG response to the AEMO 2025 IASR Scenarios Consultation Paper

## Our recommendations on the IASR

1. Continue to acknowledge the role that Gas Powered Generation (GPG) plays in meeting system demand now and the role it will play into the medium and long-term future.
2. Recognise and leverage the recent AEMC rule modification that permits utilising data acquired through the National Gas Law (NGL) in the Integrated System Plan (ISP) to provide a more transparent assessment of electrification's effects on gas supply for GPG.
3. Continue to acknowledge the significance of gas infrastructure in light of the current cost and time limitations associated with transitioning gas demand to electrification, both now and in the future.
4. Acknowledge the role and potential of renewable hydrogen and biomethane in addressing the energy demands of both electricity and gas systems, particularly in a high economic growth scenario.

## Importance of Natural Gas

Natural gas plays a crucial role in Australia's energy mix. It provides reliability and flexibility, that can meet peak demand and support renewable energy sources. This has been observed as recently as this winter, signifying its importance in the energy fuel mix today and into the future. We believe that the 2025 IASR should continue to recognise the importance of natural gas in our energy future.

This winter, gas has played a critical role in firming energy supply in peak periods. AEMO's latest Quarterly Energy Dynamics report highlighted the importance of GPG, indicating that over the last 12 months gas-fired generation increased 16%<sup>1</sup>.

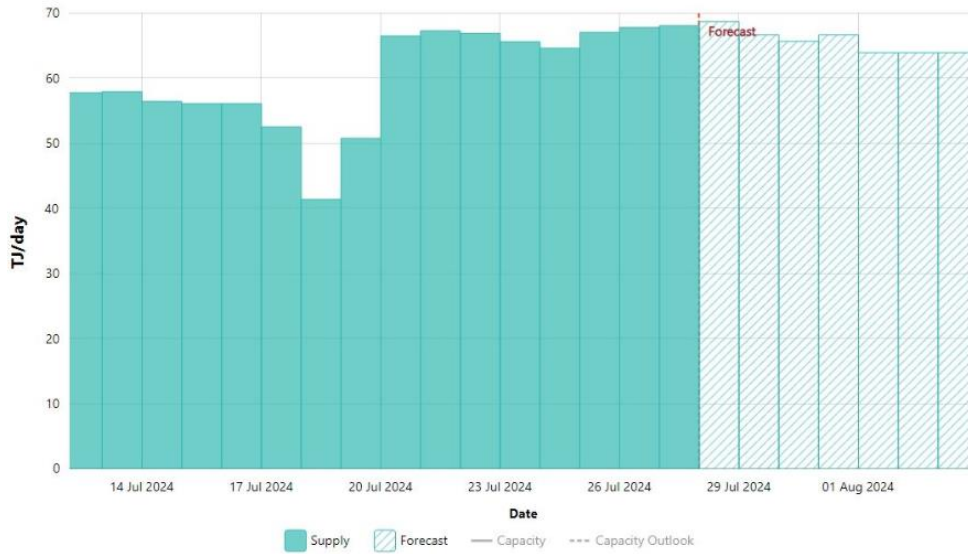
The Orbost Gas Processing Plant (OGPP) achieved multiple production records in the week 21 – 28 July to meet winter demand in Victoria, producing a record 68.2 TJs and recording a 7-day average of production of 66.8 TJs<sup>2</sup> (as shown in Figure 1 below).

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<sup>1</sup> AEMO Quarterly Dynamics Q2 2024, Page 3, AEMO, July 2024. See <https://aemo.com.au/-/media/files/major-publications/qed/2024/qed-q2-2024.pdf>

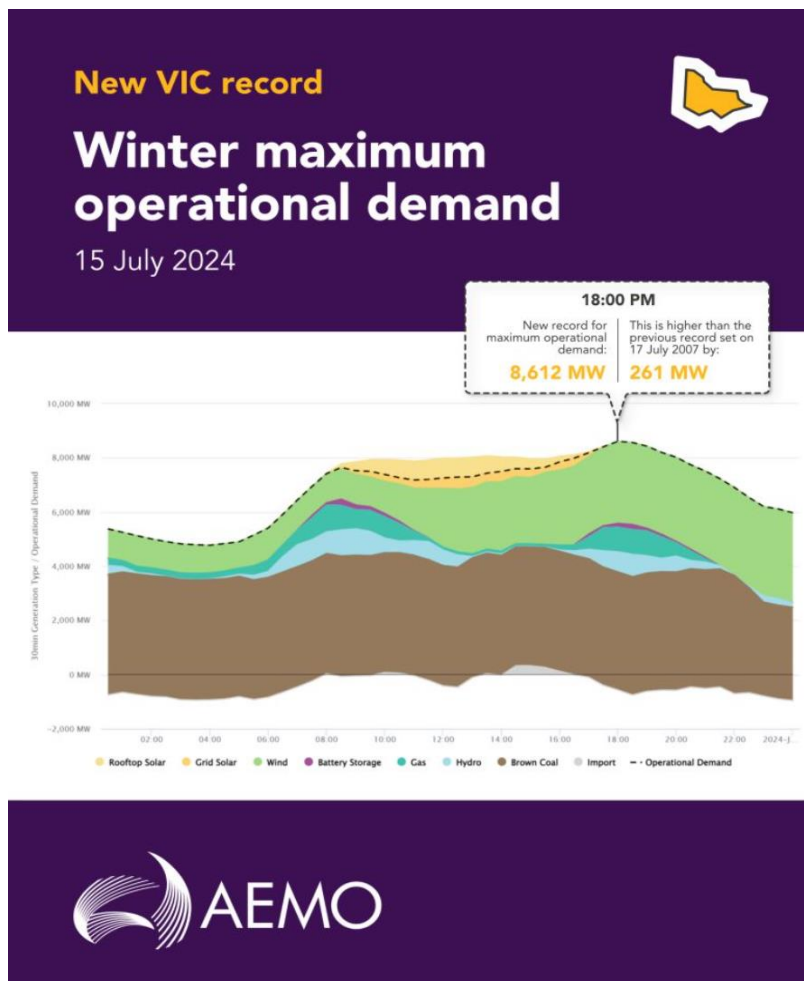
<sup>2</sup> AEMO Gas Production Dashboard at <https://aemo.com.au/energy-systems/gas/gas-bulletin-board-gbb/data-gbb/data-dashboard> between the period 13 July 2024 and 28 July 2024

**Figure 1: Orbest Gas Plant gas production in July 2024**



Source: [AEMO | Data dashboard](#) between the period 13 July 2024 and 28 July 2024

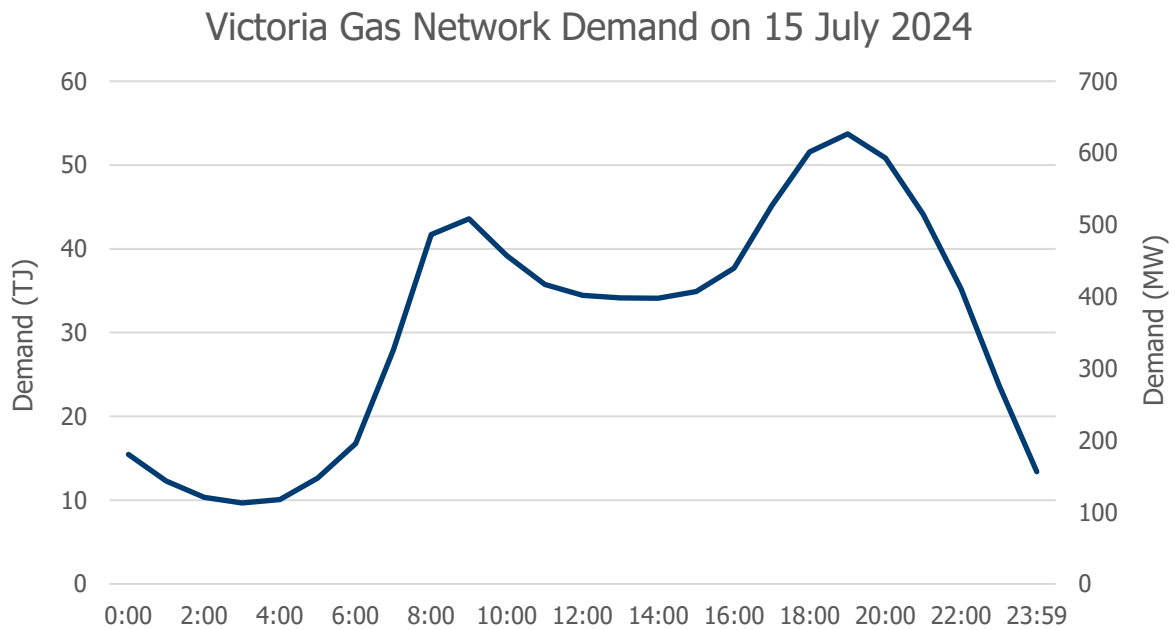
**Figure 2: Victoria Electricity supply fuel mix on 15 July 2024**



Source: [AEMO | NEM data dashboard](#) for 15 July 2024

As AEMO also noted, on 15 July Victoria recorded a new maximum in peak electricity demand in the winter with 8,612MW recorded at 6:10PM. Gas played an important role in providing adequate gas fired generation for electricity supply to meet this demand peak in the evening after sunset and solar resources were low<sup>3</sup>. In addition to gas used for GPG, gas consumption in distribution networks also contributes to meeting peak system demand. As shown in Figure 3 for the same day, a peak of 51.6TJ was recorded on Victorian gas distribution networks in the same time period (between 6PM to 7PM). This is approximately 600 MW in addition to the peak system load experienced by the electricity network highlighted by AEMO above.

**Figure 3: Victoria Gas Network Demand on 15 July 2024**



Source: [NEMweb Vic Gas Hourly Data](#) for 15 July 2024

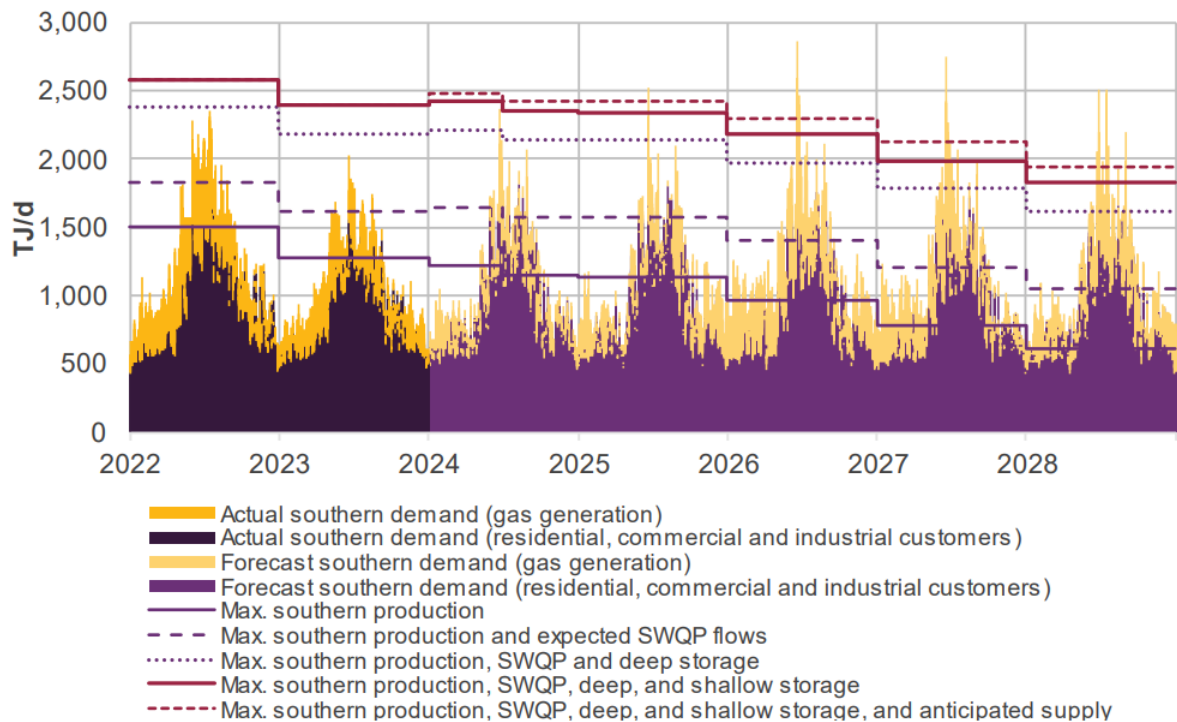
Figure 2 and Figure 3 respectively demonstrate how gas-fired generation and the gas distribution network play a critical role during times of peak demand in Victoria **Figure 2**.

According to AEMO’s 2024 GSOO, Figure 4 highlights that gas supply shortages are expected in the short to medium term due to rising demand for GPG during winter peaks in the southern states<sup>4</sup>. The report emphasises the need for new investment to ensure gas supply keeps pace with demand from homes, businesses, and electricity generation.

<sup>3</sup> AEMO National Electricity Market Data Dashboard for Victoria by Fuel Mix at <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem> for 15 July 2024

<sup>4</sup> AEMO Gas Statement of Opportunities, March 2024, Page 10, AEMO 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](https://aemo.com.au/-/media/files/gas/national_planning_and_forecasting/gsoo/2024/aemo-2024-gas-statement-of-opportunities-gsoo-report.pdf?la=en)

**Figure 4: Actual daily southern gas system adequacy since January 2022, and forecast to 2028 using existing, committed and anticipated projects (TJ/d)**



Source: [2024 Gas Statement of Opportunities \(aemo.com.au\)](https://aemo.com.au), Page 10

Section 6.4 of AEMO’s 2024 ISP<sup>5</sup> also indicated that up to 12.8 GW of investment in GPG capacity would be needed to meet the needs of the electricity system: *"In total, the NEM is forecast to need 15 GW of gas-powered generation to ensure the NEM remains resilient under a range of power system and extreme weather events. Of the existing 11.5 GW capacity, about 9.3 GW is forecast or announced to retire, so that capacity would be replaced and another 3.5 GW added."*

Scenarios should be clear on whether any relationship exists between increased electrification and increased gas supply shortages, particularly during periods of peak demand on the energy system. We encourage AEMO to utilise the opportunity presented by recent proposed AEMC<sup>6</sup> changes aimed at better integrating gas with the ISP to ensure this achieves a lowest cost outcome across the energy system for customers.

<sup>5</sup> 2024 Integrated System Plan, Page 69, AEMO <https://aemo.com.au/-/media/files/major-publications/isp/2024/2024-integrated-system-plan-isp.pdf?la=en>

<sup>6</sup> Better integrating gas into the ISP (Electricity), AEMC, at <https://www.aemc.gov.au/rule-changes/better-integrating-gas-isp-electricity>

## Potential of Renewable Gas

Renewable gas, including carbon-neutral biomethane, and renewable hydrogen, has significant potential to contribute to the decarbonisation of existing natural gas use. Renewable gases will play a key role in decarbonising residential, business and industrial customers.

While industrial customers are generally understood to be “hard-to-abate” and reliant on renewable gases to decarbonise, they rely on the economies of scale from sharing the fixed costs of shared infrastructure. Modelling by Frontier Economics undertaken in 2023<sup>7</sup> indicated that widespread renewable gas use across AGIG’s Victorian networks would result in a Gross State Product (GSP) outcome greater than a scenario where industrial users were left to shoulder the fixed costs of transporting renewable gases through existing distribution networks. ACIL Allen’s report on renewable gas target modelling also similar indicated a role for renewable gases in all economic growth scenarios.<sup>8</sup>

We therefore suggest that a high economic growth scenario should include the widespread development and growth in renewable gases.

Furthermore, in our experience delivering renewable gas projects, the economies of scale from the distribution network, and widespread use cases of renewable gases, are critical enablers to making renewable gas projects commercially viable. The technologies involved in the production of renewable gas are maturing, and we believe they will play a significant role in achieving emissions reduction targets and enhancing energy security. It should also be noted that AGIG’s gas distribution networks have an ongoing mains replacement program that means approximately 95% of our networks (by length) are 100% renewable gas ready, as below:

- 100% of AGN Victoria (eastern regional Victoria)
- 88% of MGN Victoria network (metropolitan Melbourne), expected to be completed by 2032
- 97.2% of AGN South Australian network, expected to be completed by 2026;
- 98.8% of AGN Queensland network, expected to be completed by 2027.

We encourage AEMO to continue to recognise the developments below in renewable gases and the role they can play in designing a safe, reliable, secure, and low-cost, decarbonised energy system.

A Blunomy report recently commissioned by AGIG indicated that the estimated state-wide theoretical biomethane potential in Victoria, South Australia and Queensland is 323.5 PJ, with 84.6 PJ recoverable in a Business as Usual (BAU) scenario, while 204.7 PJ is recoverable under a Policy Enabled (PE) scenario<sup>9</sup>.

In AGIG’s networks across Australia, there is potential to recover 88.3 PJ<sup>10</sup> of biomethane to supply energy demand, creating 10,100 jobs. Under a BAU scenario, Victoria’s recoverable potential is 34.4 PJ which is 38% of the state’s theoretical biomethane, however it can reach up to 62.6 PJ, representing 68% of the states biomethane potential where agriculture is dominant feedstock, responsible for 50% of the potential supply<sup>11</sup>.

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<sup>7</sup> Alternative Gases Modelling – Victoria. Frontier Economics, 2023. Confidential report to be made available to AEMO

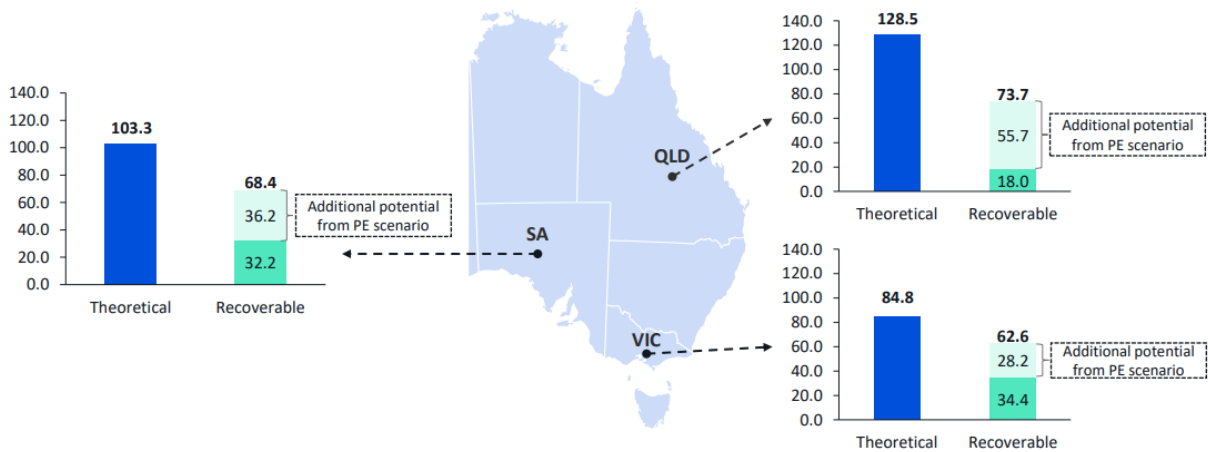
<sup>8</sup> [Renewable Gas Target: Delivering lower cost decarbonisation for gas customers and the Australian economy | ACIL Allen](#)

<sup>9</sup> Biomethane Potential in AGIG’s Network Catchment and Associated Co-benefits Final Report, Page 16, Blunomy and AGIG at [https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712\\_Biomethane-potential-and-cobenefits-Public.pdf](https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf)

<sup>10</sup> Biomethane Potential in AGIG’s Network Catchment and Associated Co-benefits Final Report, Page 20, Blunomy and AGIG at [https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712\\_Biomethane-potential-and-cobenefits-Public.pdf](https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf)

<sup>11</sup> Biomethane Potential in AGIG’s Network Catchment and Associated Co-benefits Final Report, Page 17, Blunomy and AGIG at [https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712\\_Biomethane-potential-and-cobenefits-Public.pdf](https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf)

**Figure 5: Biomethane production potential by state in Australia (PJ)**



Source: [Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report](#), Page 16

In addition, the Federal Government has recently announced subsidies for the production of renewable hydrogen – the Hydrogen Production Tax Incentive<sup>12</sup>. The tax incentive eligible to Australian resident corporations will provide a \$2 incentive per kilogram of hydrogen produced for up to 10 years between 1 July 2027 to 30 June 2030 for projects that reach final investment decision by 2030.

As highlighted above and in section 6.4 of AEMO's 2024 GSOO, AEMO expects that up to 12.8 GW of new investment in GPG capacity may be needed. Renewable gases can contribute to this new capacity, either through GPG or in distribution networks by servicing winter peaking load, further showing how widespread deployment of renewable gases supports positive economic growth.

Currently, gas turbine technology is available to start up and burn gas blends of hydrogen with the ability to switch from natural gas to 100% hydrogen gas with no hardware modifications<sup>13</sup>. Earlier this year, Tallawarra B Power Station marked the first dual-fuel natural gas/hydrogen power plant in commercial operation in Australia, where EnergyAustralia is expected to blend 5% green hydrogen in 2025<sup>14</sup>.

AGIG is already producing hydrogen for distribution to residential customers through the Hydrogen Park South Australia project, which is currently delivering 10% hydrogen to approximately 3,800 homes. In addition, we are beginning construction of our Hydrogen Park Murray Valley which will supply 10% hydrogen to approximately 40,000 residential, commercial and industrial customers in the Albury and Wodonga region with the potential to expand into the refuelling industry<sup>15</sup>. Our proposed 60 MW Hydrogen Park Adelaide project is expected not only to provide a 20% blend to the distribution network, but will also include various industrial and GPG offtake.

In all scenarios, this demonstrates the positive impact of the widespread development, growth and use of renewable gases – aligning this with a positive, high economic growth scenario in AEMO's IASR.

<sup>12</sup> Hydrogen Production and Critical Minerals Tax Incentives, Australian Taxation Office, at <https://www.ato.gov.au/about-ato/new-legislation/in-detail/businesses/hydrogen-production-and-critical-minerals-tax-incentives>

<sup>13</sup> [H2 Gas turbine capabilities and case study \(1\).pdf \(bakerhughes.com\)](#)

<sup>14</sup> Opening of Australia's first dual-fuel gas and green hydrogen capable power plant in New South Wales, GE News at

<sup>15</sup> AGIG Renewable Gas, AGIG at <https://www.agig.com.au/renewable-gas>