Australian Government

Department of Industry, Science and Resources

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Future Gas Strategy consultation paper

AGL Energy (**AGL**) welcomes the opportunity to make a submission in response to the Australian Government's Future Gas Strategy consultation paper (**Consultation Paper**).

AGL is a leading integrated essential service provider, delivering 4.3 million gas, electricity, and telecommunications services to our residential, small, and large business, and wholesale customers across Australia. We operate Australia's largest electricity generation portfolio and have the largest renewables and storage portfolio of any ASX-listed company, having invested $4.8 billion in renewable and firming generation over the past 20 years and added more than 2,350 MW of new generation capacity to the grid since 2003.

AGL supports the Australian Government's ambition to develop a Future Gas Strategy to provide a medium- to long-term plan for gas production, consumption, and substitution that can also support Australia's climate goals.

Within its broad electricity generation portfolio, AGL currently owns and operates gas-fired generation that is connected to both the National Electricity Market (NEM) and the South West Interconnected System (SWIS). As announced in our 2022 Climate Transition Action Plan (CTAP), AGL is committed to pursuing its decarbonisation roadmap and delivering a safe and responsible energy transition for our customers. In this context, while the development of zero-emissions dispatchable generation will be critical, adequate gas supply will also be required to support a successful transition to net zero emissions by enabling flexible gas peaking generation to support a higher penetration of renewables.

AGL is also a retailer of gas to over 1.5 million customers across all mainland Australian states. As AGL continues to support and expand decarbonisation and electrification opportunities for its customers, it also remains a critical priority for AGL to deliver secure, reliable, and affordable energy options to its existing customers. This is of particular relevance given the declining gas supply in the southern states with no replacement production or import facilities.

Future Gas Strategy policy objectives

AGL believes that the policy objectives of gas production, consumption, and substitution should be considered in the context of transitioning to a net-zero economy.

This broader context is important to ensure that the long-term plan and strategy for gas is designed to effectively contribute towards Australia's decarbonisation objectives, the region's decarbonisation objectives, and the achievement of the temperature goals outlined in the Paris Agreement.

We urge the Australian Government to thoroughly examine the specific requirements of each sector affected by the Future Gas Strategy and tailor the proposed strategy and any associated policies accordingly. In our opinion, it is unlikely that a single scheme will adequately address all the needs of the diverse sectors affected by the strategy without supplementary policies.

Future use of gas

Gas use in Australia is primarily comprised of four broad uses: as an energy source for end-use appliances, for electricity generation from gas-powered generation (GPG), for export to international markets, and as an industrial feedstock. AGL's principal interest in gas relates to gas demand for our customers and for gas-powered generation.

AGL supports the rapid transformation of energy systems to support Australia's emissions reduction targets. Nevertheless, forecasts suggest that while steadily declining, gas demand for residential and commercial applications will continue to be material for some time. This is because of the scope of replacing existing gas appliances that would be required to fully electrify, and because of commercial and industrial applications where electrification may be more challenging; for example, feedstock gas and high-temperature process heat applications.

Alongside new transmission infrastructure, DER, storage, and demand response, electricity generation from liquid fuels is also likely to be necessary to support Australia's energy system both now and in the future.

As noted by AEMO in its Integrated System Plan (ISP), GPG is one of the key technologies to provide the firm capacity the power system needs to support high penetrations of variable renewable energy such as wind and solar.[1]

In South Australia we are already seeing the importance of efficient, flexible gas peaking plant in firming a system with high penetration of variable renewable energy. AGL's 210 MW Barker Inlet Power Station (BIPS) can operate at full capacity within five minutes, meaning it provides a rapid response to changes in renewable generation supply. Consisting of 12 reciprocating engines capable of generating about 18 MW of output each, BIPS is also highly flexible and often generates in the morning and evening peaks, when demand from households is high and output from solar is limited.

Although increasingly storage technologies such as batteries and pumped hydro will support the grid, as aging coal generation exits the market, some amount of gas generation will be needed to ensure system reliability. According to generation forecasts to support the optimal development pathway in the 2022 ISP, 10 GW of GPG (along with 46 GW of dispatchable storage capacity and 7 GW of existing dispatchable hydro) is needed by 2050 to efficiently operate and firm variable renewable energy.[2]

Meeting peak demand and ramping challenges, as well as other system services, will require careful market design, and appropriate price signals to ensure all system requirements are always met.[3] Although services provided by new technologies such as inverter-based resources and demand response will have an increasing role in supporting the grid, gas generation currently provides a range of essential system services to the power system, in particular for ramping requirements and system strength. As coal-fired generation continues to exit the market, existing gas generators may increasingly be called upon to provide essential system services while the grid transforms to a fully decarbonised system where services can increasingly be provided by zero-emissions technologies.

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[1] In its 2022 ISP (p52), the Australian Energy Market Operator (AEMO) notes: "Dispatchable resources are needed to firm renewable energy intermittency through all weather conditions across the NEM. Diversity in those firming resources will become more valuable as renewables become the dominant source of generation. That diversity may be both geographical and technological, including gas-fired generation and energy storage of varying depths."

[2] See: AEMO's 2022 Integrated System Plan, page 50

[3] Since 2020, the AEMC has consulted on several rule change projects related to the provision of security frameworks, reserves, frequency services, inertia, system strength, and ramping. AGL strongly supports the development of competitive markets for these services and encourages that work to progress.

At the same time, reliance on gas generation to support the broader electricity grid can also be mitigated through rapid electrification and innovation in customer products and services. Given that AGL considers that residential electrification is the most likely decarbonisation pathway, broader grid impacts may be resolved through better demand management and orchestration of existing and growing CER.

Reliance on gas for some existing applications, notably domestic and commercial heating, may also be able to be significantly reduced by amending standards for new and existing buildings to improve energy performance and efficiency.

We would also emphasise that the Future Gas Strategy should focus on supporting sectors where it is currently difficult to substitute natural gas (e.g. high-temperature industrial processes, such as those for cement kilns and petrochemical plants), rather than sectors where electrification is the more likely decarbonisation pathway.

Role of gas in Australia's net-zero transformation

The role of liquid fuels in the net-zero transition, including natural gas, will vary significantly depending on the specific application, as well as other factors such as access to replacement technologies, cost, and location.

AGL supports a competitive ecosystem that has the right incentives in place to develop a range of technologies to deliver outcomes at the lowest cost. For most applications, we consider that renewable electricity is likely to provide the most cost-effective pathway to accelerated decarbonisation; however, this will not immediately be the case for all applications, especially for some industrial processes where different decarbonisation pathways may be necessary over the short to medium term.

Any approach taken by the government should focus on enabling the broadest range of technologies, products, and services, to provide optionality for existing gas customers. Policies should be designed in such a way that they incentivise early decarbonisation, leverage private co-investment, and unlock the benefits of competitive markets such as product innovation, efficiency, and higher levels of service. Effective funding frameworks are critical to supporting a multi-stage technology ecosystem, while maintaining both reliability and security of supply.

Residential and small business sector

Based on current trends, it appears that electrification is the preferred method of decarbonisation for customers in the residential and small business sectors. According to AEMO's 2023 Gas Statement of Opportunities (GSOO) report, there will be a decline in gas usage and the number of gas connections for small businesses and households due to the shift towards electrification.[4] Moreover, some state governments have implemented measures, which AGL supports, to restrict new residential gas connections and encourage electrification for small customers.[5]

AGL is in a strong position to support the state governments with their electrification ambitions, given the extensive work we have done in this space, including our pilot program Electrify Now discussed in further detail below.

According to the Grattan Report on Getting off gas: why, how and who should pay? (Grattan Gas Report), all-electric homes are cheaper to run, have lower emissions, and are better for people's health. This

[4] See: AEMO's 2023 GSOO (p 32-33)

[5] These include Victoria and ACT. For more details please see the Victorian Government announcement and the ACT Government announcement

technology is also already available and in widespread use, with more than 30 per cent of Australian households already using electric heating, cooking, and water heating.[6]

However, the Grattan Gas Report also acknowledges that there are barriers to the electrification of households and businesses, such as upfront costs, customer preferences, and lack of information.[7] Moreover, customers experiencing vulnerability, renters, and apartment dwellers face further barriers to electrification due to affordability issues and constraints about what fuel they can use and choice of appliances in their home.[8] As such, it is important to provide customers with clear and reliable information about the benefits of switching to electric appliances, as well as incentives and support to overcome the initial costs.

Some key measures would help ensure renters are not left behind on the electrification journey including:

- Implantation of mandatory disclosure of household energy performance for sale and renting of houses.
- Tax incentives for landlords to electrify rental properties.

AGL is committed to helping customers make informed decisions about their energy use and providing them with solutions that suit their needs and preferences.

AGL has launched a pilot program, Electrify Now, which educates customers about the benefits of electrification including the potential cost savings. While still in the pilot phase, the program aims to estimate how much customers can potentially save on their energy bills and reduce their home's carbon emissions. We also offer a range of products and services that enable customers to reduce their emissions and save on their energy bills, such as solar panels, batteries, electric vehicle charging, and green energy plans. Additionally, Electrify Now includes estimates for switching from gas to electricity for hot water and cooktop replacement.

Gas network costs

A key consideration for governments and regulators is how to equitably recover the gas network costs from customers while usage declines, and how to plan for the eventual decommissioning of gas networks.

Gas networks are typically regulated as natural monopolies, and their revenues are determined by the Australian Energy Regulator (AER) based on the expected level of demand and the cost of providing services. As demand falls, the unit cost of maintaining the network increases, and this is reflected in higher network charges for the remaining customers.

The AER has flagged as a critical concern that the current regulatory framework may not be well suited to deal with the rapid and uneven transition away from gas and could result in unfair outcomes for customers who are unable or unwilling to electrify.[9] For example, customers who live in rental properties, apartments, or low-income households may face barriers to switching to electric appliances and may end up paying higher gas bills or being disconnected from the network.

One of the key issues discussed in the AER's final decision for AusNet Gas Services Gas distribution access arrangement 1 July 2023 to 30 June 2028 (AusNet's Access Arrangement Determination 2023-28)

[6] Grattan calculation based on Energy Networks Australia (2021) and Gas Energy Australia (2023). For further details, see p14 of the Grattan report on Getting off gas: why, how and who should pay?

[7] See: page 20 of the Grattan report on Getting off gas: why, how and who should pay?.

[8] See: page 22 of the Grattan report on Getting off gas: why, how and who should pay?

[9] See: AER's final decision for AusNet's Access Arrangement Determination 2023-28

was a hybrid cost recovery method for the abolishment of gas supply. In the course of AusNet's review, the AER became aware that some customers, who are choosing to move away from gas, are avoiding a higher charge by seeking temporary disconnection measures designed for a short-term pause of supply rather than the safer, permanent removal of connection assets. One of the safety concerns that have been raised with this approach include concerns that, over time changes in property ownership will further increase the safety risk, as the new owners may be unaware of the live gas assets within the premises.[10]

As such, the AER decided that while paths to electrification are still uncertain, and to reduce the price difference between the two disconnection services, there be an upfront cost of $220 for connection abolishment and the remainder to be shared between all customers. The AER noted that this was not a long-term solution and will put upwards pressure on haulage tariffs in the 2023-28 period until a more sustainable solution is identified. This will be a key consideration for the AER for future determinations, especially if in future periods we see a further decline in demand and an increase in customers leaving the network, meaning that the upwards pressure on tariffs for remaining customers will only grow.[11]

AGL would also support further consideration of more efficient processes for bulk gas abolishments, as opposed to mechanisms that simply support abolishing connections on a house-by-house basis.

Similarly, GPG, which provides an important role in supporting the electricity system through the transition, may face higher gas costs or reduced availability of gas supply.

Some potential options to help address these issues include:

- Implementing a clear process for customers who disconnect from the gas network including the process to disconnect and/or abolish gas meters by networks.
- Providing subsidies or incentives for customers who face barriers to electrifying, such as low-income households, renters, and apartment dwellers, to help them access more efficient and affordable electric appliances.
- Developing a long-term strategy for the future role of GPG in the electricity system and ensuring that gas network costs and charges are aligned with the value that GPG provides to the grid. This could include assessment of the cost of alternatives to pipelined natural gas for generation that may only be required infrequently, given that at low utilisation the higher cost of some options could compare favourably to gas from pipelines.
- Establishing a clear and consistent policy framework for the decarbonisation of the gas sector and supporting the development and deployment of renewable gas alternatives, such as biogas and hydrogen.
- Engaging with gas network owners and operators, customers, and other stakeholders to develop a coordinated and consultative approach to the planning and management of gas network assets and ensuring that network investment decisions reflect the changing demand patterns and customer preferences. A key issue will be in striking a balance between the risk placed on consumers and the risk placed on distribution networks in the energy market transition. If future access arrangement periods see a winding down of gas networks, there could be fewer customers to share the fixed costs of the network over time. This could result in customers who cannot afford to electrify facing higher bills, raising equity concerns. As such, this issue needs to be considered within the context of

[10] See: AER's final decision for AusNet's Access Arrangement Determination 2023-28, page 7

[11] See: AER's final decision for AusNet's Access Arrangement Determination 2023-28, page 7 and AGL's submission to Gas Distribution Network Tariffs Review 2023

ensuring that customers who may be still reliant on gas are paying no more than necessary for a safe, reliable and secure supply.[12]

These options should be assessed against the criteria of efficiency, equity, reliability, security, and environmental sustainability, and should be informed by robust analysis and evidence. The government should also ensure that any changes to the gas network regulatory framework are consistent with the broader energy market reforms and objectives and support the transition to a low-carbon economy.

Workforce transition

Demand for new skills and trades will only increase as we move further down the path of the energy transition, especially for electricians and/or tradespeople with electrical licences. Electrifying Australian homes will mean a surge in demand for electricians and/or tradespeople with electrical licences, but a decline in demand for the installation and maintenance of gas appliances.

To ensure that the energy transition is not slowed down by a lack of a skilled workforce, the Australian Government should invest in up-skilling workers to take advantage of the expected surge in demand for electricians and/or tradespeople with electrical licences. Plumbers could help fill the trades gap, as restricted electrical licence could be added to the Certificate III in plumbing. This would allow plumbers to install appliances such as reverse-cycle air-conditioning units and heat pumps for hot water and should only add an extra eight days to an apprenticeship according to the Plumbing and Pipe Trades Employees Union Vic and WA. And existing plumbers – who have a four-year apprenticeship under their belt – should be helped to extend their skills to include electrical work. An example of this is the free training program that Solar Victoria has introduced for plumbers and fourth-year plumbing apprentices to design and install energy-efficient heat pumps and solar hot water systems.[13]

Furthermore, the skills and infrastructure that underpin today's gas sector will be very valuable during the transition to lower emissions energy and energy intensive commodities such as low-emissions gases, green ammonia, and green steel. The Australian Government should look to put policies in place to ensure that these skills and infrastructure are utilised to their fullest potential.

Supply of gas

According to the 2023 GSOO, the gas supply outlook for Australia is becoming increasingly challenging.

The 2023 GSOO presents a range of scenarios that reflect different assumptions about gas supply and demand drivers, such as economic growth, population, weather, energy policies, and technology trends. Under all scenarios, the GSOO identifies a potential gap between gas supply and demand in the next decade, driven by declining production from existing fields and uncertainty about new sources of supply.

AEMO states in the GSOO that the annual physical gas supply from existing, committed, and anticipated production is forecast to be adequate before 2027, but that investments will be needed in the near term to ensure adequate gas supply from 2027, despite falling gas consumption. As such, AEMO forecasts that demand will exceed supply within a decade in both the east coast and Western Australian markets, even with significant household electrification, with the south-eastern states facing reliability risks on peak days in winter. This tight supply will likely also be reflected in gas prices that are likely to be higher than historic averages.

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[12] See: AGL's submission to Gas Distribution Network Tariffs Review 2023

[13] See: Solar Victoria's webpage.

AEMO also forecasts that peak day gas demand for National Electricity Market power generation is likely to nearly double over the next decade and become increasingly concentrated on winter days that coincide with high gas use for heating. This increasing peakiness will require investment in flexible supply assets to deliver sufficient gas on peak demand days.

In this context, AGL recognises the importance of ensuring sufficient gas supply to meet the needs of its customers and for GPG to support the electricity grid.

Given the projected shortfalls in gas over the medium term, AGL is therefore exploring various options for enhancing gas supply security and diversity, such as active engagement and support of smaller producers to underwrite new gas supplies, partnerships with third-party LNG import projects as a key source of flexible and scalable gas supply, and pursuing opportunities for renewable gas, such as hydrogen and biogas. AGL also supports a coordinated and consistent policy framework that enables efficient investment decisions and fosters innovation in the gas sector. By doing so, AGL aims to contribute to the ongoing transition to a low-carbon energy system and deliver value to its stakeholders.

Electrification opportunities in gas production and transportation

There are material opportunities to reduce gas use in the production and transportation of gas, thereby freeing up additional gas for domestic consumption. Queensland LNG terminals currently use 100 PJ/a of gas to compress gas, and electrifying the compressors would free up gas and increase power demand. In FY20, the federal government supported a feasibility study into the electrification of Gladstone LNG import terminals, and Santos is currently doing a feasibility study on electrification at Curtis Island. A further opportunity is the electrification of compressor stations on pipelines. APA is looking into electrifying their compressors and plans to spend $150-170 M to electrify these to 2030. Some stations are remote and would require their own microgrids to run on renewables.

In our view, there is merit in pursuing these proposals to free up as much gas as possible for end-use consumption.

Feasibility of alternatives to natural gas

AGL is very supportive of alternatives to natural gas for some specific use cases, including electrification, biogas, and hydrogen.

To support the transition of high emission industries to a cleaner future, in 2022 AGL acquired Energy360 Pty Ltd (Energy360). Energy360 is a leading provider of solutions for sustainable energy systems, by producing biogas through the break-down of residue organic materials in an oxygen-free environment, providing an effective renewable solution for commercial and industrial customers within agricultural, landfill, food processing, and waste management industries. These are behind the meter solutions which are providing strong decarbonisation solutions for AGL customers. Energy360 is also developing projects which will upgrade biogas to biomethane for grid injection and participation in the Green Gas Certification process.

Given this, AGL considers that biomethane, in particular, is likely to provide a promising short-term solution to substitute natural gas in the commercial and industrial sectors while helping meet Australia's decarbonisation and energy security objectives.

As mentioned above, AGL has also launched a pilot program, Electrify Now, which supports customers looking to switch away from natural gas appliances such as gas heating, gas hot water, and gas cooktops.

Small customers' preference for electrification should be considered when considering the role of renewable gases going forward. It is our view that the Future Gas Strategy should focus on supporting sectors where it is currently difficult to substitute natural gas (e.g. high-temperature industrial processes, such as those for

cement kilns and petrochemical plants), rather than sectors that already have a clear decarbonisation pathway through electrification (e.g. residential and small business sector).

To drive residential and small business electrification at pace and at scale, government support is essential. Through the right incentives, regulatory frameworks, and policy settings, governments can ensure electrification is a feasible alternative to natural gas.

We look forward to working closely with the federal government as they continue to develop their gas strategy.

Should you have any questions in relation to this submission, please contact Leilani Kuhn (Policy Manager) on 03 8633 6934 or myself on 0409 533 584.

Yours sincerely,

Chris Streets

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