



14 August 2026

Submission: NSW Net Zero Commission – Call for Evidence on the development of NSW-specific decarbonisation pathways

The Australian Pipelines and Gas Association (APGA) represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure. Our members deliver more than 1,500 PJs of natural gas each year for domestic use and over 4,500 PJs for export markets, underpinned by the highest standards of safety, reliability and operational performance. For decades, this infrastructure has been a cornerstone of Australia's economic strength, providing secure, low-cost energy that has supported growth, sustained long-term trade, and enabled industry to compete globally.

APGA welcomes the opportunity to comment on the NSW Net Zero Commission's call for evidence on developing NSW-specific decarbonisation pathways. It is critical that this work consider the economy as a whole and approaches decarbonisation from a least-cost perspective that retains system reliability and resilience, and the real costs and benefits of sector-specific decarbonisation opportunities.

Key messages

Gas pipeline infrastructure currently and will continue to play an important role in NSW's energy system, particularly where it supports reliability, industrial activity and practical decarbonisation pathways.

Gas infrastructure is an economic enabler that provides access to energy for millions of existing customers in NSW, including businesses that cannot electrify easily, affordably or within required timeframes. Gas infrastructure supports an orderly transition to a low-emissions economy, where gas powered generation can ensure coal-fired generator retirements can go ahead as planned, and supports higher penetration of variable renewable energy through providing firming and other system services. In the future, these gas uses can be decarbonised through providing an efficient and cost-effective distribution pathway for renewable gases.

In developing NSW-specific decarbonisation pathways, APGA recommends the Net Zero Commission consider:

- Prioritising ending coal-fired power generation as early as possible, by ensuring dispatchable firming is available including flexible gas-powered generation.

- NSW's existing gas infrastructure assets are vital to support that transition and maintaining the viability of gas networks should be a key consideration when designing decarbonisation policy settings.
- Decarbonisation of gas infrastructure is a key priority for asset owners and operators, but reform to national frameworks is needed to enable investment in necessary capital.
- Renewable gases will support the decarbonisation of remaining gas use and the development of new industries, with NSW well-placed to accelerate the development of a healthy renewable gas industry.

APGA also recommends that any modelling inputs and assumptions used to support the development of NSW-specific decarbonisation pathways be published, to ensure transparency of process for all stakeholders.

Prioritise the transition off coal-fired generation

Retiring coal-fired generators is one of the biggest emissions reduction actions NSW can undertake. For this reason, NSW should prioritise ending coal-fired power generation as early as possible. For that to occur, NSW must ensure sufficient dispatchable firming is available, including flexible gas-powered generation where it provides reliability services that storage, demand response, or other resources cannot cost-effectively provide.

In 2023, APGA commissioned Boston Consulting Group (BCG) to consider the role of gas in Australia's energy transition.¹ Amongst its findings, BCG determined that the highest-value near-term use of additional renewable electricity is displacing coal-fired generation, particularly where this also enables decarbonisation across the economy over time, while placing commensurate value on the role of gas transmission and distribution networks in the Australian economy.

Any additional electricity demand from electrified gas use will only deliver its full emissions benefit where it is matched by sufficient renewable generation, network capacity, storage and firming. While coal-fired generation remains material in NSW, abrupt sequencing of electrification first will affect near-term emissions outcomes. This will remain true until there is sufficient renewable generation to take on the bulk load of energy generation, and for that to occur there needs to be accompanying transmission infrastructure and dispatchable firming capacity.

While batteries and pumped hydro will be able to manage much of this load, significant gas-powered generation will be needed to manage periods of low renewable output and

¹ Boston Consulting Group, 2023, *The role of gas infrastructure in Australia's energy transition*, <https://apga.org.au/research-and-other-reports/the-role-of-gas-infrastructure-in-australias-energy-transition>

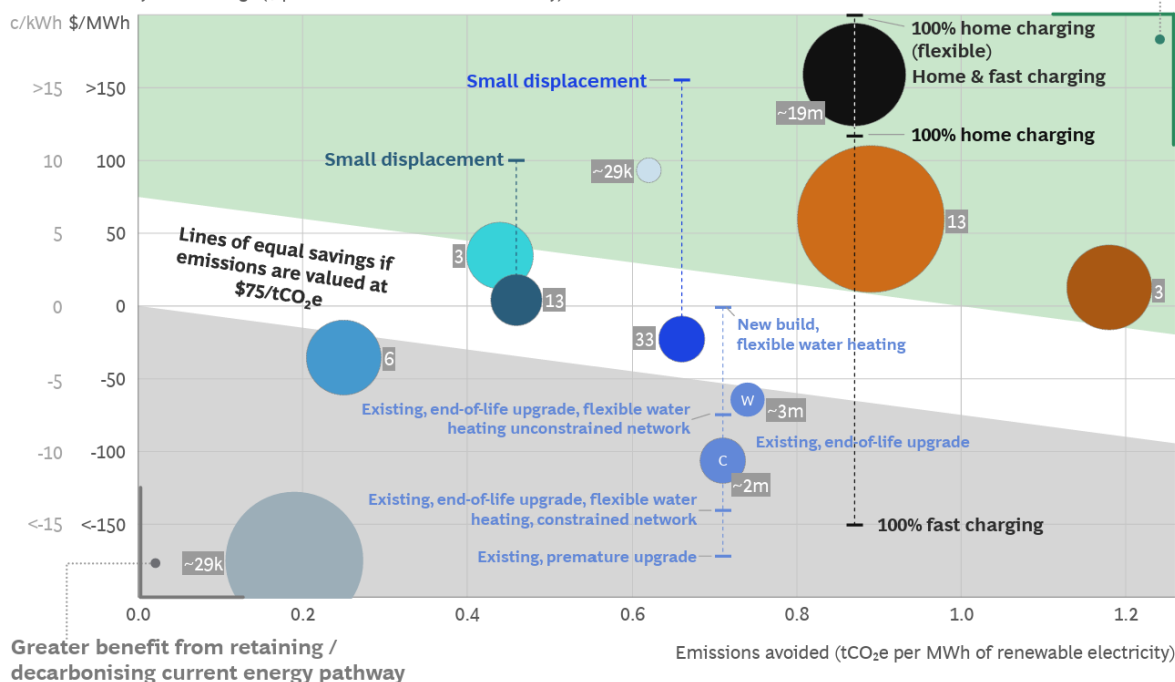
provide energy system services – by 2050, approximately 17 GW of flexible gas-powered generation in the National Electricity Market, much of which will need to be in NSW.²

Exhibit 6: Grid-connected renewable electricity will have the greatest impact if first used to displace coal generation and liquid fuels

Benefits of deploying 1 MWh of grid-connected solar/wind

Excludes renewable energy generation and transmission costs for all end uses

Estimated net system savings (\$ per MWh of renewable electricity)



Legend

Black: Liquid fuels

● Light electric vehicles

Brown: Solid fuels

● Black coal-fired generator

● Brown coal-fired generator

Number of end users

Blue: Gaseous fuels

● Low grade industrial heating

● High grade industrial heating

● Feedstock¹

● Mid-merit gas (CCGT)

● Residential & commercial heating (cold climate)

● Residential & commercial heating (warm climate)

● Peaking gas (OCGT)

● LNG trains

Note: Bubble size represents total annual volume of renewable electricity required to meet demand

1. Analysis based on methane gas substituted with green hydrogen produced from grid-connected electricity

Source: AEMO ISP (2022); OpenNEM; CSIRO; ABS; AIP; Frontier Economics (2022); Advisian, CEFC (2021); BCG analysis

APGA also notes that market forces have driven a large recent uptake in electric passenger vehicles, and successive government support schemes have underwritten considerable uptake in household solar and battery systems. Any future policy to further drive household electrification should consider the Victorian experience, where electricity distributor CitiPower recently found that customers who electrified doubled their grid electricity

² AEMO, 2026, 2026 Integrated Systems Plan, <https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2026-integrated-system-plan-isp>

consumption overall and quadrupled it in winter.³ Given this electricity is mostly coal-powered, this will act to increase emissions rather than reduce them.

Gas infrastructure key to supporting that transition

NSW's existing extensive gas infrastructure will support the transition away from coal-fired generation now and the viability of commercial and industrial gas-reliant businesses and will help decarbonise that gas use in the future by delivering gas when and where it is needed.

For this to occur, maintaining the viability of gas networks should be a key consideration when designing decarbonisation policy settings and pathway modelling should account for how these settings affect gas network utilisation, cost allocation and the ability of remaining users to access practical decarbonisation options.

Particularly for gas networks, policies that artificially accelerate declines in network utilisation, or materially reduce utilisation of existing assets before viable alternatives are ready or available at scale, introduces the risk of increasing costs on remaining users. It would also undermine the investment case for any new greenfield or brownfield infrastructure that may be needed to manage different gas delivery patterns in the transition. These factors would impact the ability of gas networks to support remaining gas users who cannot electrify, and the gas-powered generation necessary to firm a largely renewable grid. It would also impact serviceability of new sources of demand, such as data centres.

Decarbonising gas infrastructure is a priority for operators

Transmission and distribution pipeline emissions are very small overall part of the total gas supply chain scope 1 emissions, although this is difficult to quantify because across all Safeguard Mechanism gas sector facilities, there are very few pipeline facilities over the threshold. Reducing pipeline emissions, both from routine operation and fugitive emission sources, is nevertheless a key focus for gas transmission pipeline operators, and while this is mostly governed by Federal legislation (particularly, the *National Greenhouse and Reporting Scheme* (NGERS) framework and the Safeguard Mechanism), the NSW Government needs to understand what pipeline operators are already achieving in this space.

Exactly how to do this remains up to each asset owner. In 2024 APGA commissioned Worley⁴ to study emissions reduction opportunities for Australia's gas transmission network and provide advice to asset owners on key decarbonisation opportunities. This

³ CitiPower, 2025, *2026-31 Revised Proposal – Revenue and Expenditure Forecasts*, available at <https://www.aer.gov.au/industry/registers/determinations/citipower-determination-2026-31/revised-proposal>

⁴ Worley Consulting, 2024, *Australia's pipeline methane and gas combustion emissions reduction opportunities*, <https://apga.org.au/en-au/pipeline-methane-and-gas-combustion-emissions-reduction>

analysis, published as *Australia's pipeline methane and gas combustion emissions reduction opportunities*, identifies strategies to reduce both fugitive methane and gas combustion emissions, relative to an assumed carbon price to determine best value. The largest abatement opportunities are the centrifugal compressor seal gas recovery opportunities and implementing leak detection and repair programs, and the latter is a particular focus of pipeline operators.

For the Commission's pathways, this means pipeline emissions assumptions should reflect both current accounting limitations and emerging abatement opportunities. Efforts to decarbonise can be hampered by existing frameworks; for example, the NGRS framework currently only permits coarse estimates of fugitive emissions for gas transmission infrastructure. This approach does not permit facilities to demonstrate *changes*, including reductions, in those emissions estimations or differentiate, for example, between leaking components and non-leaking components. This requires "higher order" methods, which are not currently available for transmission pipelines or indeed the majority of the resources sector.

The Federal Government has convened an expert panel to provide advice on the development of higher order methods for all emissions sources, to report by mid-2027, but its immediate focus is on open-cut coal mines.

APGA appreciates that changes are required at the national level to ensure gas transmission infrastructure has sufficient frameworks and incentives to commit capital to fugitive emissions-reducing programs. The NSW Government should consider where it can support improved emissions measurement and abatement incentives by engaging clearly through national processes, including the Energy and Climate Ministers Council, where relevant.

Renewable gas will help decarbonise remaining gas use

While natural gas use will likely continue for decades to come, decarbonising that gas use is of paramount importance to APGA which supports a net zero emission future for Australia by 2050.⁵ APGA considers renewable gases such as hydrogen and biomethane can play a critical role, particularly where electrification is technically difficult, costly or delayed.

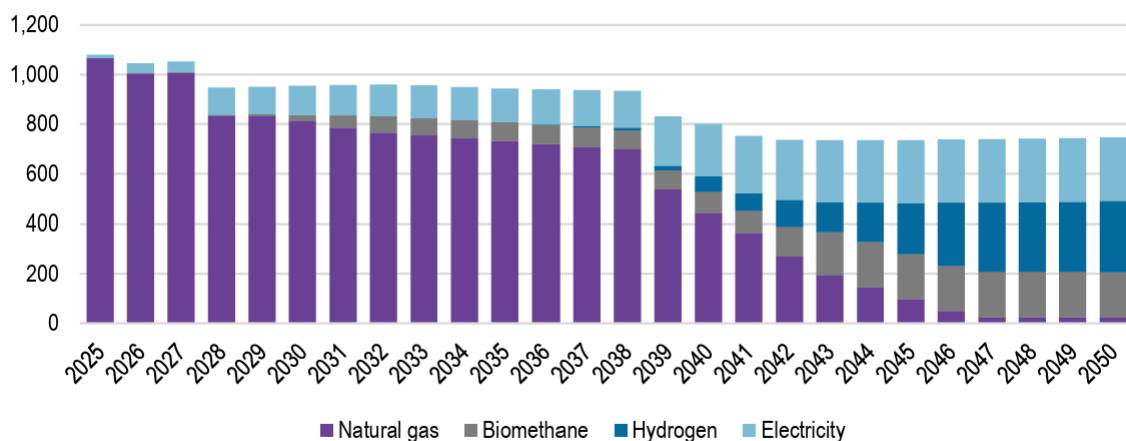
In 2024 commissioned ACIL Allen to consider optimal policy trajectories for the rollout of renewable gases.⁶ It found that under favourable policy settings (the Optimal RGT scenario), including a national renewable gas target, the renewable gas industry can scale

⁵ APGA, *Climate Statement*, available at: <https://www.apga.org.au/apga-climate-statement>

⁶ ACIL Allen, 2024, *Renewable Gas Target – Delivering lower cost decarbonisation for gas customers and the Australian economy*, <https://apga.org.au/renewable-gas-target>

sufficiently to provide least-cost decarbonisation for a range of industries, especially with early roll-out of biomethane:

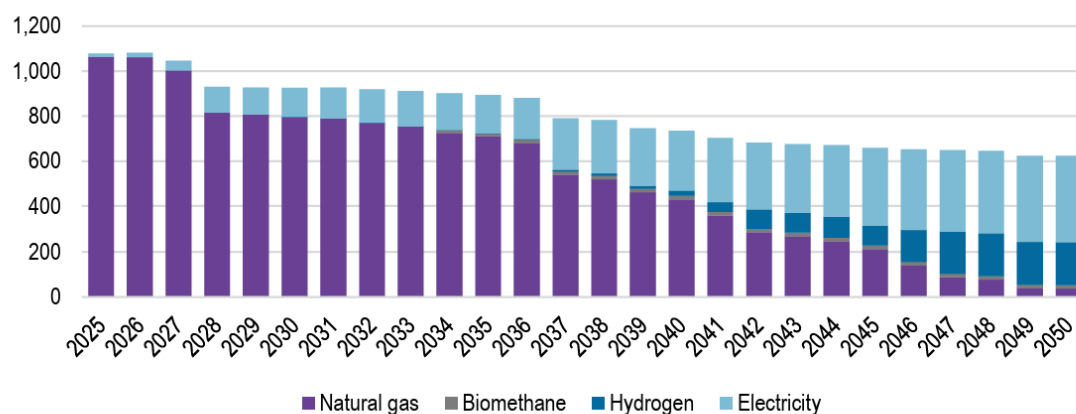
Figure 3.27 Fuel mix: Optimal RGT scenario (PJ)



Source: ACIL Allen Gas Transition Model

Even under ACIL Allen’s modelling Electrify Everything Possible scenario, there remains a meaningful role for gas energy, provided in this case by green hydrogen given the close relationship between renewable electricity production and hydrogen production through electrolysis:

Figure ES 8 Electrify Everything Possible scenario fuel mix (PJ)



Source: ACIL Allen Gas Transition Model

NSW has significant biomethane feedstock potential, and APGA has been pleased to work with the NSW Government on identifying factors to support aggregation. Because biomethane is effectively a drop-in replacement for natural gas, it can be injected into NSW’s existing gas networks and used wherever natural gas is, avoiding the technical challenges of its hydrogen competitor, or the electrification alternative. It also provides circular economy benefits and other revenue streams, such as CO₂ and digestate.

APGA understands that work is underway through NSW DCCEEW to develop a feedstock strategy and audit for the state, as well as address barriers to investment in biomethane. APGA also supports NSW's approach through the Renewable Fuel Scheme, which acts as a renewable gas target to provide a strong demand signal to the market. But more needs to be done to provide a signal that the NSW Government considers renewable gas to be a viable and scalable option, not just a remaining option second to electrification for hard-to-abate gas users.

Enabling renewable gas pathways can support emerging low-emissions industries, including green metals, by allowing staged transitions from coal to natural gas and, over time, to renewable gases where technically and commercially viable.

Australia's largest steel manufacturer and one of NSW's heaviest emitters, BlueScope is currently investigating options for low-emissions iron and steelmaking in Australia, including through Direct Reduced Iron (DRI) technology and for renewable gases to directly power blast furnaces. This will require use of natural gas to manufacture DRI until green hydrogen becomes viable in the late 2030s or 2040s. DRI processes can be configured to use natural gas and transitioned (at relatively low cost) to hydrogen once it is price competitive.

The Commission's net zero pathways should continue test renewable gases, especially near-term biomethane, as part of an efficient transition via one or more of the identified pathways. Enabling staged transitions from coal to natural gas and, where available, renewable gas can help preserve industrial competitiveness while reducing emissions over time.

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