BUSINESS NSW

RUNNING ON EMPTY 2.0

The evolving role of gas in NSW

Expressway Spares | Port Macquarie | Member since 2011

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Foreword

The cost and availability of gas is a critical issue for many NSW businesses, particularly those unable to electrify industrial processes such as heating, refining and reforming. Business NSW's August 2024 *Business Conditions Survey* found 18 per cent of all businesses, and 64 per cent of those in the Accommodation and Food Services sector, are reliant on gas. These are not legacy users; they are essential contributors to the state's economy and employment base.

Yet the east coast gas market remains dysfunctional.

Structural shortfalls in domestic supply are forecast from 2029, with early warning signs already visible in price volatility and contract insecurity. Despite approvals for new supply projects, including the Narrabri Gas Project, these have yet to deliver gas to market. This is eroding investment confidence and threatening business certainty.

NSW's path to net zero must also be a path to industrial resilience.

Gas is not just a transitional fuel. It is foundational to energy security, manufacturing strength, and sovereign capability. Without urgent investment and policy certainty, NSW faces higher costs, lost jobs, and declining competitiveness.

Business NSW has consistently advocated for the responsible development of domestic gas to maintain energy reliability, reduce the risk of price shocks, and ensure a smooth transition to lower emission alternatives. Gas is not merely a bridging fuel; it is an enabler for Australia's industrial economy. Until cost-effective, scalable alternatives are commercially viable, gas will remain essential for manufacturing, minerals processing and heavy industry.

This is also a matter of economic sovereignty. In an increasingly protectionist global environment, Australia must safeguard its industrial capacity and secure access to the critical inputs that power it. Reliable, affordable gas, alongside low-cost renewables, underpins domestic production, attracts investment and supports regional jobs. Without it, we risk ceding ground in strategic industries and losing control over core parts of our economy.

The Albanese Government's Future Made in Australia agenda depends on the competitiveness of domestic manufacturing. That cannot be achieved without reliable, affordable energy. The NSW Government must work with its federal and state counterparts, industry, and the entire gas supply chain to unlock new supply, address regulatory delays, and support the development of renewable gases. Without decisive, coordinated government action, NSW's industrial future, and Australia's manufacturing ambitions, will be at risk.

Dan Hunter

About us

Business NSW is the peak business organisation for New South Wales representing the needs of 48,000 businesses across the state.

Our purpose is to create a better Australia by maximising the outcomes and potential of Australian businesses. We achieve this by working with businesses spanning all industry sectors including small, medium and large enterprises.

Operating through our network in metropolitan and regional NSW, and with our state chamber partners, Business NSW represents the needs of business at a local, state and federal level. This is why when we speak, the government listens.

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Introduction

New South Wales is at a critical point in its energy transition.

This report sets out a plan to safeguard the state's energy security, industrial competitiveness and sovereign capability by ensuring gas remains a reliable, affordable and evolving part of the transition to net zero.

Gas supplies approximately 27 per cent of Australia's primary energy[1]. Nationally, about 1500 petajoules of domestic gas are consumed each year, with 70 per cent used directly by industry, 15 per cent in electricity generation, and the remainder in homes and commercial settings[2]. In NSW, gas is fundamental to manufacturing, mining, agriculture and small business. More than 1.5 million households and 50,000 small businesses are connected to gas networks, and about one-third of small customers use gas to meet part of their energy needs[2,3].

However, gas is more than a fuel. It is a critical industrial input that underpins high-value production. From fertiliser and explosives to alumina, food processing, bricks and glass, many of NSW's key exports and regional employers rely on reliable, affordable gas. It supports trade competitiveness, supply chain resilience, and the productivity of industries central to the state's economic future.

NSW's export profile reveals a growing vulnerability. The state exports over $33 billion in coal annually, more than the combined value of its next nine largest export products, including gold, aluminium, beef and cotton, with an extra $10 billion to spare[4]. This reliance on a single commodity leaves NSW exposed as global demand for coal declines. Unless this revenue is replaced, the consequences will extend beyond the resources sector.

A widening national trade deficit would place downward pressure on the Australian dollar, increasing the cost of imports, including the clean technologies essential to the energy transition. This would not only slow decarbonisation but also drive up business costs across the economy.

To achieve net zero, NSW must move beyond raw energy exports and invest in value-added production at home. By leveraging domestic gas alongside renewables, NSW can develop and support gas-enabled sectors, such as clean metals, fertilisers, explosives, advanced materials and renewable fuels. This will reduce import dependency, create skilled jobs, and build lasting economic resilience.

Business NSW's *Running on Empty* report in 2019 warned of looming gas supply shortfalls and called for urgent action. Since then, the energy landscape has shifted dramatically. NSW has legislated a net zero target by 2050, with interim goals of a 50 per cent emissions cut by 2030 and 70 per cent by 2035. Meanwhile, global shocks, such as the war in Ukraine and instability in the Middle East, have disrupted international energy markets, increased prices, and highlighted the need for secure, affordable domestic supply.

One thing is now clear: renewables will do the heavy lifting in decarbonising our electricity system, but they cannot do it alone, at least not yet. Gas provides stability, meets peak demand, and supports industries that can't yet be electrified. A secure and reliable gas supply is essential to avoiding economic disruption, especially in trade-exposed and regionally based industries.

NSW is not alone in confronting these pressures.

Gas production from southern basins is declining, pipeline infrastructure is constrained, and demand across the east coast remains strong. The Australian Energy Market Operator forecasts seasonal shortfalls in 2028 and structural shortfalls in 2029[5]. Without swift action to unlock new supply, expand transmission and storage, and provide greater investment certainty, NSW faces higher prices, falling business confidence and weakened industrial capability.

This is no longer just an energy issue; it is an economic and strategic one.

Gas is central to maintaining competitive manufacturing, reducing business costs, and achieving national ambitions to rebuild sovereign capability. Its role will remain vital well beyond 2030, and in some sectors beyond 2050.

Gas and renewables are not in conflict; they are complementary. Gas-fired generation supports a reliable, renewable electricity grid. Existing infrastructure can be repurposed to transport low- and zero-carbon gases such as biomethane and hydrogen. With the right policies, NSW can lead the way in developing a renewable gas industry that supports both decarbonisation and economic growth.

The transition must also be fair. Households and businesses already face higher energy bills, and many feel excluded from the benefits of decarbonisation. If public confidence is to be maintained, energy must remain affordable across regions, sectors and income groups.

This report revisits the 2019 recommendations, reviews progress and presents a refreshed policy agenda. It identifies the actions needed to reduce short-term supply risks, support industry through the transition, and position NSW as a leader in clean energy, advanced manufacturing and long-term economic resilience.

Summary of recommendations

Unlock new sources of natural gas

Business NSW has long argued for the importance of timely domestic supply. However, Narrabri alone is not sufficient. Additional options must be unlocked and facilitated through a market-led approach that supports credible, investable projects without picking winners. Together, they will ensure NSW has a credible, least-cost, market-led pathway to secure gas supply, preserve industrial competitiveness, and support new domestic value creation through the transition.

Recognise the role of gas infrastructure in the energy transition

Business NSW recognises that infrastructure decisions made today will shape the gas system of 2050. To enable continued investment and manage a stable transition, the NSW Government should treat gas infrastructure as a long-term enabler of economic resilience. NSW should recognise gas infrastructure, like pipelines, storage and distribution networks, as strategic transition assets.

Policy reforms are needed to restore confidence for infrastructure investors, prevent stranded asset risk, and ensure NSW retains a flexible, affordable and future-ready energy delivery system. Without reforms, the state risks underinvestment, higher transition costs, and the premature decline of critical industrial infrastructure.

Enabling the low-carbon NSW economy of the future

As NSW moves toward its legislated net zero targets, attention must turn to how the state decarbonises industry sectors that cannot readily electrify. For these sectors, renewable gases such as biomethane, e-methane and green hydrogen offer a pathway to deep decarbonisation while retaining energy flexibility and industrial productivity.

The NSW government must put in place the investment, regulatory and market frameworks needed to activate a domestic renewable gas industry. This industry can support clean manufacturing, regional development and economic resilience through the transition.

Ensure a reliable transition to low emission electricity

Long-duration gas generation can ensure a stable and reliable electricity system as coal exits the grid. However, current market settings do not provide sufficient investment signals for these assets to remain viable, let alone expand to meet future demand.

NSW should adopt a tailored, state-based capacity mechanism that would provide the certainty needed to retain and invest in critical firming assets, support orderly coal retirements, and ensure the grid remains stable, resilient, and ready for a high-renewables future.

Trent Davis | Frankie's Cafe and Catering | Member Since 2022

Previous recommendations from Running on Empty (2019)

In 2019, *Running on Empty* made four clear recommendations to ensure the long-term security and affordability of gas supply in NSW:

01.
Develop new sources of supply

02.
Strengthen the interstate pipeline network

03.
Facilitate construction of an LNG import terminal

04.
Appoint a senior coordinator to drive critical gas infrastructure delivery

Since that time, material progress has been made on several fronts. But key challenges remain, and the urgency has only grown. With structural shortfalls forecast from 2029, and investment uncertainty weighing on new projects, NSW must take stronger, more deliberate steps to secure long-term supply, support industry, and future-proof its energy system.

Previous recommendations, and their progress since the Running on Empty (2019) paper:

01. Develop new sources of supply (Narrabri Gas Project)

- Approved by the NSW Independent Planning Commission in 2020.
- Intended to meet up to 50% of NSW's gas demand for 20+ years.
- Final investment decision delayed by legal challenges (FID), including a 2024 Federal Court ruling on native title.
- Santos now targeting FID in 2025, pending resolution of land access and environmental approvals.

02. Strengthen the interstate pipeline network

- APA has added ~25% capacity to the East Coast Gas Grid since 2019.
- In 2025, APA announced a five-year plan to expand north–south capacity by another 24% - but this investment has not reached FID.
- Jemena is on a critical path to reverse the Eastern Gas Pipeline to enable southbound flow from Port Kembla to Victoria.

03. Facilitate LNG import terminal construction

- **Port Kembla Energy Terminal**: Delivered by Squadron Energy in December 2024.

  - Capable of supplying over 70% of NSW's annual gas needs.

  - Provides 10–12 days of storage to improve resilience during supply interruptions.

- **Newcastle (EPIK)**: Declared economically unfeasible and cancelled in 2023 due to global LNG price volatility.

04. Appoint a coordinator for critical gas projects

- NSW Government did not appoint a dedicated coordinator.
- However, it released a *Future of Gas Statement* in 2020 and committed to a Gas Decarbonisation Roadmap by 2026.

The evolving role of gas

Australia's energy policy environment has shifted dramatically since 2019. The transition to renewable electricity has accelerated, with renewables contributing more than 39 per cent of total generation in 2023. However electricity is only one component of an energy system. The path for gas remains more complex, shaped not only by domestic policy but by global instability.

Russia's invasion of Ukraine in 2022 upended international energy markets, forcing Europe to rapidly pivot away from Russian gas which put significant upward pressure on global gas prices. More recently, unrest in the Middle East has further disrupted global oil and gas flows. These shocks have brought energy security back to the centre of policy decisions around the world.

Gas as a strategic enabler

Gas continues to supply around 27 per cent of Australia's total energy needs. In NSW, more than 40 per cent of all gas is used by industry, with the rest serving households, commercial businesses, and electricity generation[2]. Over 1.5 million households and 50,000 small businesses rely on gas for heating, cooking, and hot water[3].

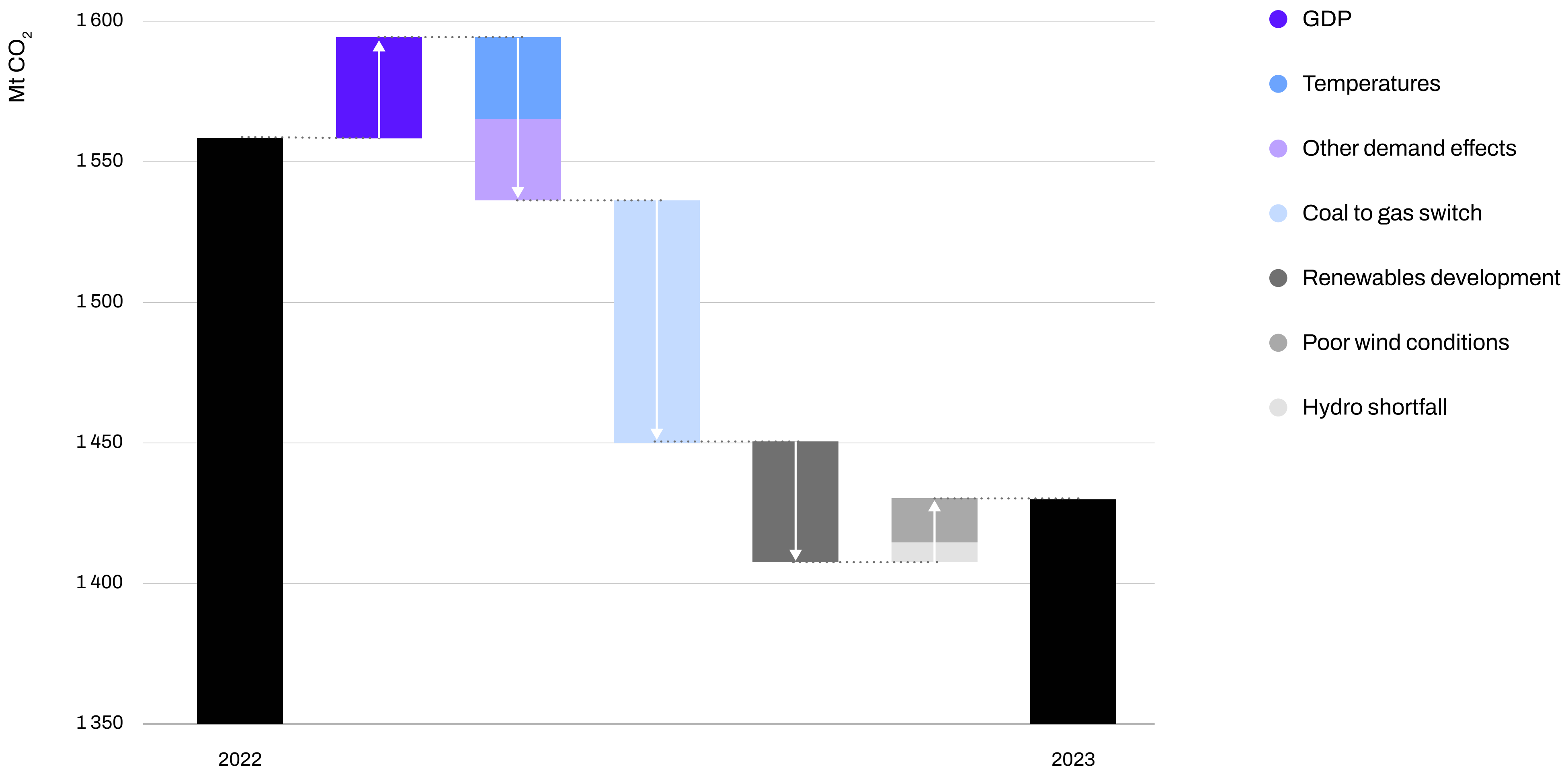
In regional NSW, gas supports food processing, agriculture, and heavy industries – many of which cannot be electrified. This is not just a matter of energy supply; gas underpins the industrial capability of the state. As other countries invest in energy security and sovereign supply chains, Australia must ensure gas remains affordable, available, and reliably delivered to its key sectors.

Supporting grid stability and decarbonisation

Gas-powered generation (GPG) plays a crucial firming role in the electricity system. It provides fast-start capacity during peak demand and when solar and wind output are below demand requirements. AEMO modelling consistently shows that gas will be increasingly required through the 2030s and into the 2040s to maintain reliability and affordability.

Importantly, gas does not just support renewables, it accelerates the displacement of coal. In the United States, the coal-to-gas switch was one of the largest drivers of emissions reductions in electricity generation between 2022 and 2023, as shown in Figure 1 by the International Energy Agency[6]. This shift cut over 75 million tonnes of CO2 emissions in a single year – more than the combined impact of all renewable energy projects in the US, **even if emissions savings were doubled.**

Figure 1. Change in CO2 emissions from electricity generation in the United States by driver, 2022-2023.



This lesson matters for NSW. With the Eraring Power Station already extended beyond its initial planned closure date, system planners must consider how firm, lower-emission GPG can complement renewables while reducing reliance on higher-emission legacy coal.

Without adequate firming, electricity costs rise, reliability suffers, and decarbonisation slows. In this context, gas enables, not competes with, the transition.

Essential for industry and exports

Gas is indispensable to industries that require high heat or use it as a chemical feedstock, including cement, steel, fertilisers, chemicals, explosives, bricks and glass. These sectors are foundational to Australia's construction, agriculture, mining and manufacturing economies and will continue to rely on gas well beyond 2050.

While some lower-heat industrial processes may transition to electricity over time, many high-temperature or continuous-process applications cannot. This is reflected in AEMO's long-term forecasts, which project industrial gas demand to remain largely stable over the next two decades, driven by the enduring needs of energy-intensive and trade-exposed industries.

Crucially, maintaining secure and affordable onshore gas supply is not only important for domestic production, but also for economic resilience. As global trade becomes increasingly volatile and geopolitical shocks become more frequent, having sovereign capability in energy-intensive sectors strengthens both NSW's and Australia's ability to avoid supply chain disruptions. Domestic gas production and infrastructure provide a buffer against price shocks, ensure continuity of supply for critical industries, and support regional jobs and exports.

Onshoring industrial capacity underpinned by reliable energy inputs like gas enhances Australia's strategic autonomy, reinforces national resilience, and positions NSW as a globally competitive base for advanced manufacturing in a net zero future.

National resilience requires domestic infrastructure

Recent global energy shocks have highlighted the risk of over-relying on international supply chains. While LNG import terminals like Port Kembla provide short-term flexibility, they are not a singular substitute for sovereign supply and infrastructure. A well-connected, flexible domestic pipeline network, capable of moving gas efficiently across regions, will be essential to managing east coast shortfalls, especially as southern production declines.

Countries with strategic intent are investing in energy infrastructure that supports their industrial base and national capability. Australia must do the same. Without reliable gas supply, domestic manufacturing slows, investment is deferred, and Australia's economic resilience is weakened.

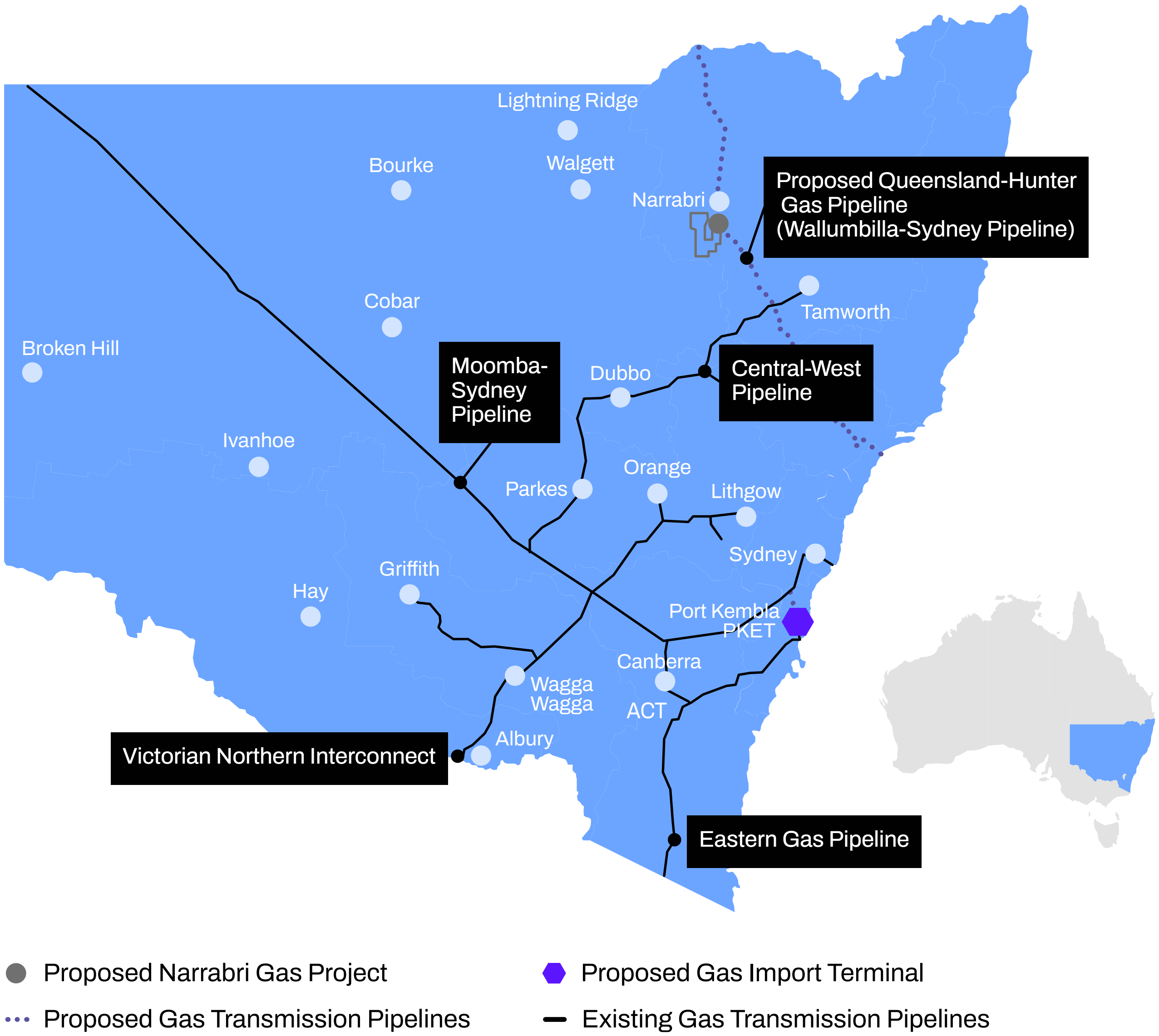
NSW gas market overview

NSW currently has no significant natural gas production of its own, apart from a small operation near Wilga Park. Gas from this site powers a gas-fired generator that supplies electricity to approximately 32,000 homes[7]. As a result, NSW is heavily reliant on gas transported via transmission pipelines from South Australia, Queensland, and Victoria (see Figure 2).

In NSW, as in other Australian states, the government owns the gas resources and grants licences to private operators for exploration and development. Since Business NSW released *Running on Empty* in 2019, there has been limited progress in converting known but unproven contingent gas resources into certified reserves. This stagnation is contributing to forecast supply shortfalls in the southern gas market, with AEMO projecting gaps emerging from 2028. The Federal Government's Gas Market Review has reinforced these concerns by highlighting delayed project approvals, stagnant reserve conversion, regulatory constraints and growing system fragility as key risks to price stability, supply security and industrial competitiveness.

NSW holds substantial contingent gas resources in the Gunnedah (Narrabri) and Clarence-Moreton basins. However, converting those into production will require renewed investment – exploration spending in petroleum

Figure 2. NSW gas pipelines and storage facilities



has fallen roughly 75 per cent this decade, driven by policy uncertainty, tougher approvals and a broader pivot toward renewables.

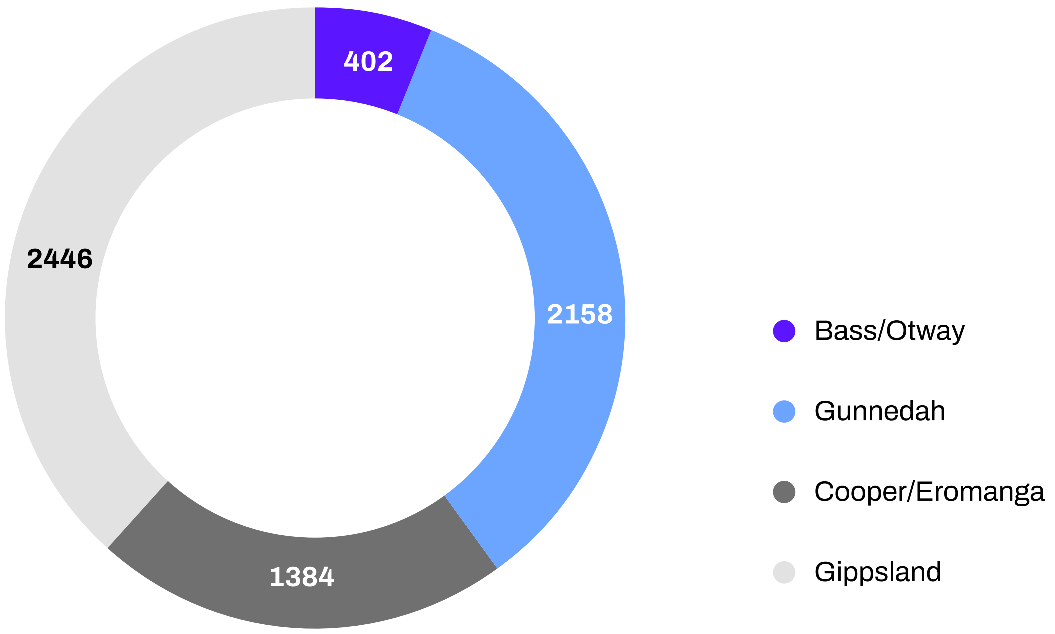
This decline in activity is happening just as demand pressures intensify.

AEMO forecasts that southern states, including NSW, will substantially deplete their known gas reserves by the mid-2030s. Around 6,390 petajoules (PJ) of contingent resources have been identified across the southern market, with roughly 20 proposed projects at varying stages of development (Figure 3). Most of these projects are located outside NSW and remain unapproved, with first gas unlikely before 2028 unless final investment decisions are made soon[8].

The Port Kembla Energy Terminal, completed in 2024, can provide a new source of supply flexibility for NSW by allowing LNG imports. In addition, domestic production will be required to reduce exposure to international price volatility and ensure secure and long-term local supply.

To ensure a resilient energy system, NSW must complement its investment in renewable electricity with action to secure reliable gas supply and infrastructure. Without this balance, the state faces rising costs, weakened industrial competitiveness, and growing exposure to international energy shocks.

Figure 3. Volumes of 2C resources held in southern states by basin (PJ)
(Source: AEMO. Reserves Resources Reporting and Facility Development)



The Federal Government's Future Gas Strategy Analytical Report recognises the decline in investment in gas projects in Australia and outlines the following reasons for the decline:

- global developments in oil and gas markets, such as a poor environment for access to project finance, availability of new gas investment opportunities in other parts of the world, and advances in substitutes to gas such as renewable energy technologies and increasing restrictions in accessing finance for fossil fuel projects
- legal challenges to large gas projects and a perceived decline in the social license required for continuing development of the gas industry in Australia
- the concentration of the Australian market for gas production and transmission, which may contribute to 'gas hoarding' behaviour
- the cumulative effect of federal and state government interventions, including but not limited to legislation affecting gas supply and demand, including the Australian Domestic Gas Security Mechanism (ADGSM), and the Gas Code
- the broader instability of the State and Federal policy environment.

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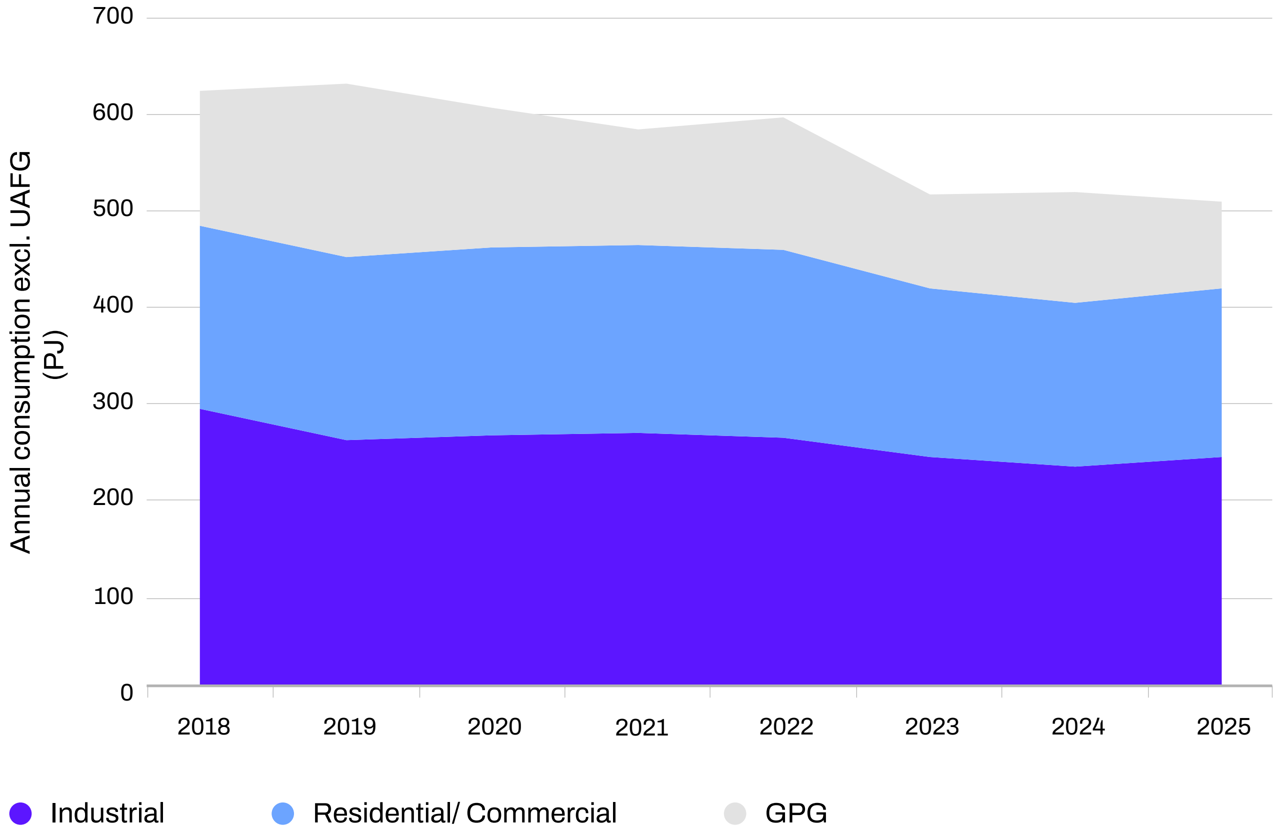
NSW and east coast gas demand

Gas demand in New South Wales has declined in recent years, but the drivers behind this trend are often misunderstood. While higher retail prices, milder winters, and a slowdown in new residential connections have contributed, the most significant factor is structural change within the industrial sector.

According to the Australian Energy Market Operator, NSW gas consumption continued to fall in 2025, primarily due to reduced industrial activity and unseasonably mild weather (Figure 4). AEMO noted that declines in residential and commercial demand were larger than could be explained by weather alone, pointing to deeper systemic shifts. Industrial users account for the largest decline, with demand forecast to fall by around nine petajoules by 2027[5]. This is not evidence of successful fuel-switching – it reflects a long-term pattern of industrial contraction. These shifts are structural, not temporary responses to price volatility.

Residential and commercial gas use, by contrast, is expected to fall more sharply from the early 2030s. Consumption is projected to drop from 176 petajoules in 2025 to 51 petajoules by 2044, largely driven by policy-led electrification, particularly in Victoria. This will have significant flow-on impacts for electricity demand, system planning, and peak capacity needs.

Figure 4. East coast gas market demand by sector for 2019 to 2024



Beyond 2027, industrial gas demand is expected to stabilise. Many industries, such as cement, glass, fertiliser, and metals manufacturing, will continue to rely on gas for high-temperature processes or as a chemical feedstock. These applications are difficult and costly to electrify due to technical limitations and economic constraints.

Gas use for electricity generation is also projected to rise. As coal-fired power stations like Eraring and Yallourn retire before 2030, gas will play an increasingly important role in firming renewable generation and maintaining system reliability. While total annual volumes may remain modest, peak-day gas demand is expected to increase substantially.

The core issue is not falling demand due to fuel-switching, it is the erosion of productive industrial capacity. This has serious consequences for jobs, exports, and energy security. Without intervention to ensure competitive gas supply for energy-intensive industries, NSW risks accelerating deindustrialisation.

Australia cannot afford to hollow out its manufacturing base. In an increasingly protectionist global trade environment, mechanisms like the European Union's Carbon Border Adjustment Mechanism (CBAM) will penalise nations without strong, low-emissions industrial capability. To compete, Australia must build sovereign capacity underpinned by affordable, reliable energy.

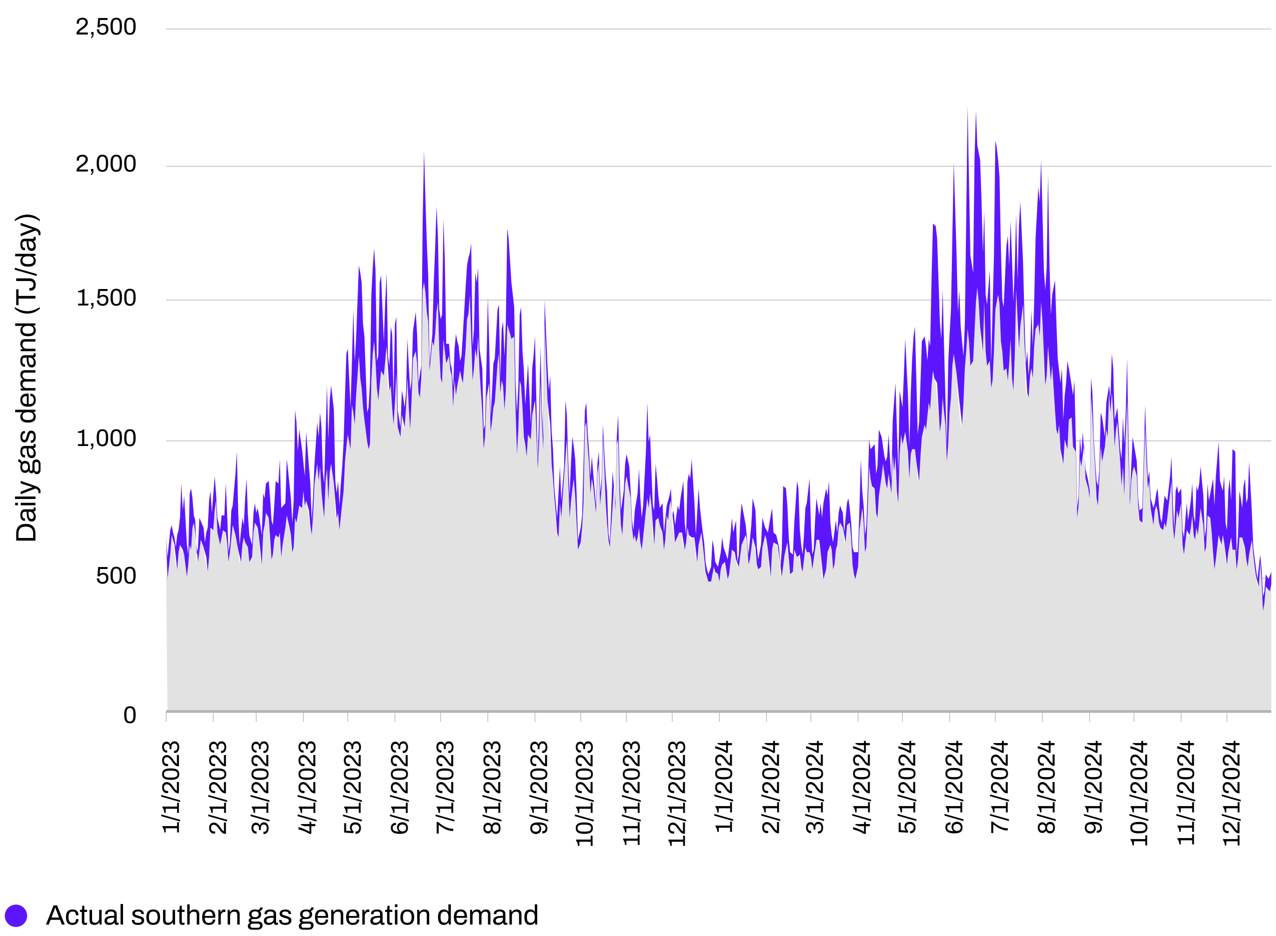
Gas, alongside renewables, is central to that task. It enables industrial production, supports firm power generation, and provides a platform for renewable gas development. Policymakers must not mistake declining demand for progress. Instead, they must recognise gas's structural role in delivering economic resilience and a balanced energy transition. Ignoring this will not just weaken the gas sector, it will erode the foundations of NSW's industrial future.

Peak demand forecast

Daily demand for residential, commercial and industrial consumers is strongly seasonal, with the maximum demand occurring in winter driven by the demand for heating. NSW's daily winter peak gas demand is around 1200 (Terajoules) TJ/d higher than that for summer. This is largely due to the significant increase of around 850 TJ/d in peak demand over winter for the residential and commercial sectors.

Peak day shortfalls for NSW are forecast from 2029 and continues to be at risk in future years as southern production capacity continues to decline (Figure 5)[5].

Figure 5. Actual domestic daily gas demand in Southern regions from January 2023 to December 2024, showing seasonality and peakiness (TJ)



Domestic gas prices have fallen since 2022, but remain above historical levels

Since 2019, the east coast gas market has faced a period of sustained volatility, shaped by both global disruptions and domestic policy changes. These factors have significantly affected gas supply availability, infrastructure access, pricing, and the contracting environment. The result has been heightened risks and mounting pressure for both market participants and consumers.

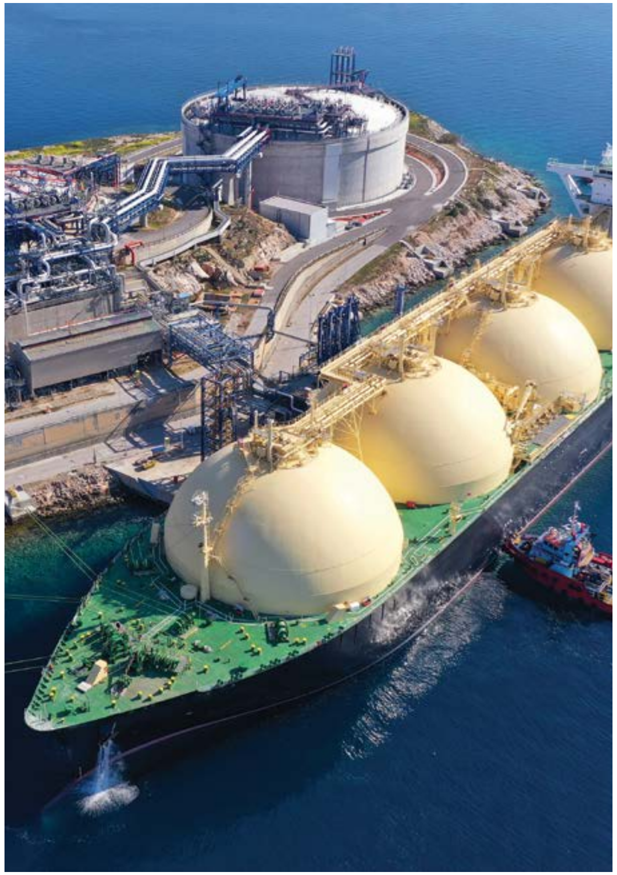
During 2022, there were sharp rises in gas prices, triggered by Russia's invasion of Ukraine.[9] As European buyers scrambled to secure alternative LNG supplies to replace Russian pipeline gas, global prices surged. Although Australia is a major exporter, this global shock spilled over into domestic markets and pushed local prices higher.

Domestic policy decisions further amplified the pressure. The Federal Government introduced an Emergency Gas Price Cap and began drafting the mandatory Gas Market Code. In response, many producers paused new contracting activity. This created additional uncertainty, reduced liquidity, and raised the cost and risk for retailers attempting to secure affordable supply.

The ACCC described 2022 as a "perfect storm" for gas retailers. Market conditions were worsened by outages across the National Electricity Market, the collapse of Weston Energy as a retailer, and elevated global gas and oil prices.

The total cost of supplying gas to commercial and industrial users rose from just over $10 per gigajoule in early 2020 to around $16 per gigajoule by the first half of 2024, an increase of 56 per cent (or approximately $5.72 per gigajoule), with most of the rise occurring during 2022 and 2023.

While prices have since eased to approximately $14 per gigajoule in 2025 due to improved supply availability, easing global prices and a more stable outlook for 2026, they remain significantly above pre-2022 levels. Without further investment in new supply, price pressures are expected to persist.[8]



What influences NSW gas prices?

Gas prices in NSW are influenced by a complex array of variables but some main factors include:

- **Conditions in the southern states:** Supply shortfalls mean that southern prices would be expected to be closer to Queensland prices plus transportation. The market prices in Queensland, in turn, are likely to be heavily influenced by LNG netback prices.

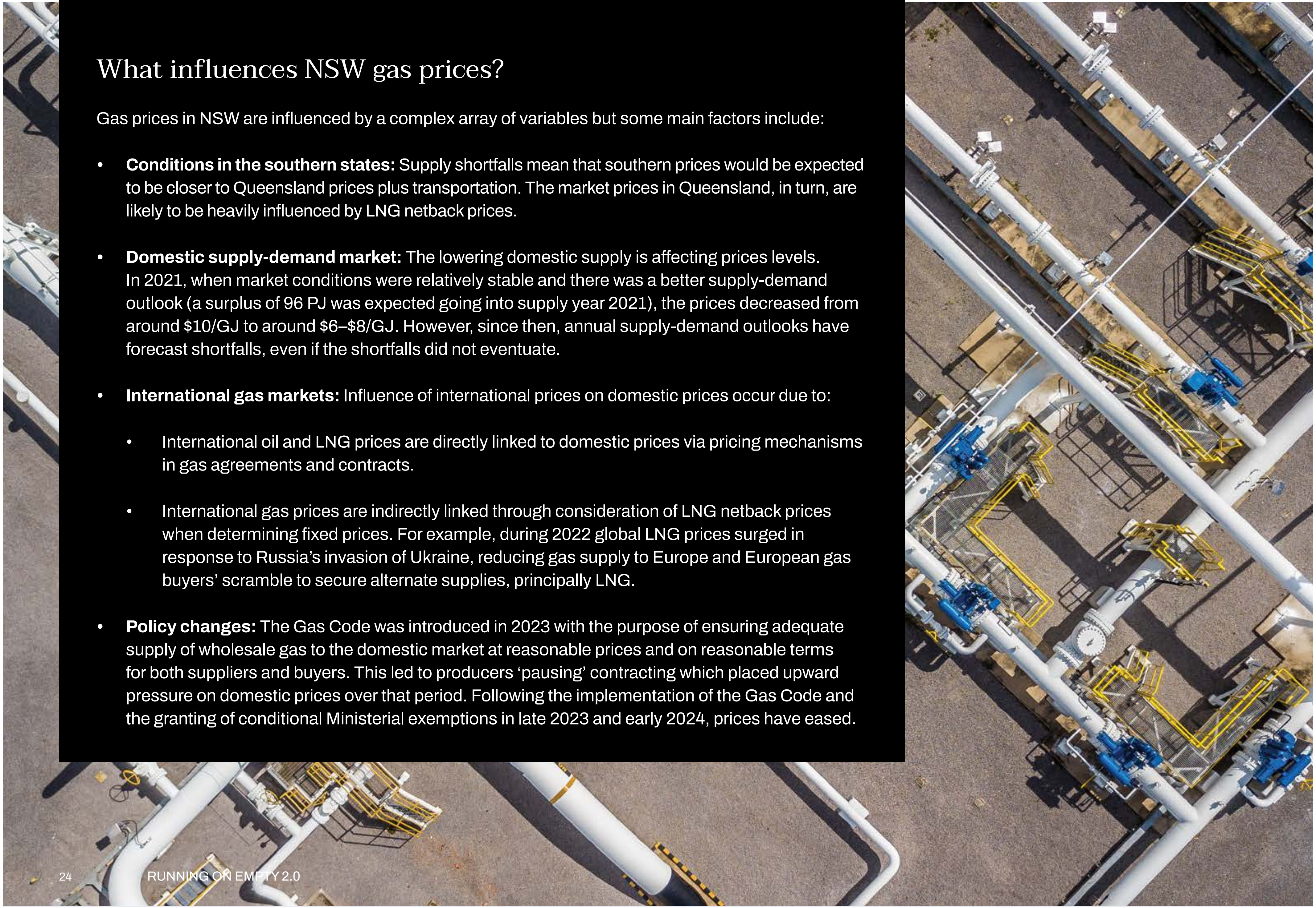
- **Domestic supply-demand market:** The lowering domestic supply is affecting prices levels. In 2021, when market conditions were relatively stable and there was a better supply-demand outlook (a surplus of 96 PJ was expected going into supply year 2021), the prices decreased from around $10/GJ to around $6–$8/GJ. However, since then, annual supply-demand outlooks have forecast shortfalls, even if the shortfalls did not eventuate.

- **International gas markets:** Influence of international prices on domestic prices occur due to:

    - International oil and LNG prices are directly linked to domestic prices via pricing mechanisms in gas agreements and contracts.

    - International gas prices are indirectly linked through consideration of LNG netback prices when determining fixed prices. For example, during 2022 global LNG prices surged in response to Russia’s invasion of Ukraine, reducing gas supply to Europe and European gas buyers’ scramble to secure alternate supplies, principally LNG.

- **Policy changes:** The Gas Code was introduced in 2023 with the purpose of ensuring adequate supply of wholesale gas to the domestic market at reasonable prices and on reasonable terms for both suppliers and buyers. This led to producers ‘pausing’ contracting which placed upward pressure on domestic prices over that period. Following the implementation of the Gas Code and the granting of conditional Ministerial exemptions in late 2023 and early 2024, prices have eased.



International LNG market trends create long term price uncertainty on the east coast

Supply to the east coast gas market has become increasingly shaped by LNG exports and the discretion of producers to sell uncontracted gas either on domestic or international markets. International circumstances such as shipping disruptions, international conflicts and climate policies of LNG importers can affect commercial decision-making on supply, production, pricing, and future investment. Australia is expected to continue to export substantial amounts of LNG, which will continue to have flow-on impacts on domestic prices.

Additionally, in the next 5 years, there will be a significant increase in LNG supply from the United States and Qatar potentially lowering global LNG prices and impacting our domestic gas market prices.

Increased international LNG supply could put downward pressure on international LNG prices over the medium term. While this may not substantially affect LNG producers' supply in the short term (as most of their gas production is for supporting fixed quantities under long-term foundational contracts), it may affect how they develop excess gas, which could be supplied either to the domestic market or the international spot market. It would also affect the price of LNG imports into the east coast gas markets, if these are utilised in the near term.

While the future of gas in Australia carries significant uncertainty, one message has remained consistent across all scenarios in AEMO's Gas Statement of Opportunities (GSOO): **new supply is essential**[5]. This is true regardless of the outlook for residential or commercial gas use. Without additional supply, New South Wales and the broader east coast risk supply shortfalls, higher prices, and reduced energy security.

Short, medium, and long-term options must all be considered. Within New South Wales, new local supply is limited unless the Narrabri Gas Project proceeds or investment in gas infrastructure is undertaken to transport gas from the north. LNG import terminals offer another potential source of supply. But to ensure long-term supply security and market flexibility, NSW must also support the buildout of both greenfield and brownfield transmission pipelines, enabling new gas to reach demand centres efficiently and allowing infrastructure to be repurposed over time for renewable gases such as hydrogen and biomethane.

While traditional natural gas remains essential to current supply, it can also support emissions reduction in the short to medium term when it displaces higher-emitting fuels such as coal, particularly in sectors like steelmaking and industrial heating. However, to achieve long-term net zero targets, Australia must also develop a sovereign low-carbon gas industry. This is especially important for hard-to-abate sectors such as manufacturing, heavy transport, and large-scale processing, where electrification is not always technically or economically viable.

Gas infrastructure will play a central role in enabling a faster, more stable, and more affordable transition to net zero. By transporting both natural and renewable gases, existing networks can deliver emissions reductions at scale without major new investments in electrification. According to Frontier Economics modelling in Gas Vision 2050, achieving net zero by 2050 while retaining gas infrastructure and developing renewable gas would cost half as much as full electrification[10]. This approach could save consumers more than $12 billion annually from 2050.

Further, analysis by the Boston Consulting Group in *The Role of Gas Infrastructure in the Energy Transition* confirms that gas infrastructure can support the delivery of low-carbon gases such as green hydrogen and biomethane[11]. If production and technology costs continue to fall, these fuels could become competitive for both industrial users and households, forming part of an integrated clean energy system.

The evolving energy policy landscape

Australia's energy transition involves a major shift from fossil fuel-based power generation to renewable energy sources, with the goals of reducing emissions, enhancing energy security, and supporting long-term economic and environmental sustainability.

The NSW Government has legislated binding emissions reduction targets under the *Climate Change (Net Zero Future) Act 2023*. These targets include a 50 per cent reduction in greenhouse gas emissions from 2005 levels by 2030, a 70 per cent reduction by 2035, and net zero by 2050. Nationally, the Commonwealth Government has recently confirmed a 62-70% emissions reduction target by 2035. To achieve these targets, the Commonwealth has released six sectoral plans, and an overall net-zero plan. These present broad frameworks for key sectors and the economy at large, illustrating the all-of-the-above approach needed to reduce emissions, including renewable gases, electrification, coal-to-gas switching, carbon markets, and carbon capture storage and utilisation.

Since the release of the original *Running on Empty* report in 2019, the policy landscape surrounding renewables and gas has continued to evolve at both the state and federal levels. This section outlines key NSW and Commonwealth strategies that now underpin the transition.

The NSW Electricity Roadmap

The NSW Electricity Infrastructure Roadmap is the state's flagship plan for decarbonising the power sector. It aims to coordinate investment in renewable generation, energy storage, firming capacity, and transmission infrastructure.

At the core of the roadmap is the development of Renewable Energy Zones, which aggregate and connect large-scale renewable projects to the grid. Complementing these large projects are household and business incentives for rooftop solar, batteries, and energy efficiency upgrades.

While investment in renewable electricity has accelerated, gas policy has progressed more cautiously. However, the NSW Government acknowledges that gas will continue to play a role in delivering affordable and reliable energy, particularly for industrial users and as a firming fuel.

NSW Future of Gas Statement

Released in 2021, the **NSW Future of Gas Statement** outlined a policy framework for gas exploration and development. Its four-point action plan focused on:

1. Improving certainty about future gas production and exploration
2. Enabling downstream users to access gas to unlock economic benefits
3. Using gas for firming capacity where it is the most economic option to ensure reliability
4. Enabling gas-related infrastructure

To align with broader land use and climate goals, the government significantly curtailed the land available for gas exploration. It committed to renewing only a limited number of Petroleum Exploration Licences (PELs), largely focused on the Narrabri region. While the Narrabri Gas Project remains central to the state's supply strategy, development has been delayed, and its future is uncertain.

NSW Consumer Energy Strategy

Released in 2024, the NSW Consumer Energy Strategy aims to ensure households and small businesses benefit from the shift to clean energy. A key commitment within the strategy is the development of a NSW Gas Decarbonisation Roadmap, due by the end of 2026, alongside updated electrification targets for 2035 and 2050. These measures are expected to clarify the long-term role of gas in NSW.

The NSW Renewable Fuel Strategy

The NSW Renewable Fuel Strategy, released in November 2025, provides a framework to accelerate renewable fuel production and use to support decarbonisation in hard-to-abate sectors. It acknowledges hard-to-abate sectors cannot fully electrify in the short to medium term and will continue to rely on low-emissions fuels such as biomethane, renewable diesel, SAF and green hydrogen, both as energy sources and industrial feedstocks.

The strategy focuses on four objectives: reducing emissions in hard-to-abate sectors; supporting NSW's climate targets; boosting regional economic development, and strengthening fuel security. By 2035, it aims for renewable fuels to supply 15% of industrial gas use, cut 2.5% of emissions in hard-to-abate sectors, generate $1 billion in regional investment and produce 10 PJ of renewable fuel annually. It outlines 20 actions across six focus areas, including expanding the Renewable Fuel Scheme to biomethane, supporting commercial-scale projects, establishing biohubs, improving supply chain infrastructure and introducing certification and disclosure reforms.[19]

The Australian Government's Future Gas Strategy

In May 2024, the Australian Government released its **Future Gas Strategy**, which outlines how gas will support the national economy and international partnerships as the country transitions to net zero.

The strategy acknowledges that while gas use will decline over time, it remains necessary in hard-to-abate sectors and for energy system reliability. It identifies six guiding principles:

1. Australia is committed to achieving net zero emissions by 2050 and supporting global emissions reduction.
2. Gas must remain affordable for Australian users throughout the transition.
3. A new gas supply will be needed to meet demand during the economy-wide transition.
4. Gas will increasingly be directed toward high-value, non-substitutable uses. Households will retain choice in how their energy needs are met.
5. Gas and electricity markets must evolve to remain functional and efficient.
6. Australia will continue to be a reliable energy trading partner, including for LNG and low-emissions gases.

Although the strategy affirms gas' role in the transition, it does not yet include specific new policies to enable long-term investment in gas supply or infrastructure.

Renewable gases in Australia in their infancy

Renewable gases, when burned for energy, emit minimal emissions. Hydrogen, the most widely known renewable gas, has a different chemical composition to methane and only releases primarily heat and water so therefore has almost no carbon emissions associated. Biomethane, the lesser-known renewable gas, when burned, releases only the carbon dioxide that was absorbed from the air by organic matter (like plants) throughout their lifetime, this differentiating it from fossil natural gas. Biomethane is captured from decomposing organic wastes from landfills, agricultural produce and wastewater treatment facilities. It's considered to be carbon neutral because it doesn't add any additional carbon emissions into the atmosphere.

Renewable gas markets in Australia are in their infancy, with the hydrogen industry being the most supported to date by government. However as explored above the shift towards biomethane and e-methane has started at the NSW State Government level with the recent Renewable Fuel Strategy. Currently there are trial scale renewable gas projects across Australia as seen in Figure 6.[19]

Biomethane

The biomethane industry is still in its early stages commercially in Australia. However, unlike hydrogen, biomethane technology is mature, with the first UK biomethane facility beginning operation in 2009[12].

Biomethane is a renewable gas captured from decomposing organic wastes from landfills, agricultural produce, industrial plants and wastewater treatment facilities. Biomethane has the same physical and chemical properties as natural gas – requiring no changes to appliances and therefore can be delivered through the existing gas infrastructure to deliver renewable energy at scale.

Australia's Bioenergy Roadmap highlights the biomethane opportunity. The roadmap indicated biomethane could represent between nine and 33 per cent of Australia's gas demand by 2050, depending on the level of targeted support[13].

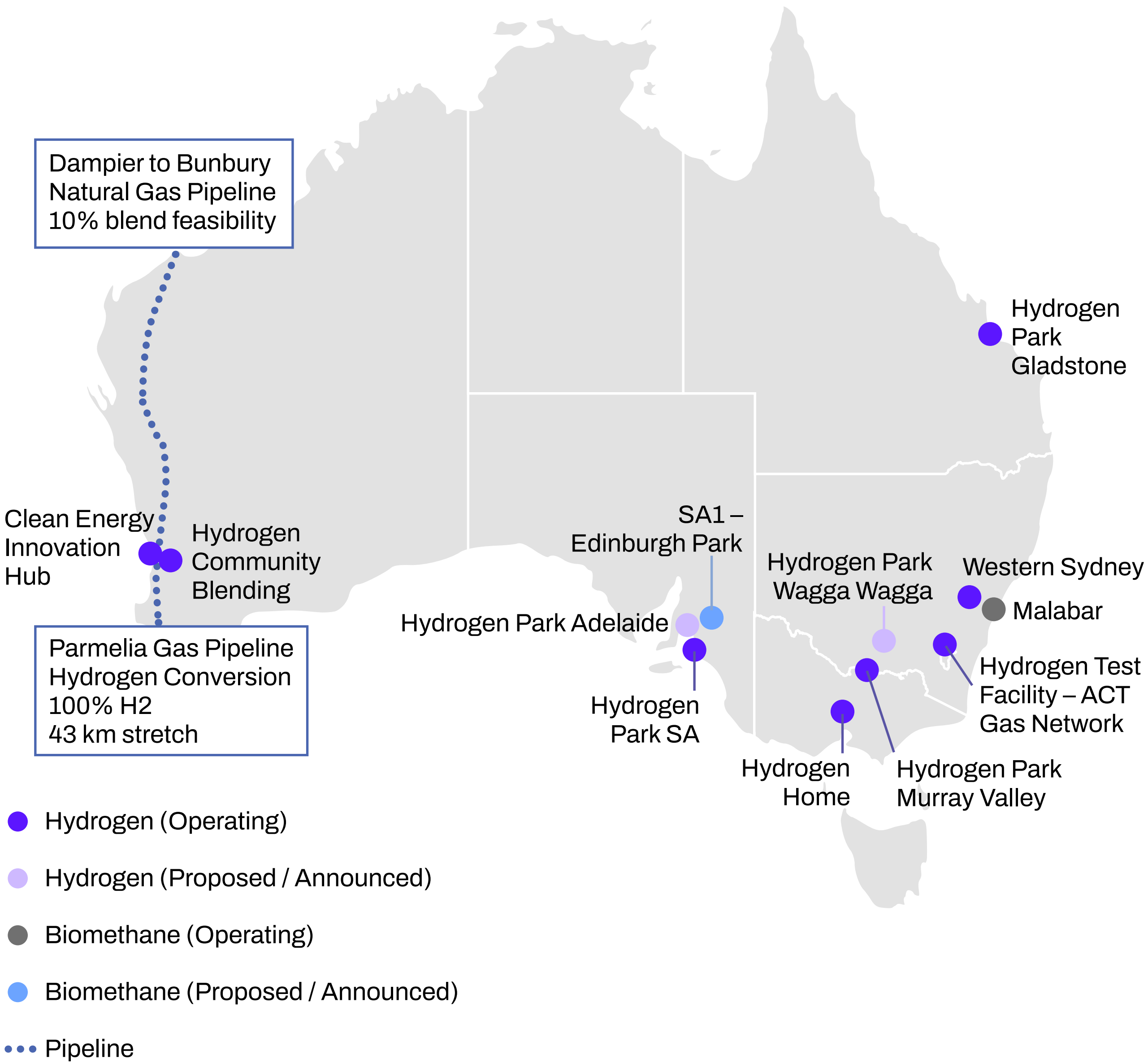
NSW only has one biomethane facility currently which is The Malabar Biomethane Injection Plant described in case study 1. This is a pioneering project that captures biogas from sewage sludge at the Malabar Wastewater Treatment Plant in Sydney, upgrades it to biomethane in line with gas specifications and then injects it into the gas network, displacing natural gas.

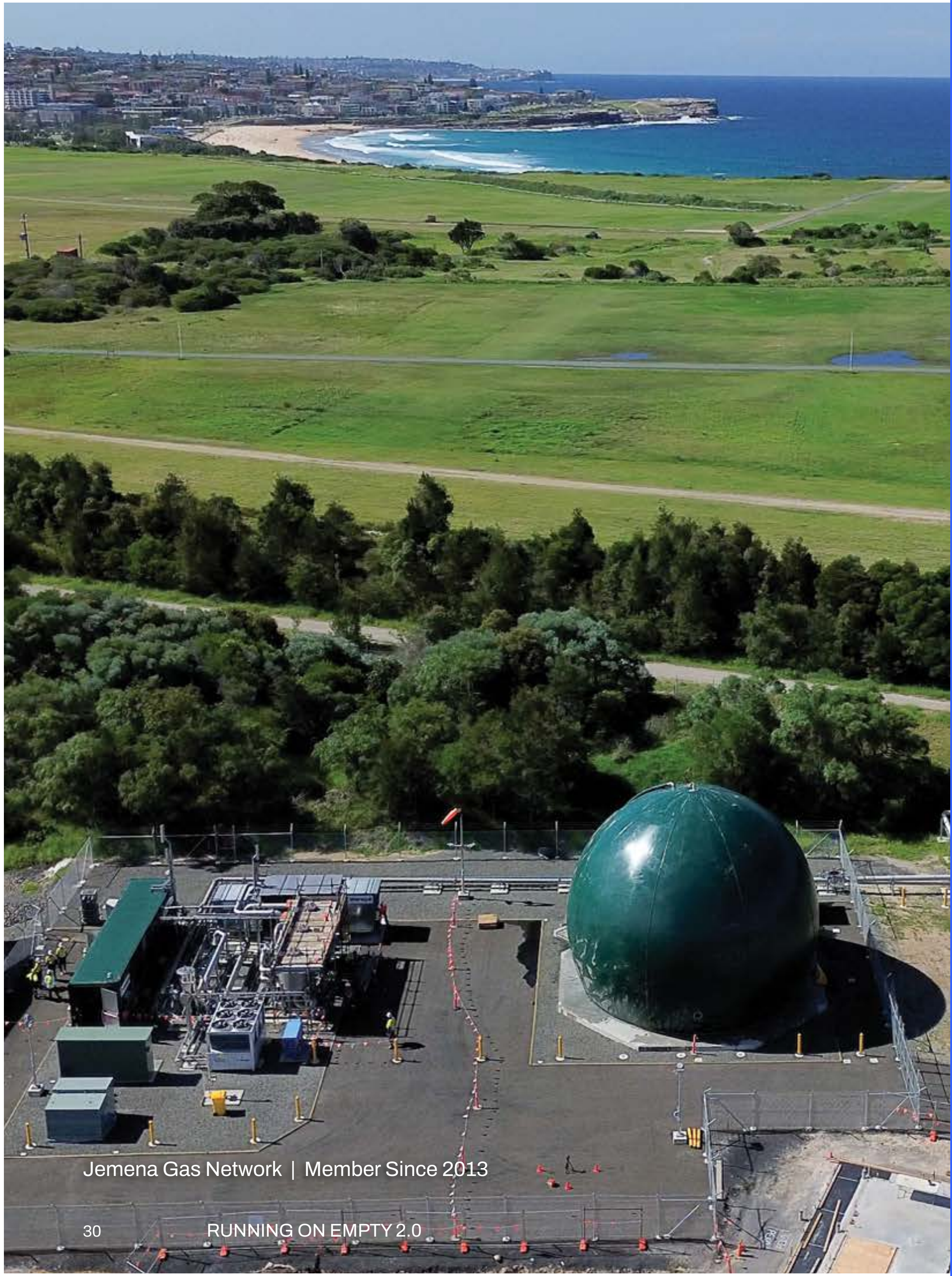
Victoria has one anaerobic digestion facility from pre-consumer food waste established in Wollert in 2017, with a second facility in Lilydale currently being constructed (ReWaste Wollert & Lilydale). These facilities receive food waste and export renewable electricity generated from biogas.

Most recently, Bioenergy developer Delorean Corporation has begun construction of a biomethane plant in Edinburgh Parks, South Australia. This plant will process 70,000 tonnes per annum of organic waste streams for the nominal production of up to 210 TJ per annum of renewable natural gas exported to the gas network.

There is great potential for these facilities to upgrade their biogas and inject into the gas grid in future, therefore exporting even more renewable energy whilst unlocking the storage potential of gas infrastructure. We can see from overseas the potential opportunities and benefits of scaling up the biomethane industry.

Figure 6. Map of renewable gas projects in Australia





Jemena Gas Network | Member Since 2013

CASE STUDY 1:
Jemena's Malabar Biomethane Demonstration Project

The Malabar Biomethane Demonstration Project is a partnership between Jemena and Sydney Water. It began converting biogas from Sydney Water's wastewater plant to biomethane as part of Australia's first biomethane network injection project in June 2023. The ARENA co- funded project is injecting high- quality biomethane gas from Jemena's gas upgrader facility directly into Jemena's New South Wales distribution network. The project has an initial capacity of 95 terajoules of renewable gas per annum. This is about equivalent to the average annual gas usage of 6,300 NSW homes.

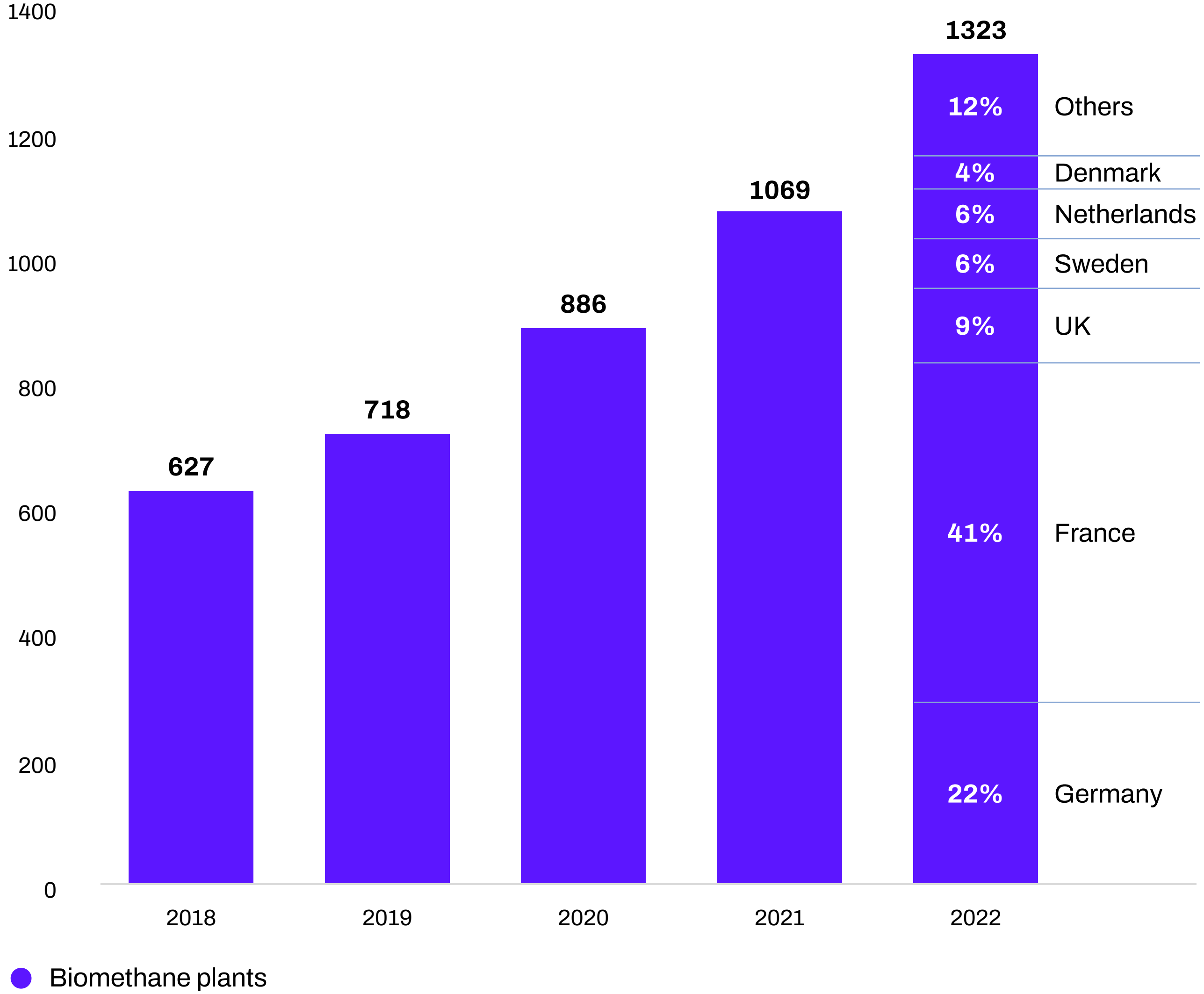
In March 2023 Jemena took another significant step in the activation of an Australian renewable gas market, by signing an agreement with retailer Origin Energy for the sale and purchase of gas produced at the Malabar Biomethane Demonstration Project. Malabar is the first project to achieve GreenPower certification, which is a NSW government accreditation to help commercial and industrial gas users directly support renewable gas projects and reduce emissions from energy use.

The success of the Biomethane industry in Europe

The biomethane industry is far more developed overseas, with over 1,548 biomethane producing facilities currently operating in Europe alone. New biomethane plant installations in Europe more than doubled over the past five years (Figure 7)[14]. The rapid expansion of the biomethane sector in Europe, by the Russian invasion of Ukraine early 2022, has been led by external market conditions, demand and supply side policy levers, as well as ambitious targets.

The EU's framework for its 2025 net zero targets recognises the potential for renewable gases, including biomethane and hydrogen, to support least cost decarbonisation and strengthen energy security across all economic sectors. Biomethane production developments differ significantly between EU countries, mainly driven by the national strategies, financial support mechanisms and other policy levers.

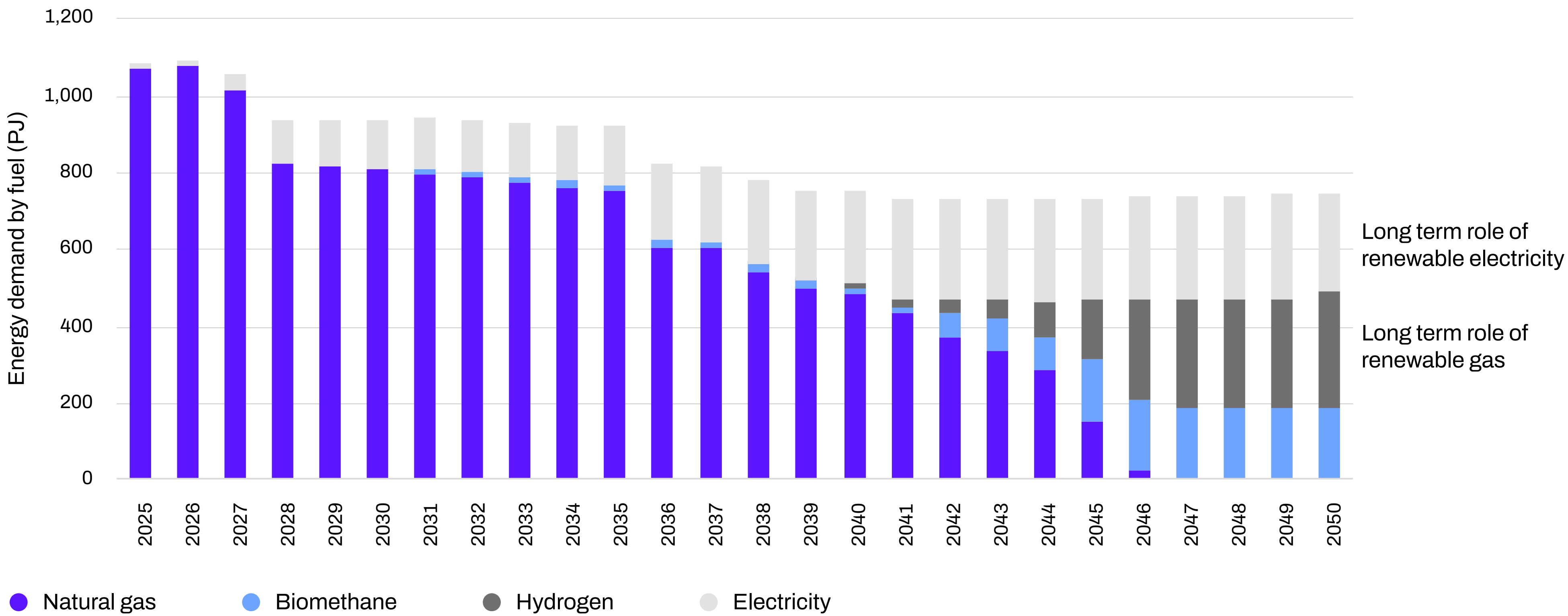
Figure 7. Increase in the number of biomethane plants in Europe between 2018-2022, showing the proportion of biomethane plants by country in 2022
(Data Source: 2023 / Market State and trends in renewable and low-carbon gases in Europe)



Benefits to developing a biomethane gas industry in NSW

As the Future Gas Strategy highlights, under all credible net zero scenarios, gas is needed through to 2050 and beyond. ACIL Allen modelled multiple pathways to net zero and the lowest cost pathway to decarbonise gas used by Australia's industrial, commercial and residential sectors (Figure 8)[15].

Figure 8. Decarbonisation pathway for Australia's gas use *(Source: ACIL Allen, 2024, Theoretical Efficient Policy Scenario)*



The analysis found:

- Both electrification and renewable gases have a role to play in the lowest-cost pathway to decarbonisation.
- Energy efficiency improvements from electrification reduces the total energy demand needed to deliver the same services.
- Early opportunities are centred on electrification in some industrial processes (mainly conversion of LNG trains that are undergoing capital equipment upgrades) and some commercial and residential electrification, and later (from 2040) opportunities will require renewable gases. While this signifies hard-to-electrify sectors are decarbonised at the later stage of our transition to net zero, it shows that we do not get there by 2050 without a reliable renewable gas option as part of the transition.

Growing a biomethane industry also provides additional circular economy opportunities for NSW. Biomethane can be produced from various sources, including waste from landfills, agricultural produce, industrial plants and wastewater treatment facilities. The production of biomethane creates two byproducts with both commercial and environmental value, namely, biogenic carbon dioxide and a nutrient rich fertiliser known as digestate.

The benefits of biomethane speak for themselves and the success of the industry in Europe has demonstrated how NSW and Australia could to the same. However, existing regulatory barriers need to be addressed with a combination of policy and financial support for producers and consumers, as has occurred with renewable electricity.

Akubra Hats | Member since 1924

Hydrogen

Australia's green hydrogen sector is considered to be an integral part of Australia's plan for long-term decarbonisation, whilst creating a thriving domestic market and positioning Australia as a major exporter of low carbon embodied goods. If produced using low or zero emissions sources, hydrogen can enable decarbonisation across the hard-to-abate segments of the energy, transport and industrial sectors that currently account for around 18% of NSW's annual emissions.

Australian governments are seeking to improve the coordination and future integration of energy systems as demonstrated by the proposed AEMO's 'supercharged' Integrated System Plan. Green hydrogen can play a significant role in supporting this objective through its ability to couple the gas and electricity sectors.

Australia's National Hydrogen Strategy, released in 2019 and updated in 2024, envisions the country as a global leader in hydrogen production[16]. The strategy outlines plans to reduce production costs, create hydrogen hubs, and establish a domestic market while positioning Australia as a major exporter.

NSW has positioned itself to become a regional leader in green hydrogen. By 2030, it aims to be producing 110,000 tonnes of green hydrogen per annum from 700 MW of electrolyser capacity for under $AU2.80 per kg. To achieve these goals, NSW drafted the NSW Hydrogen Strategy which set out a $3 billion plan to develop a green hydrogen industry in NSW. However, recent developments have revealed that significant obstacles remain to achieving a commercially competitive green hydrogen industry.

While Australia's hydrogen future appears promising, recent corporate decisions have exposed significant challenges that need addressing. Key challenges facing Australia's Hydrogen sector include high production costs, lack of infrastructure to support hydrogen production, transport, and storage, an undeveloped and uncertain market demand and other policy and regulation challenges.

This has stalled the development of Australia's hydrogen sector, with NSW hydrogen hub projects still awaiting FID decisions. However small demonstration projects that blend hydrogen into gas networks have been established around Australia such as AGIG's Hydrogen Park in South Australia, ATCO blending facility in Western Australia and then Jemena's Western Sydney Hydrogen Hub in NSW.


Jemena Gas Network | Member Since 2013

CASE STUDY 2: Western Sydney Hydrogen Hub

Jemena's $15 million ARENA co-funded Western Sydney Hydrogen Hub is a demonstration project which includes a 500kW electrolyser (to produce green hydrogen using renewably sourced electricity from the grid), a 335- metre buffer pipeline (to demonstrate green hydrogen storage in the gas network), a hydrogen injection panel (which is blending to 2% green hydrogen into the Jemena gas network) and power generation equipment (to test the production of electricity using hydrogen).

The project demonstrates the potential to store renewable energy as green hydrogen using a dedicated hydrogen pipeline. This green hydrogen is then be blended into the gas network or used to produce electricity utilising the onsite fuel cell and microturbine for export into the national electricity grid.

How does this impact businesses moving forward?

Gas remains essential to the operation and viability of thousands of NSW businesses. More than 40 per cent of the state's total gas use supports industrial activity, including food processing, manufacturing, and mineral refining. For many of these businesses, gas is not simply an energy source, it is an irreplaceable input for high-temperature processes that cannot yet be electrified or where doing so would be prohibitively expensive.

Business NSW's August 2024 *Business Conditions Survey* found that 18 per cent of all businesses, and 64 per cent of those in the Accommodation and Food Services sector, remain fully reliant on gas. These are not legacy users; they are essential employers and contributors to regional and state economies.

Yet gas-dependent businesses are increasingly exposed to price volatility and procurement challenges. In recent years, users have experienced price shocks of up to 400 per cent, particularly those exposed to short-term markets or needing to re-contract in volatile conditions. For some, the combination of rising gas costs, broader input cost inflation, and global market pressures is pushing operations to the brink or beyond. For example, Qenos, Australia's only manufacturer of polyethylene and a key player in the domestic plastics and chemical supply chain, closed its operations in 2024 due to sustained high gas prices and an uncompetitive policy environment, making it no longer viable to manufacture in Australia.

The ACCC's September 2025 interim report confirms these pressures are not easing[8]. The volume of gas contracted for 2025 fell to less than half the levels seen in 2022. Many businesses reported difficulty accessing gas on competitive terms, with reduced transparency in contracting, fewer firm offers, and producers increasingly shifting risk onto buyers. As the ACCC concluded, "there has been little gas available at the $12/GJ reasonable price level under the Gas Code."

For NSW businesses, this creates a double bind: not only is gas more expensive and harder to procure, but there is little certainty it will remain available over the medium term. That uncertainty undermines confidence to invest, expand, or decarbonise. It also erodes the state's competitiveness – particularly in manufacturing sectors where energy is a major input cost.

This matters because NSW faces a broader economic inflection point. The state currently generates over $33 billion in annual coal exports, more than its next nine export sectors combined[4]. As global partners impose carbon border tariffs and transition their supply chains, this revenue is at risk. Replacing it will require new high-value, energy-intensive industries: clean metals, advanced manufacturing, fertilisers, green chemicals, and renewable fuels.

Without affordable, reliable gas, these industries will not take root in NSW. The Future Gas Strategy recognises in one of its six principles that gas must be affordable. The opportunity to build sovereign manufacturing capability, reduce trade exposure, and drive regional job growth will be lost to jurisdictions with better-aligned policy and energy cost advantages.

In this context, securing gas supply is not just a matter of energy policy, it is a business survival issue. It is also central to the success of the broader economic transition. NSW must move beyond reactive management and deliver a clear, forward-looking gas strategy that ensures confidence, supports industry, and unlocks investment in the low-carbon economy of the future.

CASE STUDY 3: Mars Food Australia – cutting gas use at a regional manufacturing site

Mars Food Australia operates a major food manufacturing facility in Wyong on the NSW Central Coast, employing over 330 people and producing 70,000+ tonnes of food annually. Natural gas and LPG are essential to Mars Food's operations, particularly for steam generation, which is required to cook, pasteurise, sterilise products, and maintain strict hygiene standards. LPG is also used to fuel forklifts. The site currently uses approximately 75,000 GJ of natural gas and 2,000 GJ of LPG each year.

To reduce its reliance on gas, this Mars site has invested over $600,000 since 2022 in steam system upgrades. These improvements covering steam generation, distribution, and use have delivered a 23.7% cut in natural gas consumption and a 17.5% drop in gas intensity per tonne of output.

Mars is now working with CSIRO and NSW-based Graphite Energy to design a 4 MW electrical Thermal Energy Storage (eTES) system, which could replace 70% of the site's remaining gas use. Similar gas reduction systems are already being trialled at other Mars sites including Mars Petcare in Victoria.

Mars' experience highlights the technical feasibility of decarbonising heat-intensive manufacturing but also underscores a key challenge: the upfront capital cost of transitioning to electrified steam systems and the potential benefits of alternative decarbonisation paths utilising renewable gases. With appropriate state-level support, manufacturers like Mars could accelerate emissions reductions while continuing to provide secure regional employment and economic value.

CASE STUDY 4:
Causmag International – navigating rising energy costs in gas-intensive manufacturing

Causmag International has over 60 years of experience mining and manufacturing high-grade magnesium oxide products. These products are used across agriculture, animal health, industrial, and pharmaceutical sectors. The company employs 26 people and since 1996 have injected over $110 million into the local economy.

In 2020, Causmag consumed nearly 60,000 GJ of gas to support its energy-intensive operations. Due to soaring gas prices, the company cut consumption by 54% by 2024. The rising cost of gas posed a significant challenge for the company, which like large manufacturers, often lacks the ability to negotiate volume-based gas prices.

As a result, the company has tried different initiatives to save costs but has a limited ability to not pass on increased energy costs to customers. As stated by management, “We cannot ask our customers to pay more just because someone in the Australian gas market is profiteering from forecast supply shortages.”

Causmag’s experience highlights the vulnerability of small to mid-sized manufacturers to volatile gas markets. Without access to competitive gas pricing, such businesses face difficult trade-offs between operational efficiency, product pricing, and market competitiveness.

CASE STUDY 5:
Energy costs strain Sydney linen service

A Sydney-based linen service company, catering to hospitals, aged care facilities, and hotels, has faced significant operational challenges due to rising gas costs. Employing a team of 45 staff, the business is heavily reliant on natural gas to power its laundering, drying, and ironing processes.

Over the last five years, the company has seen a 300% increase in gas prices, severely affecting operating margins. To remain viable, the company has had no choice but to pass these cost increases onto customers.

The linen service has 12-month contracts with gas suppliers and cannot access gas on competitive prices. The business owner has assessed the feasibility of transitioning to electric-powered operations. However, high electricity costs and unreliable electricity supply make it economically and operationally unviable.

This case highlights the urgent need for energy policy reform and support for small to medium enterprises (SMEs) in high-consumption sectors. Without affordable and reliable alternatives, businesses like this Sydney linen provider face ongoing financial strain with limited options to access an alternative and cheaper energy source.

CASE STUDY 6:
TrendPac – managing gas dependency in manufacturing

TrendPac is an award-winning Australian-owned manufacturer of household and personal care liquids. The company prioritises sustainability in the circular economy manufacturing packaging using recycled plastics and developing products that clean effectively, at affordable prices. On average, TrendPac delivers over 50 million products to households annually across Australia: that is why they are guardians of cleanliness, health, and sustainability.

The company relies heavily on gas-powered equipment, consuming around 16 gigajoules (GJ) of gas yearly. Gas price fluctuations directly impact production costs and product pricing. TrendPac currently holds a fixed term contract at a fixed price, preventing price increases during this period.

CEO Wayne Dicks highlights the uncertainty beyond this contract due to potential gas shortages, which could disrupt production and increase costs. TrendPac operates in a competitive market with global competitors and is a large employer on the Central Coast, with 215 permanent and 50 labour hire staff.

This case underscores the importance of gas security for manufacturing sustainability and cost control.

CASE STUDY 7:
Orica NSW: Reducing gas consumption and lowering emissions through renewable hydrogen use

Orica is a major Australian multinational and NSW's only domestic producer of ammonia. Orica uses natural gas as chemical feedstock to produce large volumes of ammonia, which is then converted to ammonium nitrate and nitric acid, used in the manufacturing of mining and construction explosives. Ammonia is also used as a fertiliser and a refrigerant.

Currently one of the largest industrial users of natural gas in NSW, Orica is looking to reduce its use of natural gas at its Kooragang Island (KI) facility near Newcastle. Orica is hoping to be a first mover in catalysing a domestic renewable hydrogen industry in NSW and recently was conditionally awarded $432 million in ARENA Hydrogen Headstart funding towards Phase 1 of its proposed Hunter Valley Hydrogen Hub (HVHH). The hub represents the first commercial-scale renewable hydrogen project in New South Wales.

Renewable hydrogen from the HVHH will be piped directly to Orica's KI ammonia plant, replacing approximately 7.5 per cent of the natural gas currently used as feedstock. This will release gas back into the network for other domestic consumers and will reduce the site's emissions equal to taking around 26,500 cars off the road each year. The HVHH will support the decarbonisation goals of Orica's customers by enabling the manufacture of lower carbon ammonia and ammonium nitrate.

"Orica operates heavy manufacturing sites in a hard-to-abate industry. Such abatement projects are extremely expensive and complex to execute. Ensuring we secure cost competitive gas contracts as a transition feedstock, as well as cost competitive renewable electricity and recycled water, will be critical enablers of this long-term project." **Orica CEO and Managing Director Sanjeev Gandhi**

Orica Limited | Member Since 2012

Gas (natural and renewable) will be needed to decarbonise industry

Gas will be needed as a decarbonisation pathway for various coal powered industries unable to electrify. Decarbonising hard-to-abate sectors is challenging as electrification powered by renewable electricity is either too costly or the technology is unavailable.

These sectors include iron and steel production, chemical manufacturing, high-temperature industrial heat, long distance and long-haul transport, shipping, aviation and agriculture. In NSW, these sectors account for around 24 Mt or 18% of NSW's annual emissions[17]. Natural gas can act as a lower carbon energy source until renewables gas industries mature.

The Future Gas Strategy recognises the roles of renewable gases for industry, and the GSOO recognises the need for extra supply of gas in the future, and states that 'opportunities for renewable gas are likely to rise in future, which may stimulate more identified resources'[2, 5]. As previously discussed, Australia's gas distribution networks are already trialling the delivery of renewable gas and renewable gas blends to customers in various projects across Australia.

As discussed, renewable gases including biomethane and hydrogen can be used as substitutes to natural gas within existing gas infrastructure. Renewable gases via shared infrastructure can offer a cost-effective, and sometimes the only viable, decarbonisation pathway for industrial users that are hard to electrify and connected to the gas network.

CASE STUDY 8:
Brickworks Limited –
Advancing renewable gas initiatives in manufacturing

Brickworks Limited is a leading Australian manufacturer of building products, where natural gas is integral to their manufacturing processes, particularly in brick kiln operations.

Brickworks has committed to a 15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030, from baseline FY22, across combined Australian and North American operations.

To achieve this, they have committed to several initiatives including:

- Increasing operational energy efficiency, including a new state-of-the-art brick manufacturing facility in Western Sydney that completed commissioning in 2024.
- Brickworks has already incorporated biofuels such as sawdust into its energy mix, accounting for 11% of its Australian energy mix in FY24.
- Brickworks has partnered with Delorean Corporation to undertake a comprehensive feasibility assessment on the development of an anaerobic digestion facility that converts organic waste into renewable gas. Stage 1 of the feasibility study has shown that, if developed, the facility has the potential to produce approximately 253,000 GJ p.a. of renewable gas. If the project receives Board approval to proceed, the facility could reduce Brickworks Scope 1 emissions by approximately 13,012 tCO_2e p.a. through the displacement of natural gas.
- Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption.

Brickworks Limited is an exemplary example of the ability and opportunity of renewable gas for industry in NSW. Actively integrating renewable gas solutions into manufacturing processes provides a low carbon alternative to natural gas.

Recommendations

Strategic planning for gas in NSW must be approached with the same level of rigour, ambition and coordination that has characterised the electricity sector's transformation over the past decade. While electricity decarbonisation has advanced through a clear roadmap and investment signals, the gas sector remains under-prepared for its dual role in supporting near-term energy security and enabling long-term industrial decarbonisation. In June 2025, the Australian government announced a Gas Market Review that will improve gas planning by considering long-term policy settings and reforms for Australia's gas markets to support investment and energy security for Australia.

Gas planning must deliver three objectives: address short-term supply shortfalls; support an increasingly uncertain market and demand profile in the medium term; and decarbonise the gas sector in line with net zero. This requires the NSW Government to take a least-cost, fuel-agnostic and market-led approach prioritising outcomes for affordability, reliability, and emissions reduction rather than prescribing technologies or pathways.

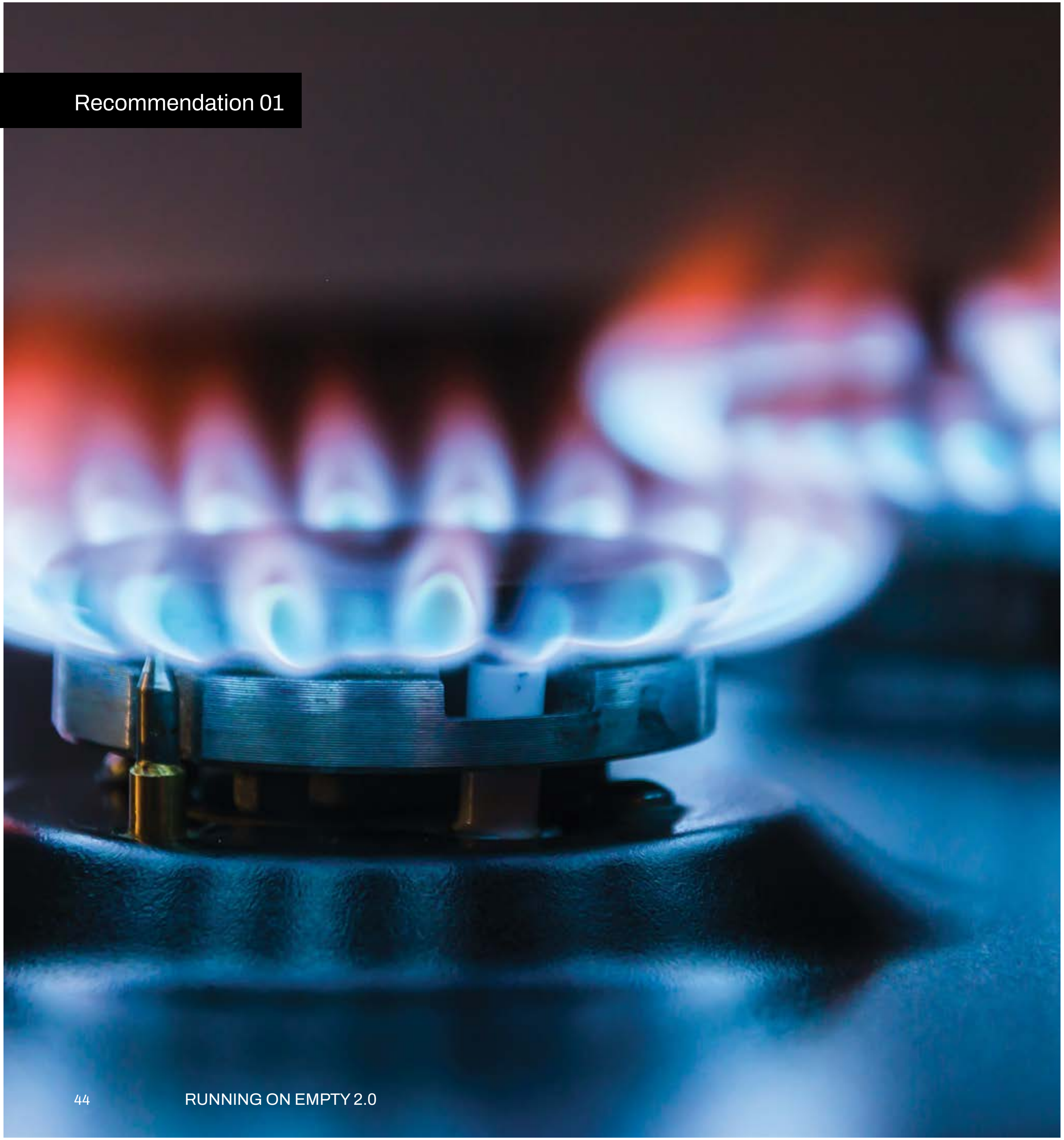
The 2025 Gas Statement of Opportunities (GSOO) confirms that, without further investment, a structural supply gap will emerge in southern states from 2029[5]. This is driven by declining production from existing and committed gas fields, with AEMO projecting a 32 per cent reduction in annual production by 2029. To address this, AEMO outlines several parallel solutions that must be explored, including:

- Maximising production from existing reserves and adjacent undeveloped fields, where environmental impacts can be responsibly managed.
- Demand-side reductions driven by net zero-aligned sectoral plans.
- Accelerated development of low-emission gases, such as biomethane and hydrogen.
- Increased domestic allocation from LNG exporters.
- Expansion of gas infrastructure, including pipelines, storage, and import terminals.

Business NSW strongly agrees with AEMO's assessment. NSW must act now to preserve supply stability and prepare for a low-carbon gas future that supports economic growth. This is not just a supply issue; it is an industrial policy imperative.

To transition from reliance on raw commodity exports like coal to a clean, value-added industrial economy, NSW must establish frameworks that support energy-intensive industries. Sectors such as clean metals, fertilisers, green chemicals, and renewable fuels require reliable, competitively priced gas or renewable gas alternatives. Without a stable investment environment, NSW risks losing the opportunity to anchor new export industries and jobs onshore.

Planning must be driven by clear outcomes: maintaining firm, dispatchable energy; enabling industrial competitiveness, and ensuring investment confidence through policy clarity and technology neutrality. By learning from the electricity transition, NSW can shape a gas strategy that reduces emissions, builds sovereign capability, and delivers both environmental and economic dividends.



Recommendation 01

Unlock new sources of natural gas

While gas demand in NSW may evolve over time, AEMO's 2025 Gas Statement of Opportunities is clear: new supply is essential, regardless of declining residential and commercial usage. From 2029, the east coast will face structural shortfalls unless further investment is made to replace declining production, particularly from the Bass Strait wells. NSW cannot afford to delay.

Business NSW has long argued for the importance of timely domestic supply. In 2019, *Running on Empty* recommended the expedited approval of the Narrabri Gas Project. While the project was approved in 2020, it has yet to reach the final investment decision, with Santos still resolving remaining approvals. However, in May 2025, the National Native Title Tribunal approved the project, clearing one of the last remaining barriers for the project which still needs to secure pipeline approval. That decision is now the subject of a further appeal to the Federal Court, which will be heard in March 2026. Narrabri remains fundamental to NSW's short-term energy security, and the Government must do everything in its power to accelerate its development.

However, the approval of Narrabri cannot be considered a standalone solution. Additional options must be unlocked and facilitated through a market-led approach that supports credible, investable projects without picking winners. These include:

- **Conventional onshore production** from underdeveloped fields in the Bowen, Surat, Galilee, Cooper, Gippsland, Otway, and Gunnedah basins (all outside NSW).

- **LNG import terminals** that can provide flexibility, new competition, and short-to-medium term supply, particularly during seasonal or peak-day demand

- **Pipeline interconnection and expansion**, especially from northern basins, to improve supply diversity and price stability across the southern states.

- **Establishing an east coast gas reservation** could help to keep more gas onshore for local users, stabilising prices and improving supply certainty.

To deliver these outcomes, the NSW Government should:

- **Streamline project approvals and reduce regulatory friction:** Implement a fast-track development pathway for gas projects that meet clear environmental, commercial, and domestic supply criteria. Coordinate planning across land access, native title, and environmental licensing.

- **Enable LNG imports through open-access infrastructure:** Recognise the value of LNG terminals, such as the completed Port Kembla facility, not through mandated procurement, but by ensuring gas infrastructure (like pipeline reversals) allows competitive supply to reach end users. Market players, not governments, should determine which terminals proceed based on demand and pricing.

- **Ensure sovereign energy resilience:** Establish clear expectations via the Energy and Climate Change Ministerial Council (ECMC) that a portion of uncontracted LNG or new domestic gas supply should be made available to Australian users – particularly in strategic, trade-exposed sectors. Use upcoming reviews of existing policy levers (e.g., Australian Domestic Gas Security Mechanism) to guide voluntary arrangements.

- **Link gas strategy to industrial development:** Support gas supply that underpins future-facing industries such as green metals, low-carbon fertilisers, and advanced materials. Access to firm, affordable energy remains essential to unlocking sovereign manufacturing capability and replacing NSW's dependence on declining coal exports.

Taken together, these actions would ensure NSW has a credible, least-cost, market-led pathway to secure gas supply, preserve industrial competitiveness, and support new domestic value creation through the transition.

Recommendation 02

Recognise the role of gas infrastructure in the energy transition

Gas infrastructure, transmission pipelines, gas storage and local distribution networks, will play an essential role through the transition. They are needed to transport natural gas, enable integration of possible LNG imports, and prepare the system to carry renewable gases like biomethane and hydrogen in the future.

However, the investment environment for gas infrastructure is increasingly misaligned with these long-term objectives. Regulatory uncertainty, declining customer bases, and unclear policy signals are creating barriers to the timely upgrades and adaptations required to ensure system reliability, affordability and decarbonisation.

Business NSW recognises that infrastructure decisions made today will shape the gas system of 2050. Policy settings must evolve to encourage ongoing private sector investment in both new and existing assets without which supply flexibility, industrial resilience and renewable gas uptake will be compromised.

A key risk is the potential reclassification of regulated pipelines under the Form of Regulation Review (FoRR) process. As it stands, the Australian Energy Regulator (AER) has the discretion to initiate reclassification reviews, which can undermine long-term revenue certainty. Investors have warned that this risk discourages timely infrastructure investment, especially in brownfield upgrades or renewable gas readiness projects.

At the same time, the local distribution network, which supplies over 1.5 million residential and business customers in NSW, may come under pressure from unmanaged electrification. While some residential demand may decline, the network remains critical for commercial and industrial customers who rely on gas for high-heat and continuous operations.

To enable continued investment and manage a stable transition, the NSW Government should treat gas infrastructure as a long-term enabler of economic resilience. The NSW Government's October 2025 approval for APA Group to convert the Moomba–Sydney Ethane Pipeline demonstrates how repurposing existing infrastructure can rapidly and cost-effectively strengthen NSW's gas supply resilience.

NSW should recognise all gas infrastructure, like pipelines, storage and distribution networks, as strategic transition assets. They support firming for electricity, decarbonisation for hard-to-abate sectors, and future industrial growth linked to renewable gases.

Reforms are required to:

- mitigate investment risk associated with the risk of regulatory changes
- encourage lower cost repurposing of existing infrastructure, rather than relying solely on new infrastructure builds
- ensure electrification policies are sequenced with gas infrastructure planning to avoid cost shocks for customers; and
- support capital upgrades that allow for hydrogen blending, multi-point biomethane injection, reverse flow, and compression upgrades – particularly where these changes unlock new regional or industrial supply options.

Together, these reforms would restore confidence for infrastructure investors, prevent stranded asset risk, and ensure NSW retains a flexible, affordable and future-ready energy delivery system. Without these reforms, the state risks underinvestment, higher transition costs, and the premature decline of critical industrial infrastructure.

Recommendation 03

Enabling the low-carbon NSW economy of the future

As NSW moves toward its legislated net zero targets, and with the NSW Renewable Fuel Strategy now released, attention must turn to how the state decarbonises sectors that cannot readily electrify. Industrial heat, chemical feedstocks, freight transport and distributed energy users will continue to require gaseous fuels long after residential electrification is well-advanced.

For these sectors, renewable gases such as biomethane, e-methane and green hydrogen offer a pathway to deep decarbonisation while retaining energy flexibility and industrial productivity. However, without clear policy support, these fuels will remain uncompetitive in the near term. Project developers face high capital costs, uncertain offtake, regulatory complexity, and limited feedstock access.

NSW must now build on the Renewable Fuel Strategy by putting in place the investment, regulatory and market frameworks needed to activate a domestic renewable gas industry. This industry can support clean manufacturing, regional development, and economic resilience through the transition.

To achieve this, the NSW Government should:

- **Send a clear long-term signal on the role of renewable gas:** Through the upcoming Gas Decarbonisation Roadmap, confirm that renewable gases will be a core component of NSW's net zero economy, particularly in hard to abate sectors such as paper, steel, fertiliser, glass, food processing and chemicals as well as medium-and-high-density housing.

- **Implement demand-side mechanisms to build market confidence:** Establish renewable gas purchasing targets for large energy users and government procurement contracts. These commitments will help reduce offtake risk, support early project investment and send clear demand signals to investors and financiers.

- **Remove barriers to biomethane development and feedstock aggregation:** Facilitate the creation of biomethane hubs near organic waste sources, including wastewater treatment plants, food processors and agricultural areas. Streamline approvals, simplify network injection requirements and enable third party access to shared infrastructure.

- **Support feasibility and project development activities:** Provide targeted funding for feasibility studies and front-end engineering design for renewable gas projects, particularly those aligned with industrial precincts or network integration opportunities.

- **Modernise gas quality and blending standards:** Accelerate updates to AS4564 (Specification for General Purpose Natural Gas) to allow safe blending of biomethane and hydrogen in line with international best practice. Ensure appliance and metering compatibility across networks.

- **Establish parity with other clean energy policy mechanisms:** Ensure renewable gas projects are eligible for comparable levels of policy support currently afforded to renewable electricity, including access to certificates, incentive schemes and market transparency mechanisms.

- **Align renewable gas policy with industrial strategy:** Position renewable gas as an economic enabler for advanced manufacturing and value-added exports, not simply a replacement fuel. NSW should leverage renewable gas to attract investment in clean commodities such as low emissions fertilisers, fuels and green materials.

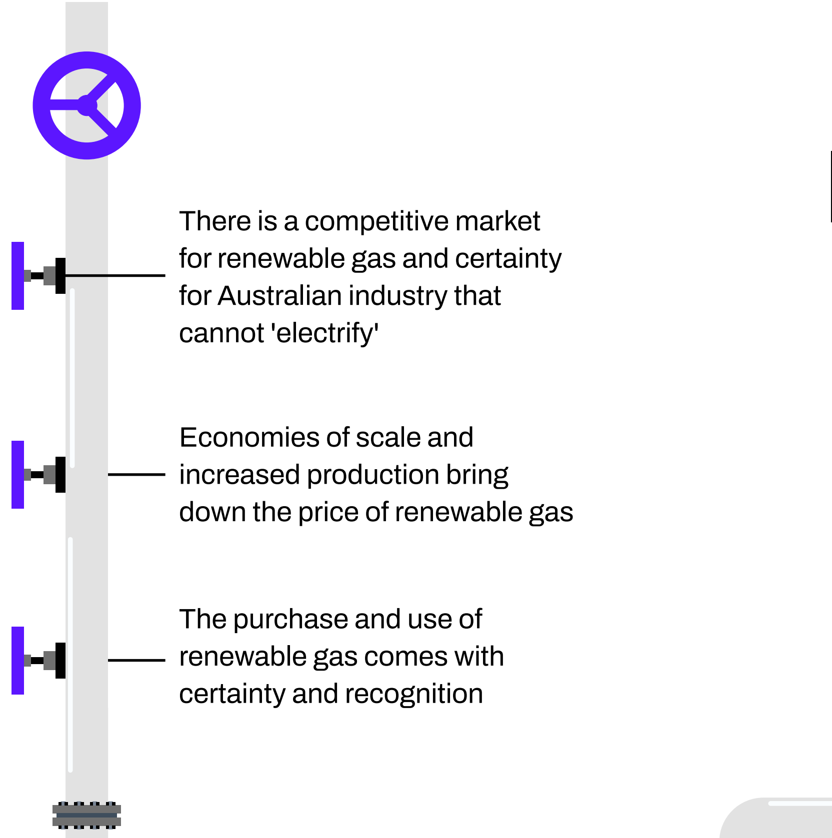
To complement current progress, further action should:

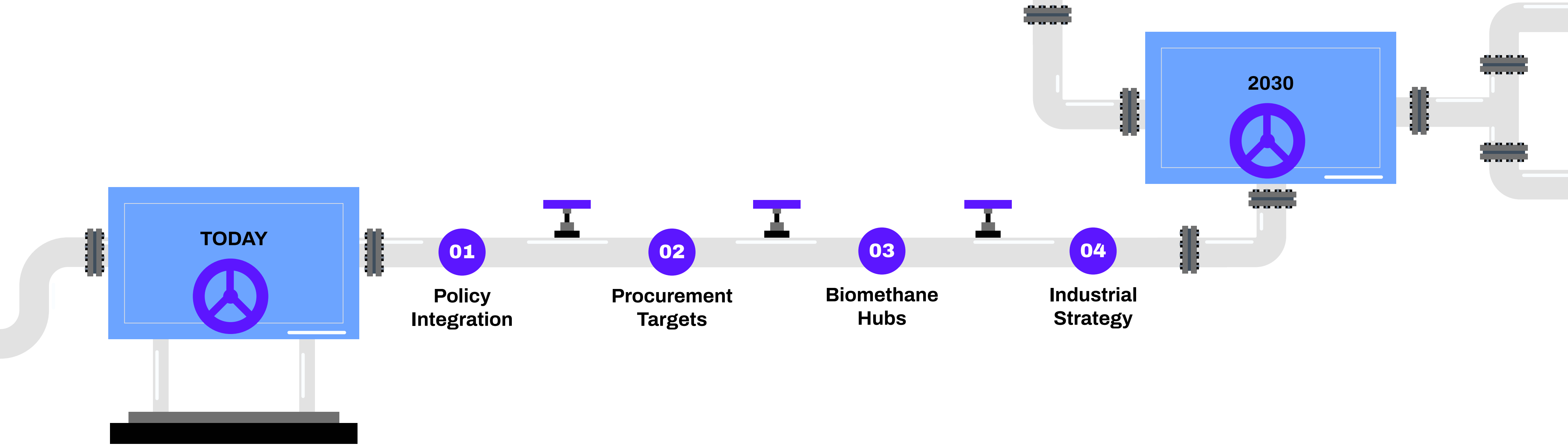
01. **Include renewable gases in NSW Net Zero economy** through the upcoming Gas Decarbonisation Roadmap and Renewable Fuel Strategy.

02. **Establish renewable gas purchasing targets** for large energy users and government procurement contracts. These commitments will help reduce offtake risk, support early project investment and send clear demand signals to investors and financiers.

03. **Remove barriers to biomethane development** by facilitating the creation of biomethane hubs near organic waste sources and streamlining and simplifying approvals and infrastructure requirements.

04. **Align renewable gas policy with industrial strategy** to position renewable gas as an economic enabler for advanced manufacturing and value-added exports, not simply a replacement fuel.





Recommendation 04

Ensure a reliable transition to low emission electricity

Long-duration gas generation can ensure a stable and reliable electricity system as coal exits the grid. It provides dispatchable capacity, system strength, and security during periods of low renewable generation, while also supporting electrified loads and industrial resilience. However, current market settings do not provide sufficient investment signals for these assets to remain viable, let alone expand to meet future demand.

According to AEMO's Integrated Systems Plan, up to 15 GW of gas generation is needed across the NEM by 2034-35 to maintain reliability and avoid supply shortfalls[18]. Much of this capacity will need to come from technologies capable of sustained, multi-hour output. Yet the energy-only market increasingly relies on these generators to provide firming without offering the revenue certainty to support their continued operation.

This investment gap is already visible. Several gas peaking plants have been mothballed or withdrawn from the market due to insufficient returns, even as AEMO's intervention costs rise. At the same time, NSW has already extended the retirement of Eraring Power Station to prevent increasing exposure to renewable volatility, and rising electrification-driven peak demand. Without long-duration gas generation, reliability risks will increase, and reliance on short-duration batteries and interconnectors will be overstretched.

South Australia has responded to similar challenges with its proposed Firm Energy Reliability Mechanism (FERM). The scheme identifies long-duration capacity needs through an annual Firm Energy Target and underwrites new and existing capacity through competitive tenders. It is designed to operate independently, deliver value for money to consumers, and maintain system resilience in the face of coal retirements and variable renewables.

NSW should adopt a similar approach by establishing a tailored, state-based capacity mechanism that:

- **underwrites long-duration dispatchable gas generation** to ensure support for firm, flexible capacity that complements renewables and sustains peak load events.

- **aligns with AEMO reliability planning** and targeted to NSW's unique demand profile and industrial base.

- **provides revenue certainty to prevent premature exits** and avoid sudden capacity shortfalls by giving gas generators clear forward revenue signals to remain in the market.

- **avoids higher-emissions alternatives:** Without new long-duration gas, NSW risks extending the life of ageing coal-fired power stations to maintain system reliability – an outcome that would significantly increase emissions and undermine transition goals.

A state-based capacity scheme would provide the certainty needed to retain and invest in critical firming assets, support orderly coal retirements, and ensure the grid remains stable, resilient, and ready for a high-renewables future.

Conclusion

Gas remains a critical enabler of industrial activity in New South Wales. It powers essential sectors such as manufacturing, food processing, mining and construction, and supports over 1.5 million households and tens of thousands of small businesses. Its role is not temporary. Even as electrification advances, many industrial users will continue to rely on gas because alternatives do not yet exist or remain economically unviable.

Gas is also a strategic decarbonisation tool.

It can replace coal in high-emissions industries and provide firming capacity for the electricity grid. Renewable gases such as biomethane and hydrogen will be essential in a net zero economy, particularly for hard to abate sectors that cannot electrify. These are not legacy fuels. They are transition technologies that underpin the next generation of clean, competitive industries.

Affordable and reliable gas is essential to maintaining Australia's comparative advantage in energy intensive manufacturing. Historically, domestic gas supply supported sovereign capability in sectors such as fertilisers, chemicals, cement, food and metals. That advantage is now under pressure. High prices, declining reserves and policy uncertainty are placing strain on gas dependent businesses that have few alternatives.

Gas planning must be fully integrated into broader energy system planning, including electricity and industrial policy. This requires a least-cost, technology neutral approach that ensures infrastructure and market decisions are made in alignment. As gas and electricity markets become more interdependent, coordination will be vital to avoid reliability gaps and rising costs.

As AEMO's Gas Statement of Opportunities states, we will likely need to explore all known solutions to meet our gas demand needs through to 2050. That includes new supply, expanded and adapted infrastructure, support for renewable gas projects and demand side flexibility.

The NSW Government must now work with gas producers, energy users, the Commonwealth and other states to develop a coordinated plan that delivers four core outcomes:

1. Brings on new gas supply and infrastructure to address near term structural shortfalls

2. Supports energy intensive industries with access to affordable and reliable gas throughout the transition

3. Builds a domestic renewable gas industry that enables long term decarbonisation while supporting jobs, investment and regional development

4. Ensures a reliable transition to low emission electricity.

This is not just a climate policy issue. It is a matter of industrial strength, economic security and sovereign capability. If NSW is serious about rebuilding advanced manufacturing and positioning itself as a clean energy leader, it must treat gas as part of the solution, not a problem to be phased out.

With the right policies in place, gas can support a low emissions, globally competitive economy that delivers for workers, communities and future generations. Without it, NSW risks losing not just energy flexibility, but the foundation of its industrial future.

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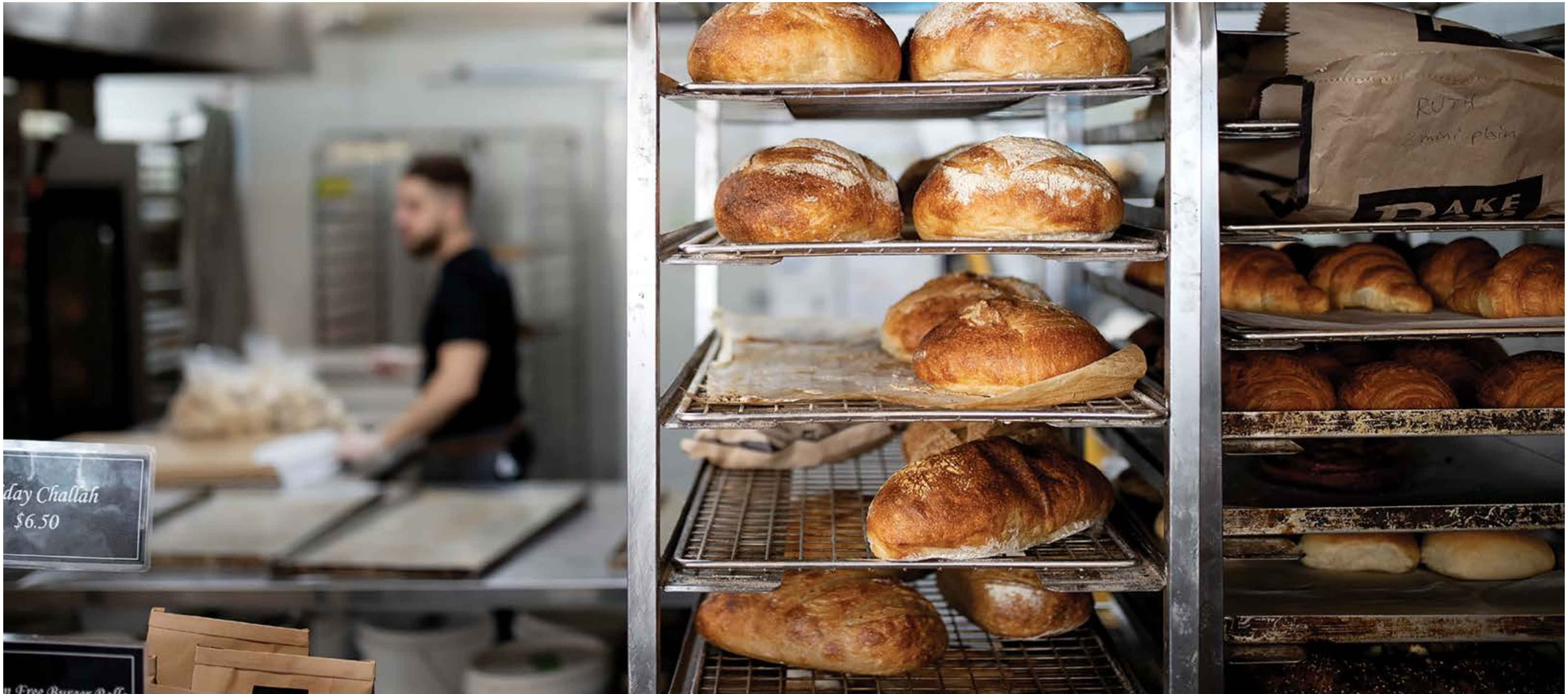

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