



Chamber of Commerce
and Industry WA

The Critical Role of Gas in Western Australia's Energy Transition and Economic Diversification

March 2025



Introduction

Modern, thriving economies do not exist without affordable and reliable energy. Around the world, different nations rely on different sources — coal, nuclear, hydro, gas, and renewables — to meet their energy needs. In Australia, no source is more critical than natural gas.

Gas plays an essential role in keeping the lights on, powering industry, and supporting jobs. It is the backbone of WA's economy. Despite challenges, there is a tremendous opportunity to enhance investment in gas, ensuring it continues to power our industries, sustain our homes, and drive economic growth well into the future.

A gas shortage wouldn't just be an inconvenience — it would be economically and socially damaging for WA, for Australia, and for countries relying on our gas to meet energy security and decarbonise their energy and economic systems. While natural gas has driven Australia's prosperity for decades, its full benefits remain largely unrecognised. Gas is deeply embedded in our daily lives — from heating and cooking, to powering hospitals, manufacturing essential goods, minerals processing, and supporting our transition to a cleaner energy future.

What's even less recognised is what happens if we don't have enough. The economic and social fallout of a gas shortfall is rarely discussed.

For the first time, gas producers and users have come together to provide a comprehensive, evidence-based picture of the role natural gas plays — and what's at stake if investment in natural gas stalls. The work has been underpinned by a rigorous and independent consultation process with gas users and producers, conducted by Australian Venture Consultants, an independent economic advisory firm.

The primary supporters of this work have been Alcoa Australia, Chevron Australia and Woodside Energy – all companies heavily invested in the future of the WA economy. Additionally, CCIWA has surveyed 853 WA businesses across 14 sectors to build a detailed evidence base on the role of gas in WA's economy.

Introduction: key findings



Gas is a cornerstone of WA's industries: The survey work identifies that more than 50% of WA businesses rely on natural gas, including in critical sectors like utilities, resources, and food services, making it vital for economic resilience across the state.



Gas fuels WA's industrial diversity: Beyond WA's leading mining and minerals sectors, gas powers the growing data centre industry, vital for digital economy expansion. It also supports desalination plants, which provide essential water resources, and is crucial for industries like alumina refining, cement production, and healthcare, which all rely on affordable, reliable energy.



Gas powers decarbonisation in Asia-Pacific: WA's LNG exports play a pivotal role in decarbonising the Asia-Pacific region, providing a lower-carbon energy alternative to high-emission sources, and supporting growth in renewables, accelerating the global transition to net-zero emissions.



A price uplift due to reduced supply could devastate WA's economy: Survey work identifies that gas accounts for an average 13% of production costs. A surge in gas prices to east coast levels could cripple industries dependent on affordable gas, leading to thousands of job losses and higher living costs, while eroding the state's industrial competitiveness. The resources sector alone could face a \$34-42 billion* contraction, threatening around 30% of WA's resources sector workforce.



An increase in supply could reshape WA's economic landscape: Improved supply could lower production costs, stimulating growth in key sectors like manufacturing and agriculture. The reduced costs could unlock opportunities for new investments, boost business competitiveness, and support a stronger, more diversified economy.

Australia must take proactive steps, now, to secure its energy future. The facts are clear: natural gas remains an essential driver of economic growth and energy security, offering significant opportunities for WA to lead the way in both sustainability and prosperity.

* All figures are AUD unless otherwise indicated.

Households and businesses rely on gas in more ways than you might think...

Households and businesses rely on natural gas in more ways than most people realise. It's not just about electricity and heating — it's a fundamental enabler of modern life and industry. Compared to fuels like coal, petrol and diesel, as well as emerging alternatives like hydrogen, natural gas has distinct advantages.

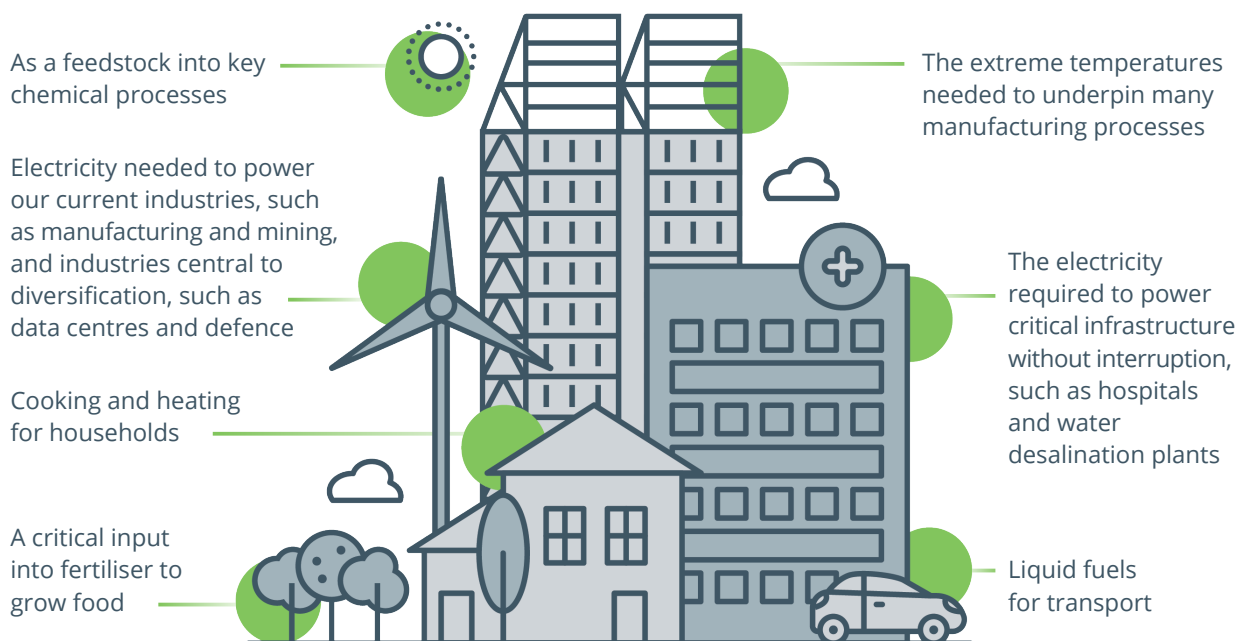
Flexibility and reliability — It can quickly scale electricity generation to match demand.

Extreme heat generation — Produces temperatures beyond 1,000 degrees Celsius, both continuously and on demand — essential for WA's industrial processes.

Stable and efficient transport — Comprehensive natural gas supply chains with strong safeguards are well established.

Lower emissions — A lower-emissions profile compared to other fossil fuels.

Gas isn't just another fuel — it's a necessary input for WA's most important industries.



Mining and manufacturing in particular depend on the high, sustained heat that gas provides.¹ Unlike electricity, which is not a suitable energy source to efficiently generate and sustain ultra-high temperatures, gas is essential for:

- Alumina refining — A critical export industry for WA that also supports downstream Australian aluminium smelting.
- Blast furnaces and cement kilns — Key to steel and concrete production.
- Downstream mineral processing — Essential for transforming raw resources into high-value products.
- Glass, brick and chemical manufacturing — Vital for building materials, plastics and fertilisers.
- Crushing and conveying minerals — helping to transport ore from ground to further processing and export.

Would-be alternatives like hydrogen are unlikely to be viable at scale for at least a decade, if not longer. Coal and diesel have higher emissions and are less efficient, making gas the only current practical solution for these Industrial processes.² Natural gas is also a direct feedstock in the manufacture of a range of products, including liquid fuels and chemicals such as ammonium nitrate for fertilisers.

Did you know?

Desalination and Perth's Drinking Water

Some 40% of Perth's drinking water is supplied by seawater desalination plants, which require enormous energy inputs. Without these plants, Western Australians would suffer a shortage of fresh, drinkable water. The plant in Kwinana alone processes 50 billion litres of fresh water per year, which is enough to fill Optus stadium 50 times.³ This volume, combined with the need for water 24 hours per day, 7 days a week, means that large, stable amounts of electricity are required to keep pumps operating continuously.⁴ At present, this can only be supplied through thermal generation or a hybrid of renewable and thermal generation, the most cost-effective and lowest emissions option requiring natural gas.

The materials that build our homes

The everyday materials needed to build a house — aluminium frames and glass for windows, steel for frames, cement for concrete, and bricks for foundations — all require temperatures exceeding 800 degrees Celsius in their production.

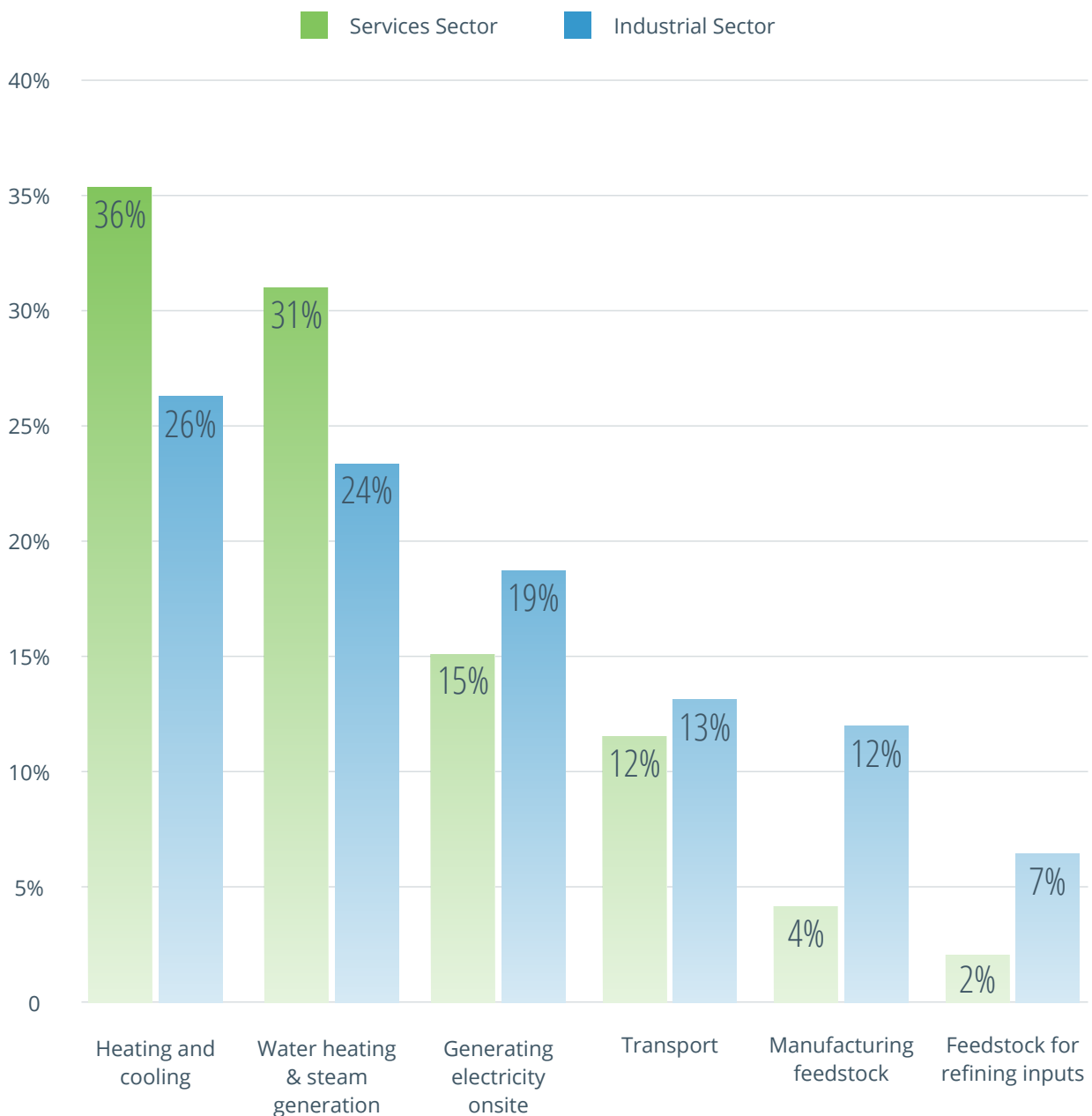
Without natural gas, these industries would face major disruptions — making solving the housing crisis even harder.⁵

1 Energy Research and Social Science, Mathur S. et al. *Industrial decarbonisation via natural gas: a critical review of developments, socio-technical systems and policy*. August 2022.
2 Australian Venture Consultants for Chamber of Minerals and Energy WA. *Western Australia's Competitiveness in the Hydrogen Economy*. November 2021.
3 Water Corporation, *Perth Seawater Desalination Plant*, 2025.
4 Kim, Jungbin, et al. *A comprehensive review of energy consumption of seawater reverse osmosis desalination plants*, November 2019.
5 ITP Thermal Pty Ltd for Australian Renewable Energy Agency. *Renewable energy options for industrial process heat*. November 2019.

Gas is central to WA's economy

WA industry depends on natural gas to a significant extent. In a survey of 853 businesses, most respondents (51%) said their business relies on gas (beyond use of grid electricity). Notably, service sector businesses indicated a slightly greater reliance on gas than the industrial sector (54% vs 52%). For the industrial sector (mining, manufacturing, construction and transport), the most common uses were heating and cooling (26%), steam generation (24%) and generating electricity onsite (19%). For the service sector (health services, retail, accommodation, education and other service industries), heating and cooling (36%) and steam generation (31%) were most common.

Figure 1: Gas Use

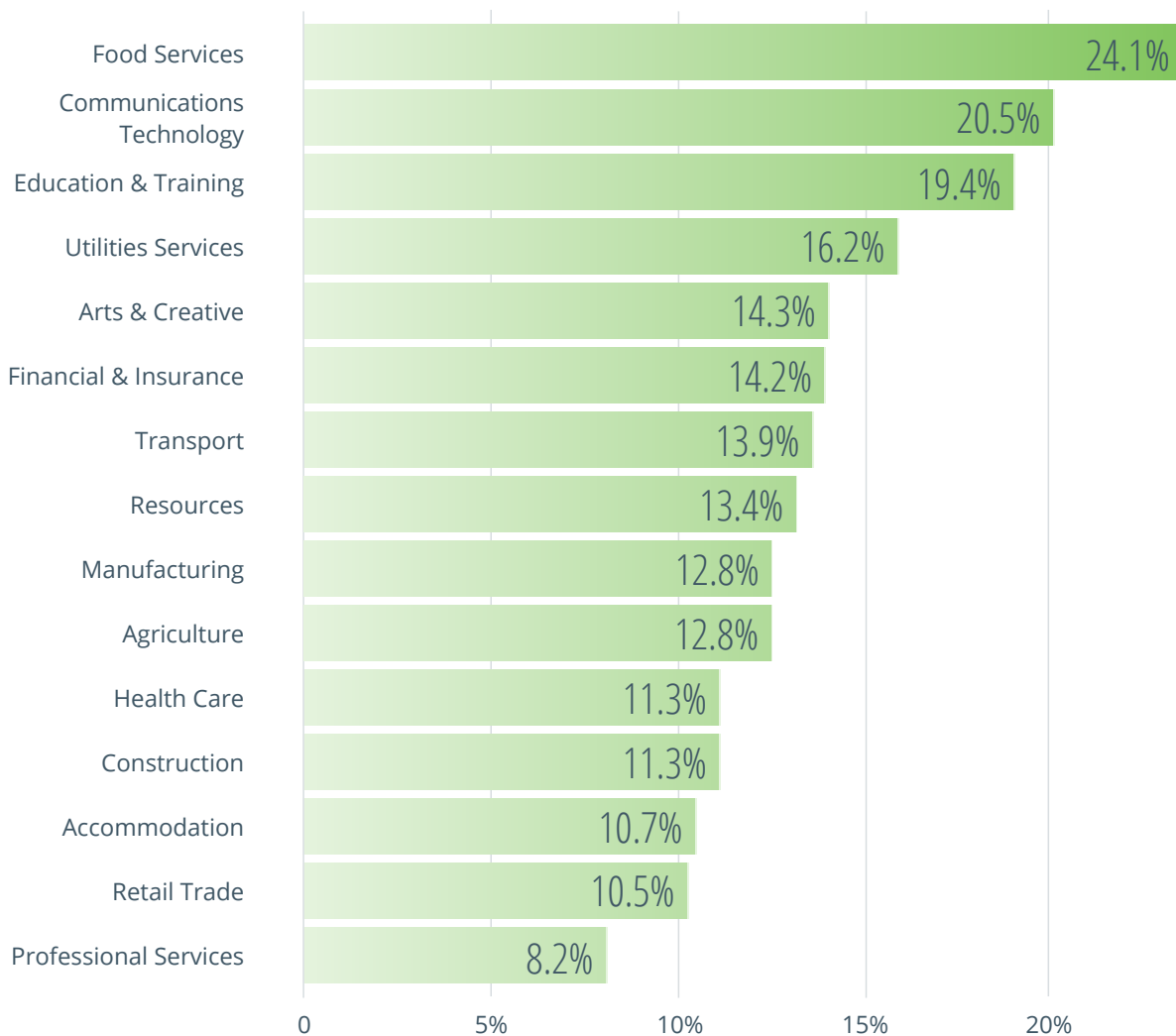


Source: CCIWA Survey

WA businesses reported that gas costs make up approximately 13% of their total production costs, on average.

The following figure identifies the industries with the highest proportion of production costs tied to gas.

Figure 2: **Approximately, what percent of your total cost of production relates to gas?**



Source: CCIWA Survey



Gas will be critical in the transition to cleaner energy systems

Western Australia has never been more dependent on natural gas for its energy security. As we transition to lower-carbon energy systems, the challenge isn't just building renewables — it's managing supply and demand in a highly variable system when the sun isn't shining or the wind isn't blowing. One of the biggest risks in this transition is renewable 'droughts' — when multiple renewable energy sources drop to less than 10% output simultaneously, requiring gas turbines or diesel generators to step in.⁶

In the Pilbara, despite world-class renewable resources, renewable 'droughts' lasting 8+ hours have occurred an average of 101 times per year over the past 11 years.⁷

Once Collie Power Station closes in 2027–28, we will rely on gas more than ever to provide firming capacity, support renewable uptake, and address a 2.9 GW shortfall in electricity generation by 2033–34.⁸

By all forecasts, our reliance on energy is only going to grow.

- AEMO modelling projects electricity demand could double by 2029-30.⁹
- In the Pilbara - the engine room of Australia's economy - electricity demand is forecast to triple, growing from 16 TWh today to at least 50 TWh by 2050.¹⁰

Economic growth, industrial expansion, and increased electrification are all driving this demand.

If we don't get the balance right, the consequences are severe: power outages, blackouts, industry disruptions, technology failures, and instability in public services.¹¹

WA businesses and households already face system volatility, and as the gap between peak and minimum power demand widens, these risks will only increase.

⁶ Renewable Energy Vol.220, Bracken, C et al. *Standardised benchmark of historical compound wind and energy droughts across the Continental United States*. January 2024.

⁷ APA Group Ltd. *Pilbara Energy System investor site visit*. 22 May 2024.

⁸ Australian Energy Market Operator. *Wholesale Electricity Market Electricity Statement of Opportunities*. June 2024.

⁹ Derived from Ibid.

¹⁰ Energy Policy WA. *Pilbara Energy Transition*- Presentation. September 2024 and AFR, Macdonald-Smith A. *The Pilbara plots its path from diesel to clean, green mining*. December 2024.

¹¹ ABC News, Bourke K. *Western Power network overwhelmed during WA power outages, review finds*. March 2022.

So, what are the solutions to manage this greater volatility?

There are four options, based on technology that exists today:

- Battery energy storage systems (BESS).
- Gas power generation.
- Continue coal power generation.
- Shut down industry and stop using electricity.

Of these, only two are realistic options: BESS and natural gas to support society's demand for energy and lower carbon aspirations.

Why gas remains essential

Natural gas is the optimal firm, scalable, and dispatchable energy source that can complement renewables and ensure grid stability. Without it, WA's electricity system would be volatile, particularly in regional areas.

“ During Australia's transition to a net zero emissions future, gas will continue to be used by Australian households, businesses and industry, and support the reliability and security of the electricity sector”: AEMO, 2024 Gas Statement of Opportunity

Battery storage: a promising but limited technology

Battery energy storage systems (BESS) are expected to play an important role, but they cannot fully replace gas. The biggest challenge with current BESS in WA is they provide approximately four hours stored energy at maximum discharge rates. Replacing gas with BESS would require:

1. A massive overbuild of grid-scale battery systems — at significant cost to WA taxpayers and businesses; and
2. Breakthroughs in battery technology to store at least 10 hours of energy by 2030.

If battery technology doesn't advance significantly in the next decade, natural gas will remain the only viable option to provide firming capacity needed to support system stability and reliability well into the 2030s.

The technological reality is clear. Completely replacing fossil fuels with renewables and batteries isn't realistic in the foreseeable future.

To secure WA's energy future, we must, in addition to pursuing other energy technology breakthroughs, continue to invest in gas — the flexible and reliable backbone of our evolving energy system. As noted in the Australian Government's Future Gas Strategy: “We cannot rely on past investments in gas to get us through the next decades. We need continued investment in, and development of, gas supply and transport infrastructure to get us through the energy transition with thriving industries”.

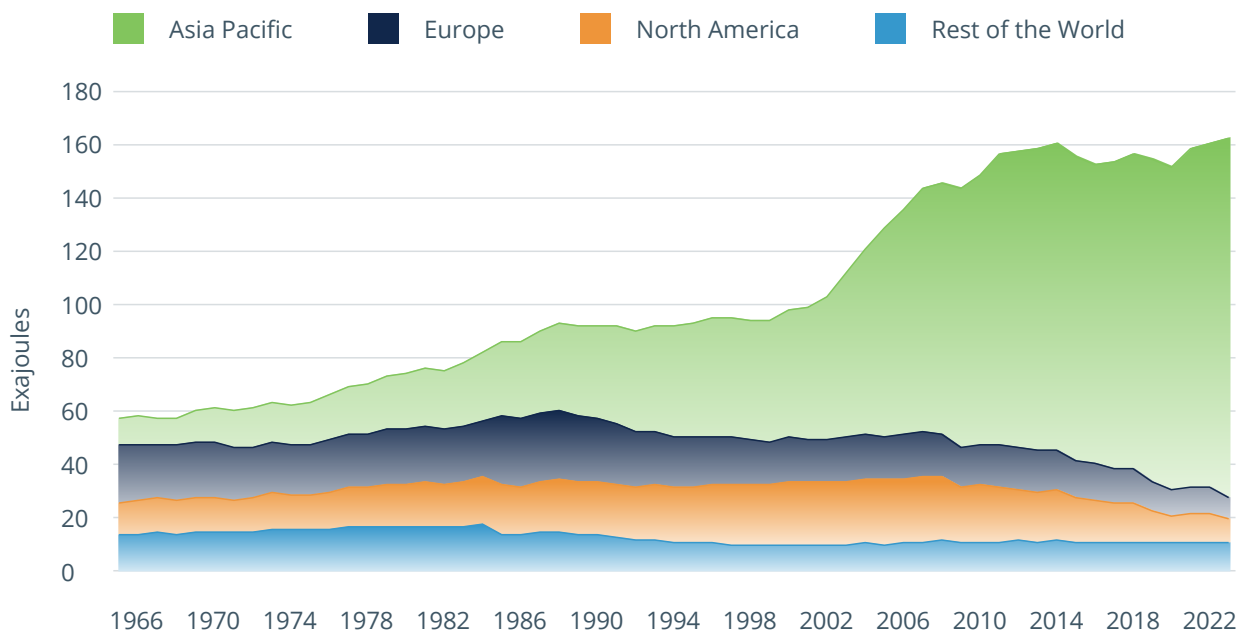
Gas also plays a vital role in lowering global emissions

Natural gas doesn't just support Western Australia — it plays a critical role in reducing global emissions, particularly in the Asia-Pacific region.

Across Asia, coal still dominates electricity generation and remains a major source of industrial thermal energy. As a result, China and India — two of the world's top three emitters — can make substantial emissions reductions by switching from coal to natural gas, which would in turn support further deployment of renewables.

“ Natural gas produces up to half the lifecycle CO₂ emissions of coal when generating electricity.”¹²

Figure 3: Global coal consumption



Source: Energy Institute¹³

¹² Dependent on the type and age of the gas turbine generator, International Energy Agency. *The Role of Gas in Today's Energy Transitions – Analysis* - IEA. July 2019.
¹³ Energy Institute. 2023 *Regional Overview*. 2023

“ The retirement of coal from the electricity sector is ‘the single most important step to align with the 1.5-degree goal of the Paris Agreement’¹⁴ ”

Australia is a major exporter of LNG to Asia’s largest economies, with Japan (36%), China (28%), South Korea (14%) and Taiwan (10%) being our major trading partners.¹⁵

According to various modelled scenarios, there will be demand for LNG out to 2050.^{16,17} Australia is well positioned to supply countries like China and India, as they seek to meet their energy security needs and emissions reduction goals.

Three major factors are driving this increasing reliance on gas:

- **Decarbonisation goals:** Nations are cutting coal reliance to meet emissions targets.
- **Industrial expansion:** Growing economies require more energy.
- **Renewable energy growth:** As intermittent sources increase, flexible, firm power is essential.

However, in many emerging economies, renewables alone haven’t kept pace with demand — leading to greater investment in coal and gas as backup power.

Did you know?

China, the global leader in renewable deployment (solar, wind, hydro), has increased its gas-fired generation by 40% and coal-fired power by 20% over the past five years — despite record renewable investment.¹⁸

Even as renewables expand across the Asia-Pacific, energy security and system flexibility remain critical. Gas-powered generation remains the most scalable, reliable and immediate source of rapid-response electricity today — and will continue to complement renewables through to 2050.¹⁹

Australia’s LNG is a ‘win-win’ — delivering lower emissions than coal while ensuring energy security for our trading partners.

¹⁴ United Nations. *UN Chief calls for immediate global action to phase out coal*. March 2021.

¹⁵ Geoscience Australia. *Australia’s Energy Commodity Resources 2024 Overview*, July 2024.

¹⁶ The Institute of Energy Economics Japan (IEEJ), Casaubon, R. et al. *IEEJ Outlook 2024*, October 2023.

¹⁷ International Energy Agency. *World Energy Outlook 2024*, October 2024.

¹⁸ Ibid.

¹⁹ Ibid.

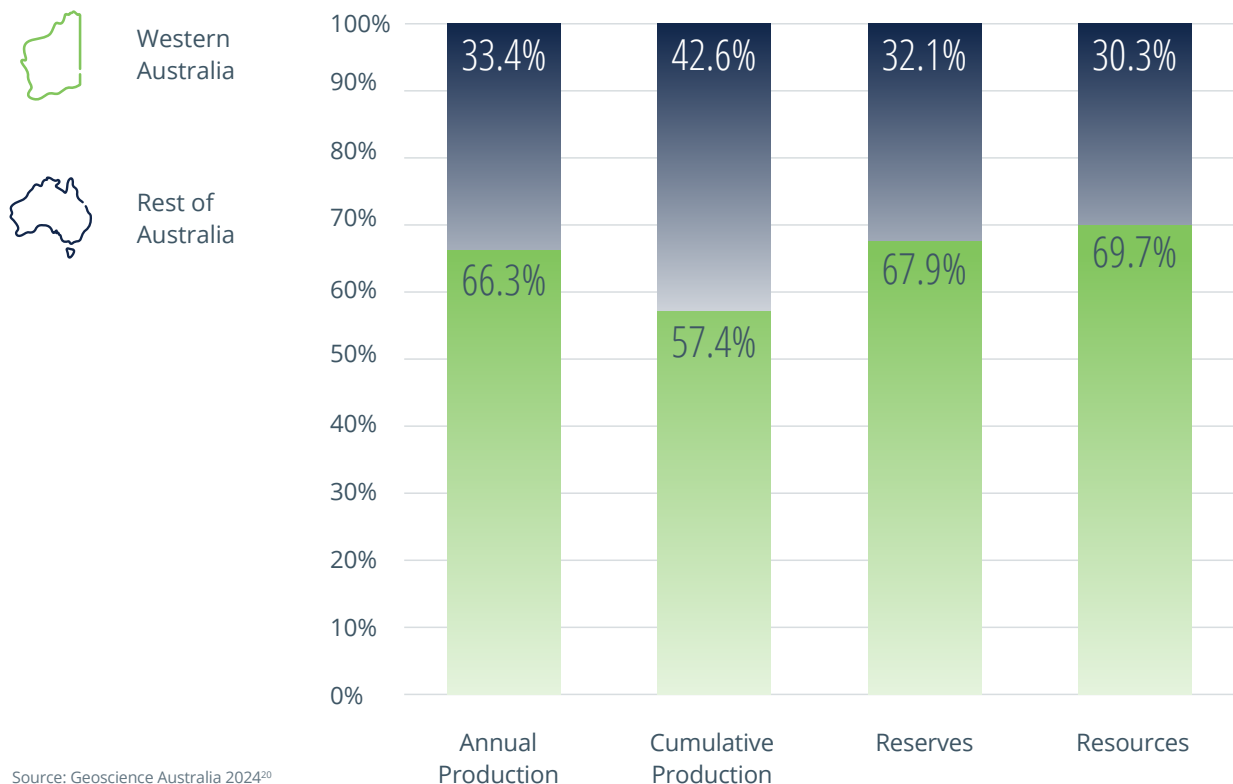
WA has an enviable competitive advantage given its endowments of natural gas...

Western Australia holds an unrivalled competitive advantage in natural gas, backed by decades of investment in exploration, development, processing, and export. This has cemented WA as a global leader in LNG — and a cornerstone of prosperity for both the state and the nation.

WA's competitive advantage in gas is clear:

- WA holds approximately two-thirds of Australia's natural gas production, reserves and resources.
- 93 percent of Australia's conventional known gas reserves are in WA's northwest.

Figure 4: % of national gas production, reserves and resources

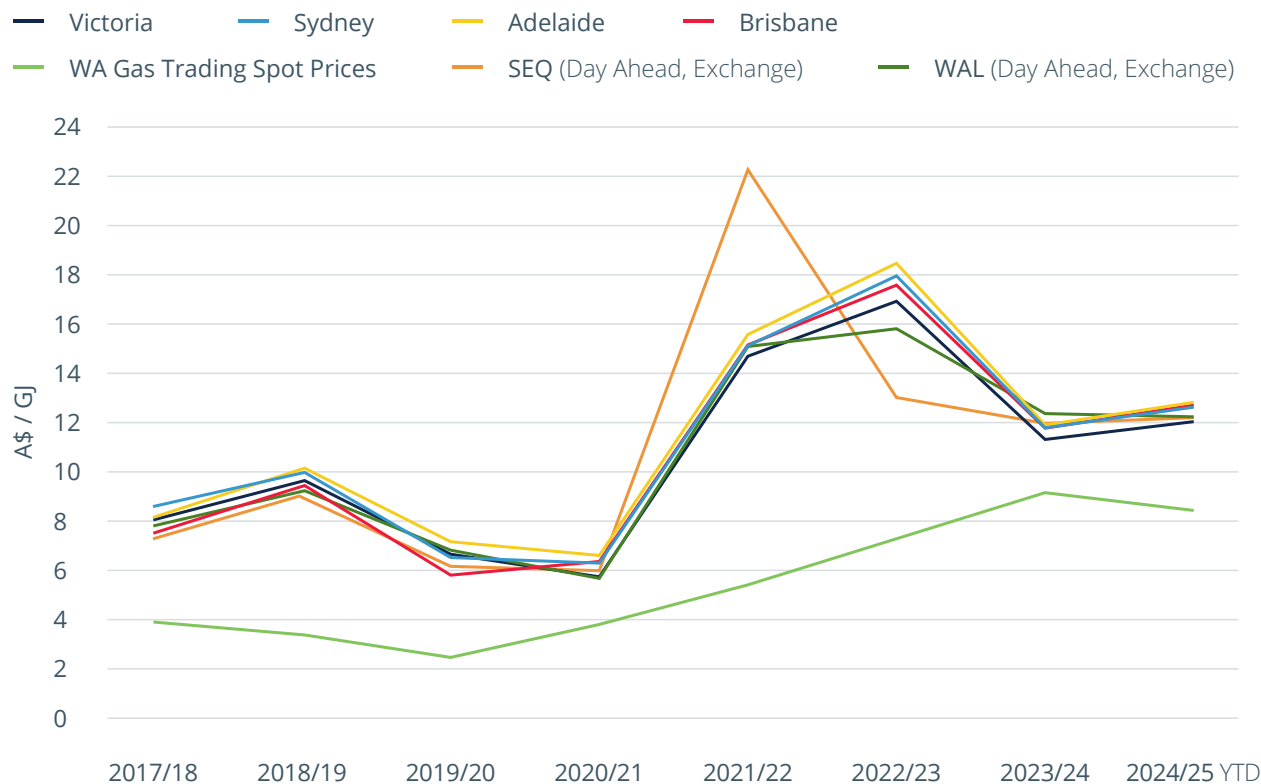


Source: Geoscience Australia 2024²⁰

20 Adapted from Geoscience Australia. *Australia's Energy Commodity Resources 2024: Gas*, July 2024.

These vast reserves ensure WA has the most affordable and stable fuel source, underpinning the state’s industrial expansion and economic strength.²¹

Figure 5: Gas prices in WA remain the most affordable in Australia



Source: Australian Energy Regulator²²

Affordable gas has been a driving force behind WA’s powerhouse economy for decades.

No sector relies more on gas than the state’s resources industry. A sector that represents nearly 45% of Gross State Product (GSP) directly employs 130,000 people²³ and in 2023-24, paid \$11.9 billion in royalties to the WA Government²⁴ — nearly half of the state’s total tax and royalty income.²⁵

It isn’t only mining that benefits from WA’s gas reserves. Gas is the backbone behind all our major manufacturing, heavy industry and other high-employment sectors.

Across the state, there are approximately 70 large customers of the domestic gas market, incorporating all Western Australia’s key industrial projects and vitally important electricity generation infrastructure.

21 Australian Energy Regulator. *Financial year to date market prices*. 2024.

22 Ibid.

23 Department of Energy, Mines, Industry Regulation and Safety (WA). *Industry activity indicators: employment*, undated.

24 Department of Energy, Mines, Industry Regulation and Safety (WA). *WA Mineral and Petroleum Statistics 2022-23*, March 2024.

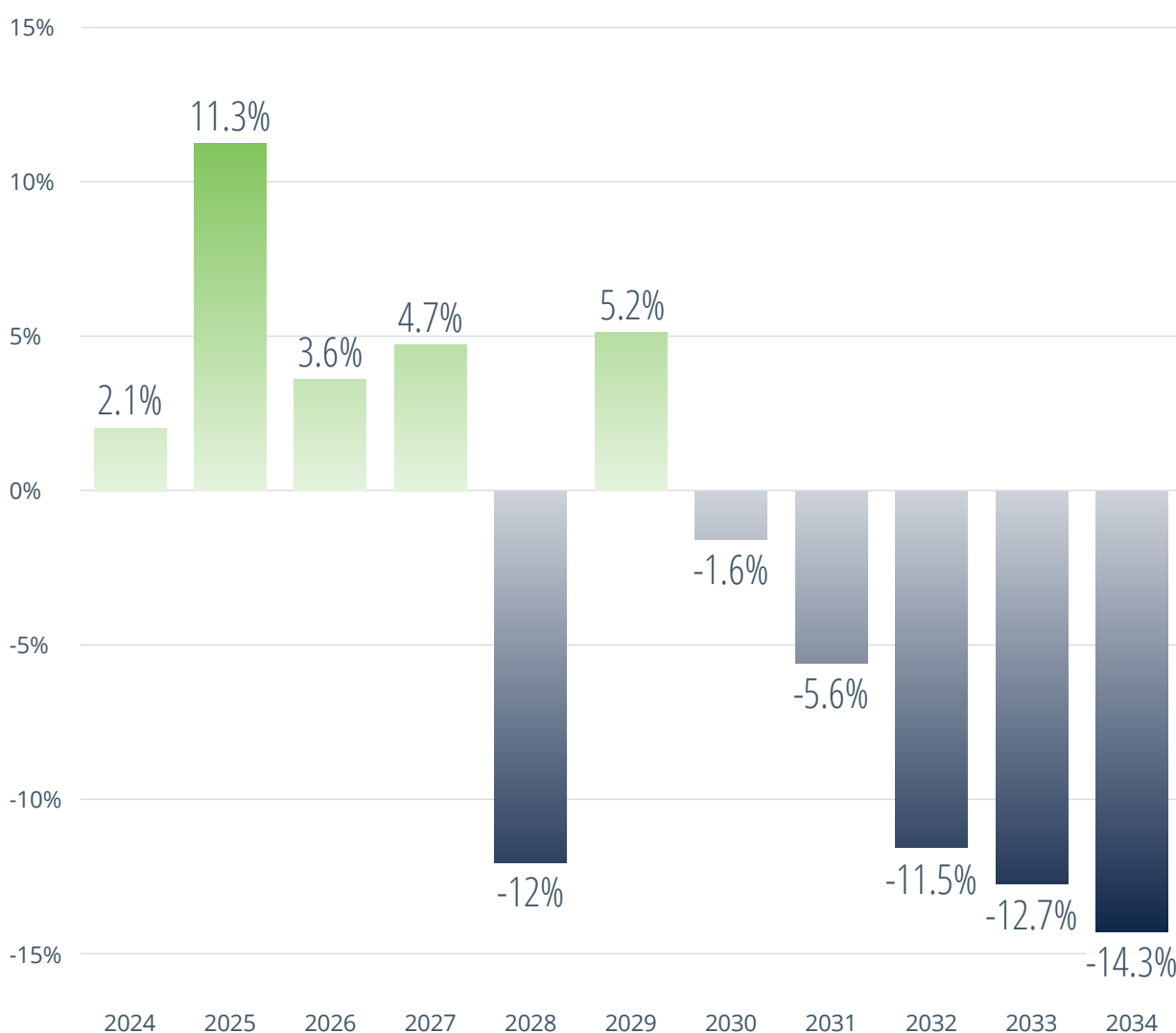
25 Chamber of Minerals and Energy WA. *WA’s budget surplus underpinned by a strong resources sector...again*, May 2024.

While gas fuels WA's domestic industries, it is also a critical export driving Australia's global leadership in LNG.²⁶ Emerging economies will drive 80% of global electricity demand growth by 2030, increasing reliance on gas for energy security.²⁷

As renewable energy adoption accelerates across the Asia-Pacific, the demand for natural gas as a firm, flexible backup power source is also rising.²⁸

Western Australia's competitive advantage in natural gas is, however, at risk of being eroded. AEMO's Gas Statement of Opportunities identifies a 12% shortfall of gas in 2028, rising to 14.3% in 2034 (Figure 6).

Figure 6: WA domestic gas supply-demand balance



Source: Australian Energy Market Operator²⁹

26 United States Energy Information Administration. *Natural Gas Monthly*. December 2024.

27 International Energy Agency. *World Energy Outlook 2024*. October 2024.

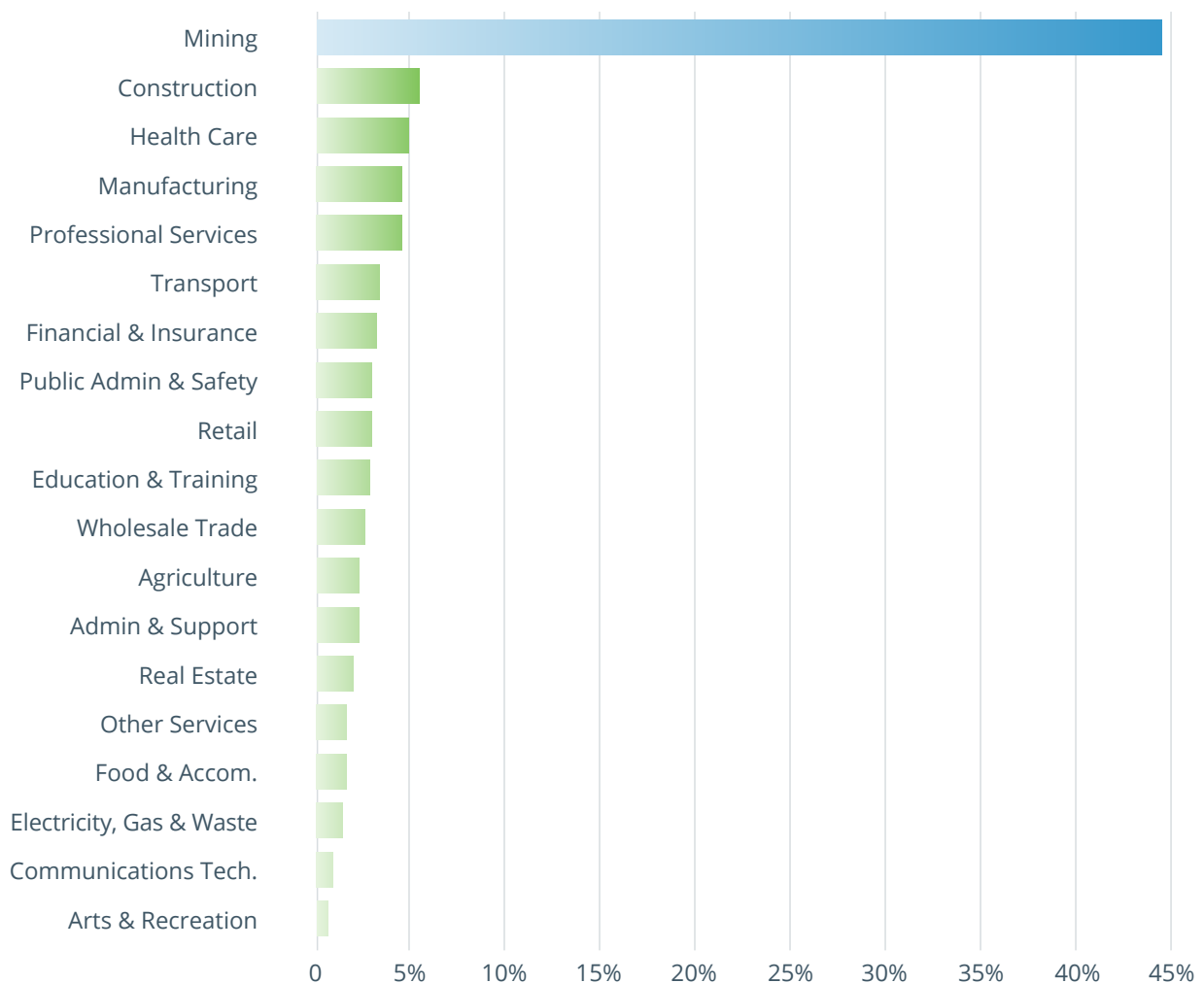
28 Asia-Pacific Economic Cooperation. *APEC Energy Demand and Supply Outlook 8th Edition*. September 2022

29 AEMO. *2024 WA Gas Statement of Opportunities*. December 2024. The chart shows the difference between demand and supply in each year as a percentage of demand.

We won't just need gas for electricity; our future growth and diversification will rely on it too

Western Australia's economy has long been anchored by the resources sector, but securing future growth requires diversification. The Western Australian Government's Diversify WA strategy aims to drive expansion across six priority sectors, but achieving this depends on one critical factor — affordable and reliable energy.

Figure 7: **What makes up WA's economy?** 2023-24, nominal GVA



Source:ABS



With WA's high operating costs, ensuring stable access to affordable gas is essential for the viability and competitiveness of industries positioned for future growth:³⁰



Defence industry: Defence relies on secure energy supplies — liquid fuels to power military assets, and a stable electricity supply for bases, logistics, intelligence, and accommodation. Local natural gas reserves strengthen national security and supports defence manufacturing in WA.



Lithium processing: Producing battery-grade lithium hydroxide requires extreme heat — above 1,000°C. In 2022-23, WA produced 3.2 million tonnes of spodumene concentrate, valued at \$20.9 billion. As a price-sensitive industry, access to affordable energy is crucial to its global competitiveness.³¹



Data Centres: AI, autonomous systems, remote operations, and satellite internet are fuelling enormous data growth. Global data centre power consumption is set to double by 2030, with Australia alone requiring 3,100 megawatts of new capacity. WA has a unique opportunity to tap into Southeast Asia's US\$1 trillion digital economy by leveraging gas-powered data centres as a competitive advantage.^{32,33}

WA's ability to diversify and thrive depends on reliable, affordable gas — not just for electricity, but for the industries of the future.

³⁰ International Institute for Management Development. *World Competitiveness Booklet 2022*. June 2022.

³¹ Department of Energy, Mines, Industry Regulation and Safety (WA). *Western Australian Mineral and Petroleum Statistics Digest 2022-23*. March 2024.

³² TBrief, Williams S. *Australia's data centre investment to exceed \$26bn by 2030*. October 2024.

³³ Data Center Dynamics, Butler G. *Eirgrid warns Irish government "mass exodus" of data centers possible without connection agreements*. August 2024.

Not only would we fail to develop new industries, existing industries would also suffer from a shortage of gas

Failing to secure a stable gas supply won't just hold back future industries — it would devastate those we already rely on, with severe consequences for jobs, investment, and economic stability.

We don't have to speculate — the east coast gas crisis has already shown what happens when supply fails to meet demand. The result? Soaring prices, factory shutdowns, and businesses forced to cut jobs — while households bear the brunt of higher energy costs.

For WA, the stakes are even higher.

WA's economy is more reliant on natural gas than any other state, and with no viable large-scale alternative, any disruption would have far-reaching consequences.

Some production curtailment could begin at a domestic gas price of \$7.93 per GJ, while a median price of \$10.75 per GJ could lead to significant cutbacks or outright closures.³⁴

With average gas contract prices recently at \$7.29 per GJ³⁵, we are already dangerously close to these levels. And as highlighted above, AEMO is now predicting significant shortfalls of gas in WA in coming years.

Several key industries are on the line.

In our survey, we asked WA business how they would respond to similar pricing levels that exist on the east coast of Australia (representing a 50% increase in prices). The results reveal widespread impacts.

The industries most likely to cut jobs:

26% Food services

18% Financial and insurance services

17% Transport

The industries most likely to cut production:

38% Education and training

36% Financial and insurance services

30% Food services

³⁴ AEMO, *2024 Gas Statement of Opportunities*. March 2024.
³⁵ Average WA domestic contract price in Q2, 2024

A gas shortage would deliver a major economic hit to WA — Australian Venture Consultants estimate that if gas prices reach east coast levels (currently around \$12 per GJ), the resources sector just on its own would suffer:

- \$34-42 billion reduction in economic activity.
- 37,000 to 45,000 jobs lost, with lost wages amounting to \$5.1 to \$6.2 billion.
- \$2.9 billion in lost government revenue.

The impacts would be felt well beyond the resources sector. CCIWA Survey data indicates an additional \$930 million reduction in economic activity in the manufacturing and construction sectors, with small businesses particularly hit hard.

A gas shortfall isn't just an energy problem — it's an economic crisis. Without a stable, affordable supply, WA faces business closures, job losses, higher operating costs, and a weaker economy.

Governments have a crucial role to play in securing WA's energy future. Ensuring the successful implementation of Australia's Future Gas Strategy will be key to maintaining a competitive and reliable gas supply for decades to come. Timely and efficient approvals for major projects are essential in providing investment certainty. Likewise, regulatory settings must support energy security while maintaining WA's position as a global leader in resource development.

WA has long benefited from affordable and reliable gas, driving economic growth and industrial success. With the right policy settings, the state can continue to attract investment, create jobs, and strengthen its energy resilience – ensuring a future where businesses, households, and the broader economy can thrive.





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