



**POWERING PAST GAS:
AN ENERGY STRATEGY
THAT WORKS**

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The Climate Council acknowledges the Traditional Owners of the lands on which we live, meet and work. We wish to pay our respects to Elders, past and present, and recognise the continuous connection of Aboriginal and Torres Strait Islander peoples to land, sea and sky. We acknowledge the ongoing leadership of First Nations people here and worldwide in protecting Country, and securing a safe and liveable climate for us all.



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Key findings

1

The world is embracing clean energy, not gas.

- › The International Energy Agency expects global demand for gas will peak before 2030 then go into a structural decline.
- › Gas is a dangerous fossil fuel responsible for climate pollution that is harming Australians and the places we love. At a 2023 United Nations climate summit, nearly 200 countries (including Australia) agreed to accelerate the switch away from fossil fuels this decade and to triple the roll out of renewables by 2030.
- › Eighty percent of Australia's gas exports are shipped to three countries: Japan, South Korea and China. Each of these countries have set targets under the binding international 'Paris Agreement' to cut climate pollution this decade.
- › Japan plans to reduce its gas-powered generation by half by 2030 as renewable energy generation grows. This shift is impacting Japanese demand for imported gas, which fell by 8% in 2023 alone.
- › South Korea plans to double clean energy in its power mix by 2030, while cutting gas generation.
- › In China, solar, wind and storage are booming. China commissioned as much solar in 2023 as the whole world did in 2022, and is now expected to meet its 2030 target of 1,200GW of wind and solar six years ahead of schedule.

2

A surge in new projects means, globally, there will soon be too much gas.

- › The world faces a huge oversupply of gas from 2026, making it more cost efficient for gas corporations to buy gas from cheaper, established sources than invest in new projects - particularly as overall demand for gas declines.
- › Australia's existing gas supplies are shrinking, while new gas projects in Australia have high development costs and struggle to generate returns on capital investment.
- › The Australian Government's own analysis shows that gas produced from a typical gas project in the United States or Qatar is 30-55% cheaper than gas from Australian projects. In a world awash with gas, Australia will no longer be a supplier of choice.
- › Pursuing new gas projects in Australia will add to our climate pollution crisis. More gas is a bad bet against our kids having a safer future and enjoying a thriving, clean economy.

3

Australia can reliably meet our energy needs without new gas.

- › Australia's shift to clean energy is already well under way. Already, one in three Australian households have put solar panels on their rooftops, and 40 percent of our main national energy grid is powered by clean sources.
- › More than 80 percent of the gas produced here is either shipped to Asian markets as liquefied gas, or used to liquefy gas for export. We only use a fraction of what we produce here at home.
- › Gas has a small, shrinking and short-term role to play in Australia's energy mix. By expanding our clean energy capacity this decade, we can limit gas to a small residual 'firming' role in Australia's electricity grid, halve gas use in our homes and businesses and cut gas use by one-third across our industries.
- › We have more than enough gas to meet the needs of Aussie families, businesses and industries during this transition. Gas from Australia's existing projects through to 2035 would be enough to power our domestic energy needs for 64 years.

4

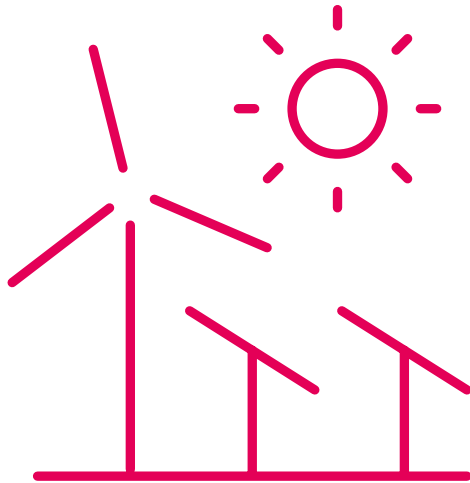
We need new policy thinking, not new gas.

- › To avoid adding to our pollution problems and the upcoming global oversupply of gas, Australia should stop building new gas projects and start delivering new policy approaches to ensure we meet our own residual energy needs first.
- › The Australian Government has taken some steps to reserve Australian gas to meet domestic energy needs, but can go further. A new Energy Security Guarantee can require multinational gas companies to meet Australian energy needs first without ripping up their contracts with international customers.
- › Starting a managed decline of gas exports would see Australia take control of our energy and export future. We can build up clean industries with a bright future over the years ahead, as we sensibly scale down this highly polluting, declining one. That is what a real strategy for gas in Australia looks like.

Introduction:

We need a plan to power Australia past gas

Australia's shift to clean energy is well underway. Already, around 40 percent of the electricity in our main national grid comes from reliable clean energy sources, like solar and wind. More than 3.5 million Aussies have solar on the roof, and households are disconnecting from gas like never before. To slash climate pollution further and faster while delivering a more affordable and resilient energy system, we need to accelerate this momentum.



So let's talk about gas. Gas is a fossil fuel that produces a lot of climate pollution throughout its supply chain, which means it is harming us wherever we extract, process and burn it. In spite of the damaging contribution it has made to global warming, gas has been an important energy source for Australia and our international trading partners. But this is changing rapidly as we move to renewables backed by storage in our grid, electrify our homes and start to swap gas for cleaner alternatives in our industries. Our trading partners are on the same journey, and already using less gas as a result.

For Australia and our international partners to keep thriving, we need to balance energy demand and supply as we shift to a clean energy economy. There are several ways we can do this. The Australian Government's *Future Gas Strategy*, released in May 2024, pays far too little attention to the huge opportunities created by electrification and fuel switching, which will continue to slash demand for gas - both in Australia and internationally. Worse, it also assumes we will dig up, sell and burn huge amounts of gas long into the future, and recommends the development of new gas fields in Australia to provide this supply ([DISR, 2024](#)).

The Government's so-called *Future Gas Strategy* is a recipe for climate and economic chaos. Scientists warn we are at risk of smashing through climate targets and unleashing enormous suffering on billions worldwide. At the same time, the international picture on gas is changing rapidly. Demand is falling among key trading partners - just as it is in Australia - and this trend will speed up as all countries accelerate towards their commitments under the Paris Agreement. With clean energy playing a bigger role to power the global economy, and massive new sources of gas coming online from Qatar and the US in the next few years, the world will soon have too much gas.

Australian gas exports will no longer be the first choice for countries in our region as they shift to clean energy and source gas from lower-cost producers to balance their remaining energy needs. This presents a unique opportunity for Australia. By acting now to power past gas, our domestic energy needs can be met at all times as our energy system evolves, and we can start a managed phase out of our gas exports. Fossil fuel exports are Australia's biggest contribution to climate pollution globally, so phasing these out in a sensible way is an important part of doing our bit to deal with dangerous climate change, as we also cut climate pollution here at home.

This analysis shows how Australia can balance energy supply and demand in the years ahead without opening any new gas projects. Instead of pouring fuel on the fire of dangerous climate change and making a terrible economic bet, we can slash the use of polluting gas by replacing gas power generation with renewables; electrifying our homes and businesses; improving energy efficiency; and replacing industrial uses of gas with clean alternatives. It finds that Australia can slash gas use even further by powering the gas industry itself with renewable electricity. Updated supply rules can also ensure Australia's residual energy needs are met first with our own gas during the switch to a cleaner energy system.

Gas has served Australia in the past, but it's time to get real about moving on. By acknowledging that Australia's gas supply from existing sources will reduce over time, we can fully channel investment, workforce and supply chains towards growing new Australian industries with a bright, long-term future – like green metals, clean manufacturing and zero emission fuels.

Gas has a small and shrinking role to play in our future clean energy mix. This report shows how we can balance our energy needs on the way to a cleaner energy system and take charge of the change that is underway in global energy markets. We can make better choices today which will protect our kids from more climate pollution and step decisively towards the next era of Australian prosperity. A *real* strategy for the future of gas in Australia is one that powers us past this polluting fossil fuel and into a cleaner energy system

Gas has been an important energy source for many countries, but that's changing. As we power past gas, Australia can meet our own energy needs at all times and help our trading partners do the same. If we don't there's serious economic and environmental consequences.

1.

The shift to clean energy is underway and accelerating



Gas is a dangerous fossil fuel

WE HAVE BETTER, SAFER ENERGY OPTIONS

Gas is a dangerous fossil fuel responsible for climate pollution that is harming Australians and the places we love. Today, around a quarter (24%) of climate pollution in Australia comes from the production and use of gas ([DISR 2024](#); [2024a](#)). Gas creates climate pollution when it is released to the atmosphere as methane, or when it is burned, transforming into carbon dioxide and other pollutants.

Gas is extracted from geological formations underground and is mostly made up of methane, the second biggest source of climate pollution after carbon dioxide. Methane is 80 times more potent than carbon dioxide for its global warming potential in the short term, and is responsible for around 30% of the rise in global temperatures since the industrial revolution ([IEA 2023a](#)).

Methane leaks occur along the whole gas supply chain - during extraction, processing and export. This pollution occurs even before gas is burned for energy, which produces additional heat-trapping carbon emissions, in some cases making gas more polluting than coal ([Gordon et al 2023](#)). Methane emissions from Australia's fossil fuel industries are believed to be significantly under-reported, which means the harm could be even greater than we realise ([ACF 2024](#); [IEA 2024](#); [TSI 2024](#)).



Gas and liquefied natural gas (LNG)

Gas extracted in Australia has two destinations: domestic use in Australia, or export as LNG.

Gas is used directly in Australia, to heat our food, water, homes and businesses. It's also used for heating and as a chemical input in industry. Australia produces a lot of gas, but we only use about 20% of it here.

The rest of the gas we produce is exported. To export gas from Australia it must first be converted into LNG, which can then be shipped overseas. This liquefaction process also uses a lot of gas to fuel the process.

In this report we consider gas and LNG together, because all of the gas extracted from Australia's onshore and offshore gas fields can be used domestically, or exported as LNG.

The world is embracing cleaner, lower-cost energy

USE OF GAS IS SET TO FALL GLOBALLY

As the global energy transition accelerates, the world is replacing fossil fuels - including gas - with clean energy. Global demand for gas peaks before 2030 in all three International Energy Agency scenarios for future energy use ([IEA 2023](#)). The only real question is how fast demand for gas will fall based on the steps countries take to accelerate their uptake of clean energy.

As part of shared action to achieve a safer climate future, countries have agreed to move rapidly away from gas and all other fossil fuels. At the United Nations international climate summit (COP28) in 2023, nearly 200 countries agreed to accelerate the transition away from fossil fuels this decade and to triple the roll out of renewables by 2030 ([UNFCCC 2023](#)). Australia was among these nations, so pursuing new gas projects and planning to prolong the life of this fossil fuel goes directly against the aim of our international pledge.

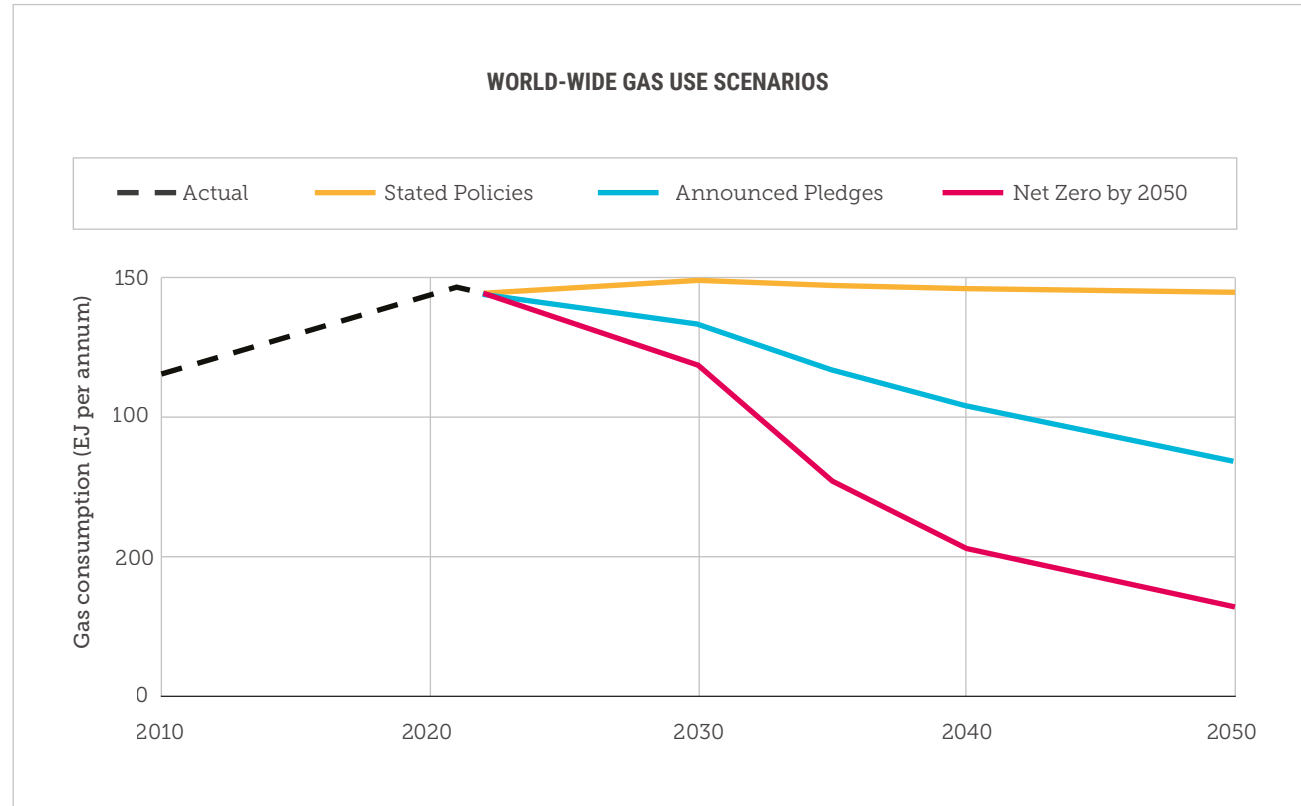


Figure 1: World gas consumption under International Energy Agency (IEA) scenarios.

Clean energy is already powering us forward

PROLONGING GAS IS LIKE BUYING CDS IN A WORLD THAT ALREADY HAS SPOTIFY

There is a lot of hot air about gas out there. Meg O'Neill, the CEO of Australia's largest gas company, Woodside, claims that Australian gas exports "can help Asia to decarbonise by replacing coal" ([ABC 2023](#)). Australian resources minister Madeleine King argues that gas "will be a critical fuel in the decarbonisation of Australia's economy, and for our trading partners' net zero pathways as well" ([King 2023](#)). The *Future Gas Strategy* even claims that: "Gas will be essential to the transition because our energy system needs gas to achieve net zero" ([DISR, 2024](#)).

The reality is that gas can be just as polluting as coal. Burning gas for electricity releases large amounts of carbon dioxide. Methane leaks are also very common in the gas supply chain, and it only takes a very low leakage rate for gas to be on par with coal in terms of climate pollution ([Gordon et al 2023](#)). Ultimately, there are no advantages to using gas over coal in the damage done to our climate: both produce climate pollution which is harmful to our health, well-being and a safe future for our kids.

We have cheaper and cleaner technologies needed to replace both coal and gas in our electricity systems, our homes and many parts of our industrial sector. Australians are embracing clean energy solutions. One in three households have put solar panels on their rooftops, and 40 percent of our main national energy grid is already powered by clean sources - a figure which has doubled in the past four years ([Clean Energy Council 2024](#)).

By continuing the build out of clean energy solutions - like wind and solar backed by pumped hydro and batteries - we can phase out polluting fossil fuels. Switching from coal to gas would be like moving from tapes to CDs when Spotify has already been invented. Gas used to be considered a better energy option, but now we can leapfrog it by moving from coal directly to cheap and reliable clean energy.

The continued roll-out of firmed renewables in our electricity grid and electrification of our homes and businesses will slash a big share of Australia's gas demand. Gas is also used in our industrial sector as a fuel, a heat source and a feedstock for some manufacturing processes. We can already replace many of these uses today, for example by electrifying lower temperature heat applications in manufacturing and some vehicles in mining. Collectively, these changes could cut our gas use by two-thirds by 2035 ([Climate Council, 2024](#)).

A real strategy for the future of gas needs to make reducing demand through electrification and fuel switching the number one priority. Slashing our use of this fossil fuel is the only way to really prevent its climate pollution.

We can leapfrog gas by switching directly from coal to clean energy like solar and wind. Cutting demand for gas, through electrification and fuel switching, should be our highest priority.

Australia's energy mix is changing

OUR USE OF GAS IS FALLING YEAR BY YEAR

Gas use is in decline in Australia, as households and businesses switch to cleaner, cheaper and more efficient types of energy.

Switching from gas to electricity - for example by installing electric heat pumps and induction cooktops - is already cutting gas consumption in Australia. Electrification is accelerating every year, and this has seen projected demand for gas repeatedly revised downward by the Australian Energy Market Operator (Figure 2). With the right policy settings and support in place, millions more Australian households and businesses can meet their energy needs with clean alternatives to gas.

Governments in the Australian Capital Territory and Victoria have already implemented policies ending gas connections to new homes and businesses. Other jurisdictions in Australia will likely follow suit as the costs and risks of gas become more pronounced.

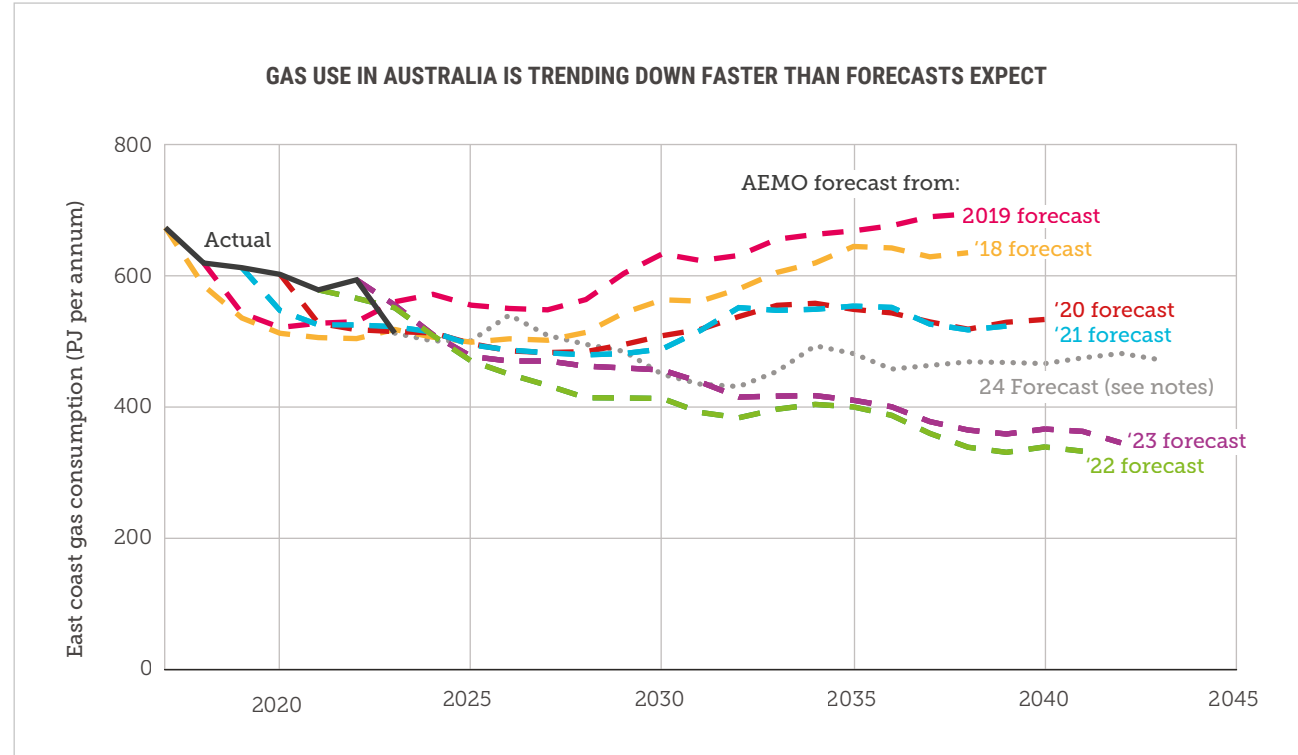


Figure 2: Australian Energy Market Operator forecasts of east coast gas demand (by year). **Source:** Originally published in Wood, T., Reeve, A., and Suckling, E. (2023). Getting off gas: why, how, and who should pay? Grattan Institute. Climate Council added the 2024 scenario and actual usage from AEMO (2024). Data refers to non-LNG gas usage, excludes Western Australia.

Note: In 2024, AEMO revised upward the forecast for gas peaking generation after 2030 reflecting the Draft Integrated System Plan. Climate Council expects the [inclusion of a value of emissions reduction in the Final ISP](#) to put downward pressure on demand substantially in the 2030s.

Japan and South Korea will use less gas

OUR TRADING PARTNERS ARE MEETING THEIR ENERGY NEEDS IN NEW WAYS

Eighty percent of Australia's gas exports are shipped to three countries: Japan, South Korea and China ([OIES 2023](#)). Each of these countries have set targets under the Paris Agreement to cut climate pollution this decade, and have pledged to achieve net zero emissions by mid-century. Changing their energy mix is a key part of each country's plans.

Japan is planning to double the role of renewables in electricity generation by 2030 (rising from 18% of power generation in 2019 to 37% by 2030), and expects gas-fired generation to reduce by up to 50% over the same period ([METI 2021](#); [IEEFA 2024](#)). South Korea plans to double the share of clean energy used in power generation by 2030, while cutting gas generation at the same time ([Energy Tracker Asia 2023](#); [IEEFA 2024a](#)).

Gas demand is already in decline in these markets. In Japan - Australia's largest gas export market - both gas demand and imports fell by 18% in the decade to 2022 ([Energy Institute 2023](#)). In 2023 alone, Japanese demand for gas fell by 8% ([Reuters 2024](#)).

Decreasing costs of solar and wind mean Japan and South Korea could accelerate their shift to clean energy and reduce their dependence on imported gas even further. Recent analysis suggests Japan could achieve 90% clean electricity by 2035 ([Shiraishi et al 2023](#)), while South Korea could achieve 80% ([Park et al 2023](#)). Next year, Japan and South Korea will both set stronger targets to cut climate pollution by 2035.

Should these countries continue using gas for their residual energy needs during the switch to cleaner sources, the forthcoming global supply glut means they will have a range of places to get it from. Asian firms have entered into long-term supply contacts with Australian-based gas exporters like Woodside and Santos. Meeting these contracts is the main reason the Australian Government suggests we need more gas supply as, setting aside contracted export gas, available production from Australia's existing projects to 2035 would be enough to power our domestic needs for 64 years.¹ But in a global market awash with cheap gas supplied by other countries, it is unlikely to make financial sense for these partners to continue sourcing gas from Australia. This point is discussed further in Section 2, below.

Australia's biggest gas customers are embracing clean energy. It's time to plan for a phase out of gas exports.

¹ Based on projected domestic gas use in 2024 (AEMO 2023, 2024) relative to total supply from existing Australian projects, 2024 to 2035 inclusive.

Coal is being replaced by clean energy in China, not gas

GAS PLAYS A TINY ROLE IN CHINA'S ELECTRICITY GRID

There is considerable uncertainty around future demand for gas in China. In the short-term, demand is expected to grow (AME, 2024). However, International Energy Agency modelling, based on China's stated policies, suggests gas demand in China could start declining by 2030, based on a least-cost pathway to meet emissions reduction commitments (IEA 2023; IEEFA 2024a). China also has access to a range of gas sources besides Australian gas, including domestic reserves and piped gas imports.

Coal has long dominated China's electricity grid, with gas playing only a very small role. As China shifts to clean energy, this energy need is being replaced by renewables, not gas (IEA 2023).

Renewables - wind, solar and storage - are booming in China and make up half the country's installed electricity generation capacity. China commissioned as much solar in 2023 as the whole world did in 2022 (IEA 2024a), and is now expected to meet its 2030 target of 1,200GW of wind and solar this year - six years ahead of schedule (IEA 2024a).

At the moment, Australia exports gas to China primarily to fuel industrial processes like metals manufacturing. But, in line with the Albanese Government's vision for Australia to become a "renewable energy superpower" (Albanese 2024a; 2024b), we have a major opportunity to move up the value chain by manufacturing more things here in Australia using our own clean energy, and exporting refined and finished goods instead of raw minerals and planet-heating fossil fuels.

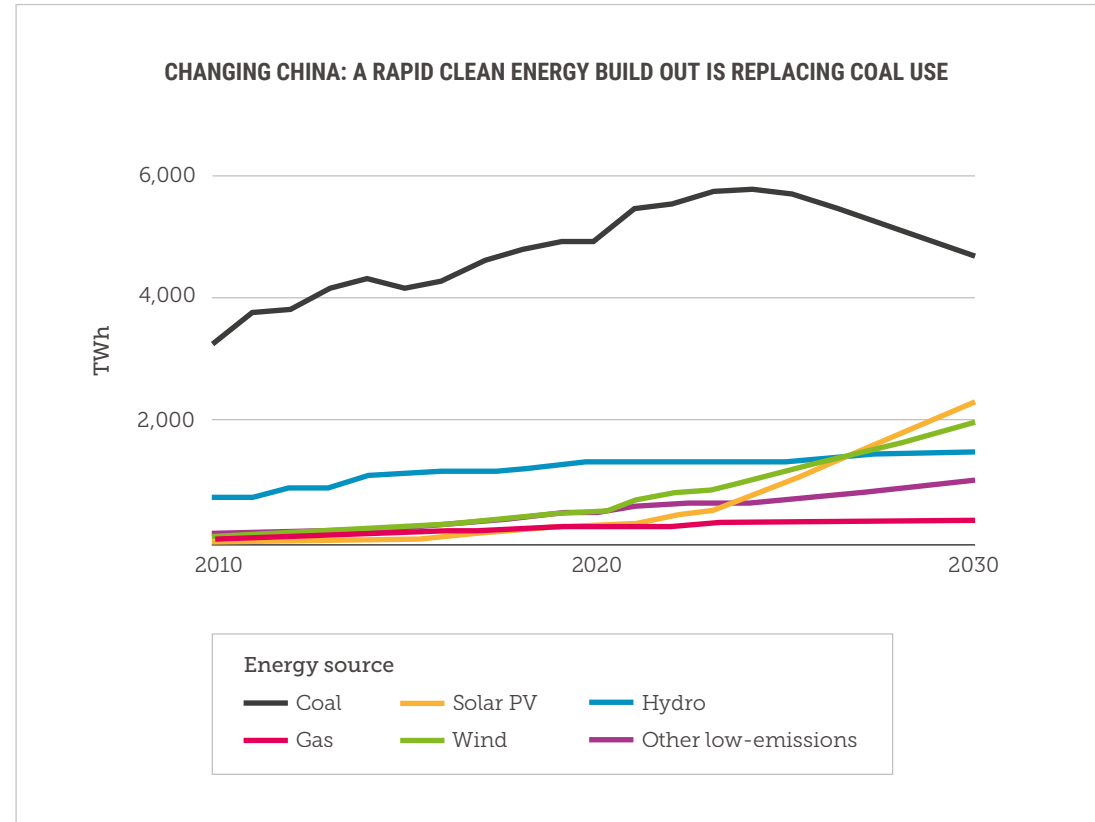


Figure 3: Rapid growth in China's wind, solar and storage capacity is projected to continue through to 2030. Source: IEA (2023).

2.

New supply is set to upend the global gas market



There will soon be too much gas

GLOBAL MARKETS ARE SHIFTING FROM SUPPLY CRUNCH TO GLUT

The international gas supply picture is about to change dramatically. An unprecedented surge in new projects in Qatar and North America means global gas supply will soon outstrip demand. In fact, the world faces a huge oversupply of gas from 2026.

The International Energy Agency expects global gas capacity to almost double by 2030 ([IEA 2023](#)) – but notably, Australian gas expansion plans are not a material factor in this forecast. At the same time, global gas demand is slowing and could peak before the end of the decade ([IEEFA 2024c](#)).

Market oversupply makes it more cost efficient for gas corporations to buy gas from low-cost sources, instead of developing their own new projects. Australia's largest gas producer, Woodside, has already signalled it will buy gas from the US and Mexico to meet supply obligations. By 2029, Woodside's gas purchases from North America will be equivalent to almost half the capacity of gas production rights it holds in Australia ([Nikkei Asia 2024](#)).

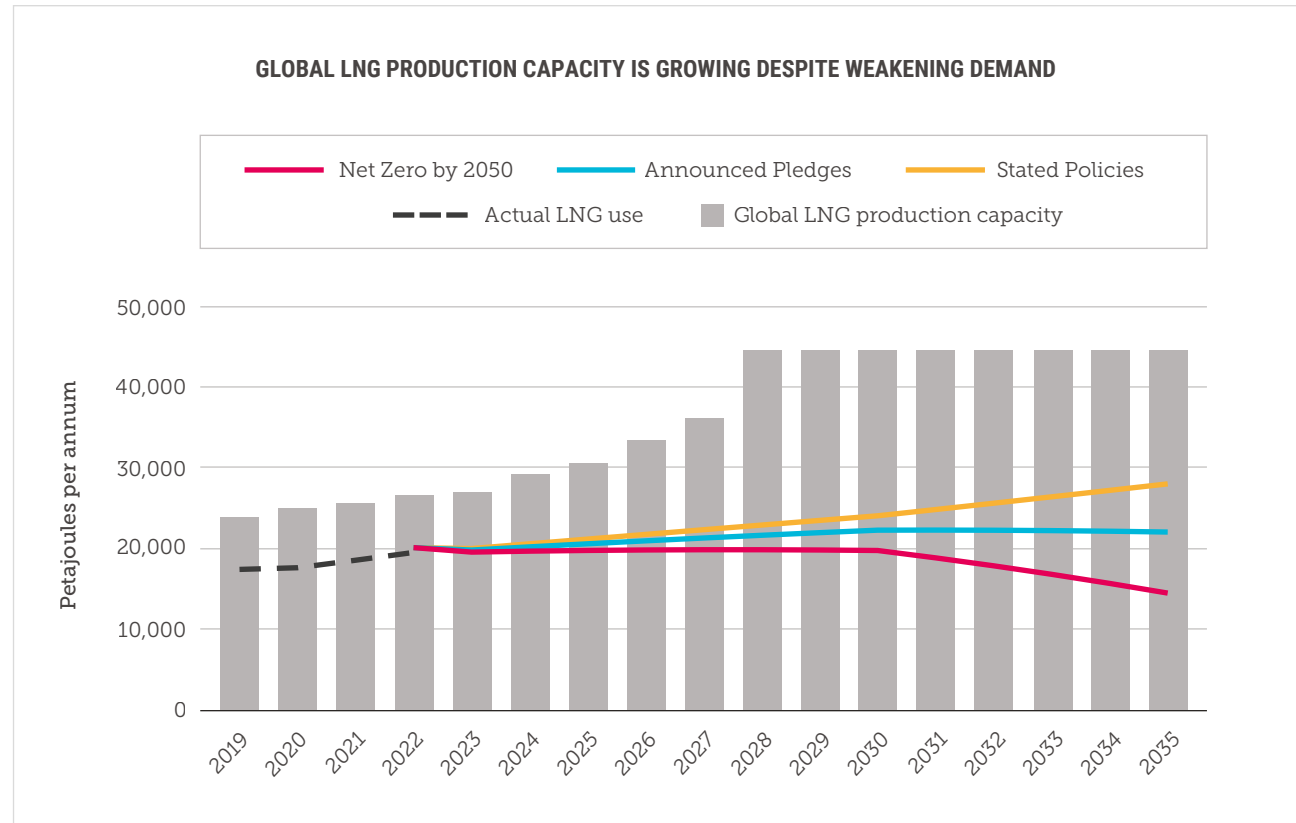


Figure 4: Projected world LNG consumption and production (liquefaction) capacity. **Source:** Projected LNG consumption estimated based on gas demand from IEA's World Energy Outlook ([IEA 2023](#)) and trend in LNG share of total global gas consumption based on the Statistical Review of World Energy ([Energy Institute 2023](#)). LNG liquefaction capacity sourced from 2023 World LNG Report ([International Gas Union 2023](#)).

Note: Liquefaction capacity data is only available to 2028, and is assumed to remain flat thereafter. LNG demand continues to grow in the Stated Policies scenario despite declining gas demand, as the growth in LNG's share of total global gas demand is assumed to continue.

In a world awash with gas, Australia won't be a supplier of choice

NEW GAS SUPPLY DOESN'T STACK UP ECONOMICALLY OR FOR OUR CLIMATE

Australia's existing gas supplies are shrinking. Offshore projects established decades ago in Victoria, Western Australia and the Northern Territory are coming towards their end of life. If no new projects start up, Australia's available gas supplies will continue to steadily decline; a process which has already begun as investor confidence in gas has dropped.

The Australian Government's *Future Gas Strategy* cites this decline as the reason for pursuing new sources of gas supply in the coming years. To continue supplying this fossil fuel, new gas fields would need to be developed to 'backfill' production when current reserves are depleted. Australian gas projects were typically delivered late and over budget, resulting in them struggling to generate returns on the multi-billion dollar capital investment required ([ACCR 2023](#)). Projects in remote locations with higher operating costs and higher emissions are less competitive for meeting demand. The *Future Gas Strategy* acknowledges this, stating: "As gas reserves deplete and fields approach their economic end of life, sustained production will require additional investment. Eventually, production must shift to more expensive sources of supply" ([DISR, 2024](#)).

Santos' proposed Barossa gas project is a good example of this problem. The project faces a range of engineering challenges to extract and transport gas from a field 300 kilometres away from the company's Darwin processing facility ([Santos, 2024](#)). The field contains some of the most carbon-intensive gas in the world, at up to 18 percent CO₂ ([Santos, 2023](#)). Under Australia's reformed Safeguard Mechanism, new gas projects like Barossa must achieve net zero emissions from day one of operations and all existing gas facilities must cut their climate pollution by almost 5 percent annually ([Bowen, 2023](#)). These are positive steps to ensure gas companies no longer get a free ride to pollute and cause more climate harm. Achieving net zero reservoir emissions for the Barossa gas field could increase project costs by almost a billion dollars - around 20% of total project costs ([TAI 2023](#)).

With this combination of challenges, new gas projects in Australia are very unlikely to be able to produce gas at a competitive price with projects already nearing completion in other markets - particularly those with weaker environmental, work health and safety, and other regulations. Importantly too, cheaper gas from places like Qatar and the US will be more competitive than Australian gas in the global marketplace. Shipping times from the US West Coast and Qatar to our major trading partners are only slightly longer compared to exports from Australia ([DISR 2024a](#)), especially relative to the large difference in production costs. As demonstrated in figure 5, the cost of producing gas in Australia is expected to be higher than its sale price.

Besides being a poor economic bet, pursuing new gas projects in Australia will also add to our climate pollution crisis. Instead of producing uncompetitive and expensive gas, the changing global market can be Australia's moment to start a sensible phase out of gas as we scale up clean alternatives. More gas is a bad bet against a safer future and a thriving clean economy.

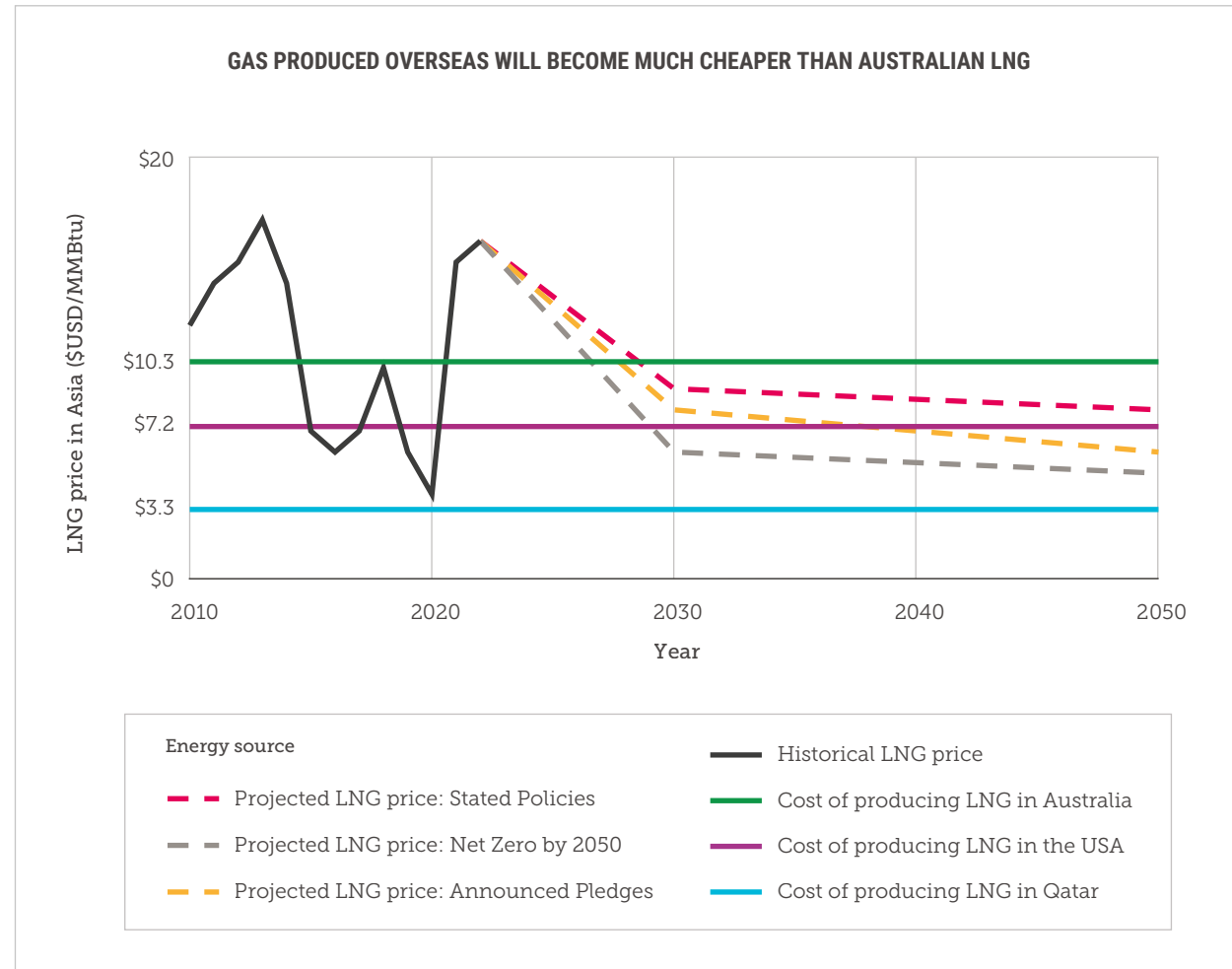


Figure 5: Projected LNG prices are much lower than the cost of producing LNG in Australia. **Source:** [DISR \(2024a\)](#), *Future Gas Strategy Analytical Report*, Figure 1.13 and 4.15.

The Australian Government's own analytical report accompanying the release of the *Future Gas Strategy* acknowledges a hard truth: new Australian gas will be much more expensive than gas produced by overseas competitors.

3.

We can meet our
energy needs
without new gas



A different energy mix will balance demand and supply

AUSTRALIA CAN RELIABLY MEET OUR ENERGY NEEDS WHILE ACCELERATING TOWARDS A CLEAN ENERGY FUTURE

Australia's shift to clean energy is already well underway. We should do everything in our power to accelerate this progress because making rapid cuts to climate pollution gives us the best chance for success in a global clean economy and a safer future for our kids.

To help achieve this, we can:

- › Rapidly switch to clean electricity and zero emission fuels wherever possible – including by electrifying parts of the gas industry itself.
- › Cease any new or expanded gas extraction projects - both for domestic and export purposes - and start a sensible phase out of gas over time.
- › Recognise we will soon operate in a global market where gas is oversupplied and implement a new approach to gas regulation, to make sure Australian gas is available for our residual domestic energy needs first.

Figure 6 highlights an important point about Australia's gas market: most of the gas we produce here is sold overseas for export. Around 70 percent of total gas production is liquefied and shipped overseas (DCCEEW 2023a). The gas industry itself is Australia's single biggest domestic user of gas, with the liquefaction process for exports sucking up almost another 10 percent of domestic gas supply.

The coming decade will see countries around the world speed up the pace of their transition to clean energy. While this takes place, Australia's challenge and opportunity is to balance our own energy supply and demand needs. This section steps out how we can do this in a way that also responds to the changing energy needs of our international export partners.

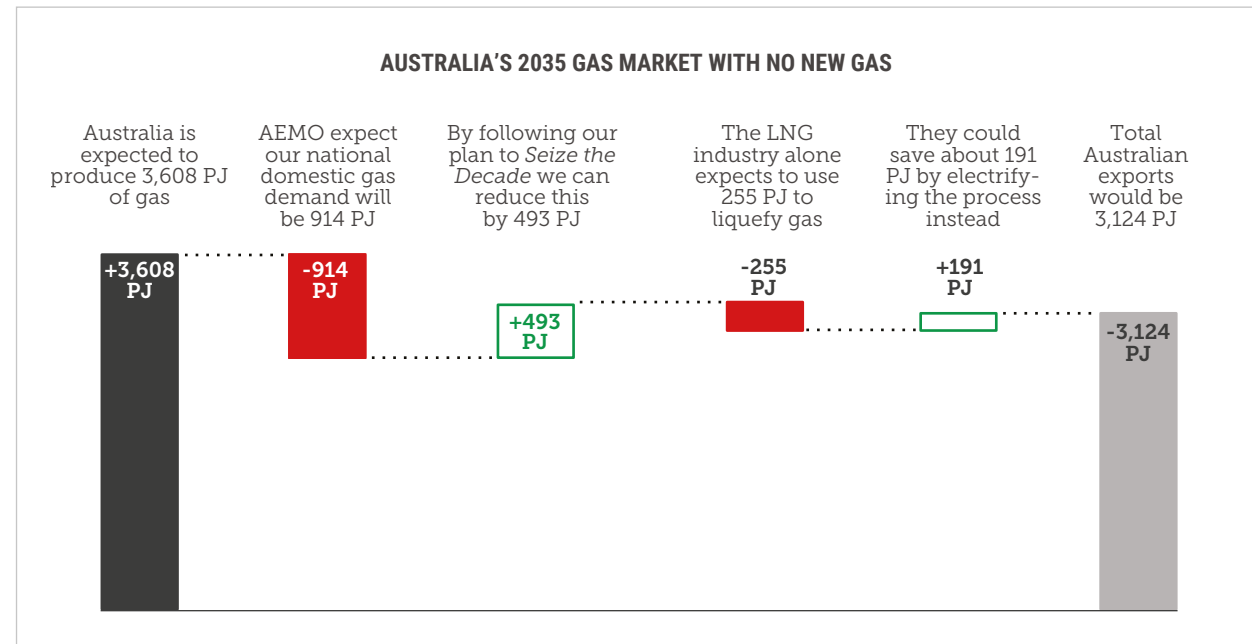


Figure 6: Australia's 2035 gas market if no new gas projects or expansions are developed.
Source: Climate Council estimates, based on AME (2024) and AEMO (2023 & 2024)

Meeting our domestic energy needs more cleanly

HOUSEHOLDS AND OUR ELECTRICITY GRID CAN LEAD THE WAY

Australia is in the middle of a historic shift away from fossil fuels – including gas – to cleaner, more affordable options. This shift is happening the world over.

Climate Council has developed an economy-wide plan to slash climate pollution further and faster this decade. Under our plan to *Seize the Decade*, Australia can shrink the use of polluting gas by 66 percent by 2035.

We can do this by replacing gas power generation with renewables; electrifying our homes and businesses; improving energy efficiency and replacing industrial uses of gas with clean energy sources.

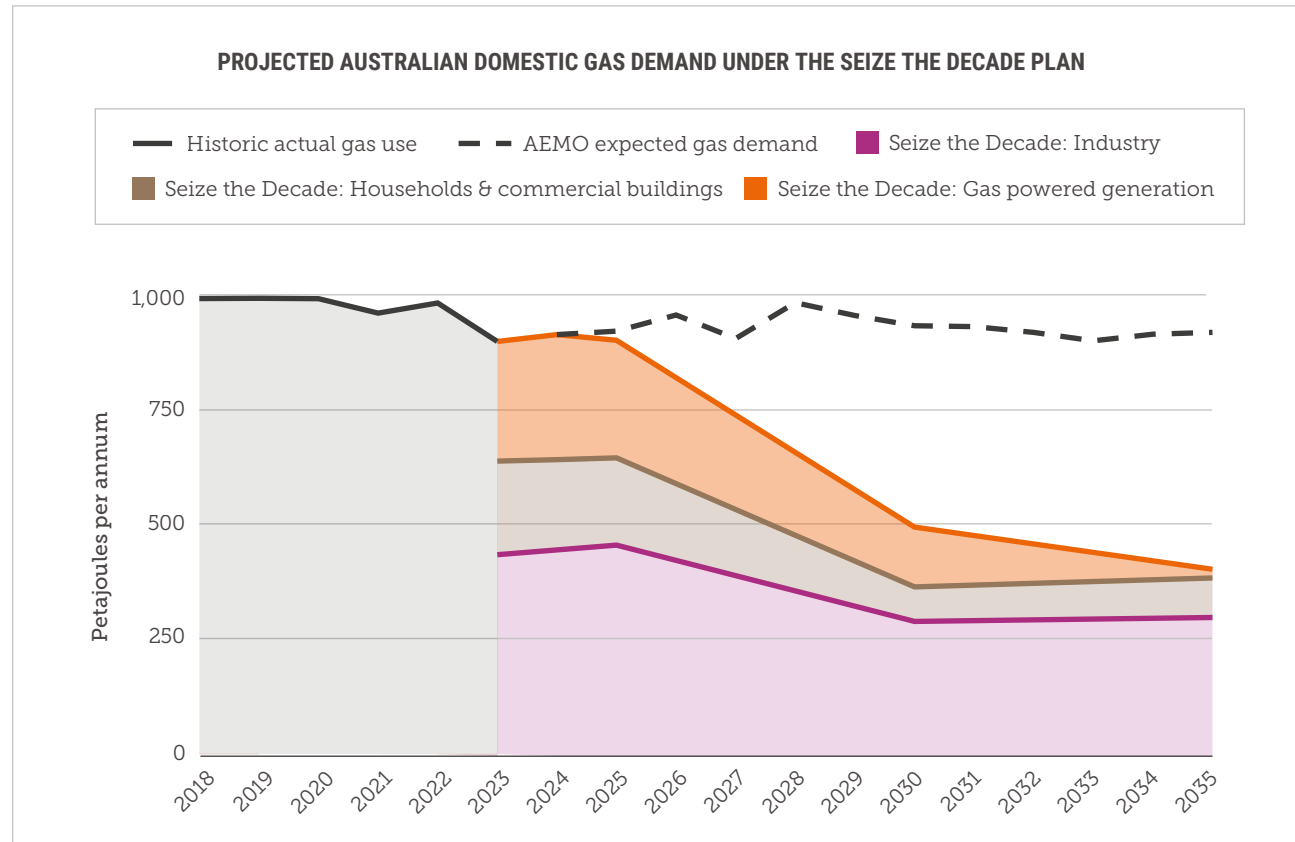


Figure 7: Projected Australian domestic gas demand under the *Seize the Decade* plan. **Source:** Climate Council Analysis, based on *Seize the Decade* modelling ([Climate Council 2024](#)) and WA & East Coast GSOOs ([AEMO 2023](#); [AEMO 2024](#))

Gas has a small and short-term role in Australia's electricity grid

RENEWABLE ELECTRICITY SUPPORTED BY STORAGE WILL POWER OUR CLEAN ENERGY FUTURE

Australia is shifting to cleaner and cheaper sources of electricity generated by wind and solar and backed up by storage. By expanding renewable energy capacity we can meet our own energy needs and lay the foundation for new clean export industries. There are great opportunities in household, commercial and industrial rooftop solar, and onshore wind to deliver more clean energy this decade.

As we switch to renewable energy, gas will play a very small residual 'firming' role in Australia's electricity grid - switching on for short periods of time on rare occasions when electricity demand exceeds supply from renewables. Steady, reliable power at all hours of the day and night will be provided through a mix of renewables, backed up by pumped hydro and batteries of all sizes - including in our homes, electric vehicles, and neighbourhoods.

Under the Climate Council's *Seize the Decade* plan, Australia already has sufficient gas generating capacity to meet occasional peaks in demand. We do not need to build any further gas electricity generation capacity unless it can run on 100% renewable hydrogen. In fact, we can start reducing gas capacity in preparation for its full phase out of our electricity system by 2035 ([Climate Council 2024](#)).

Australia is already using more clean energy in our homes, businesses and industry than ever before. A mix of clean energy backed by batteries and pumped hydro will power our future.

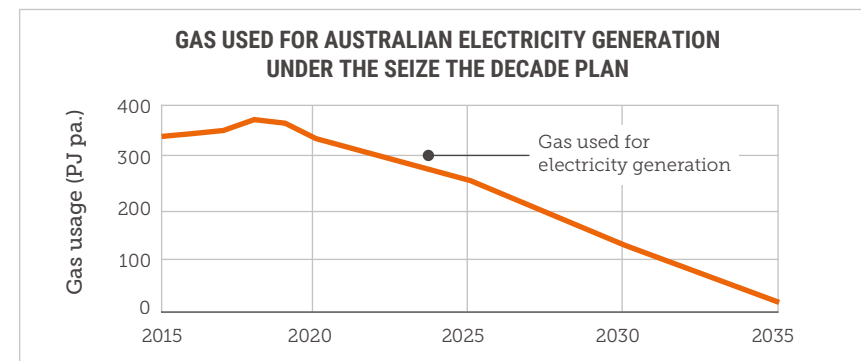
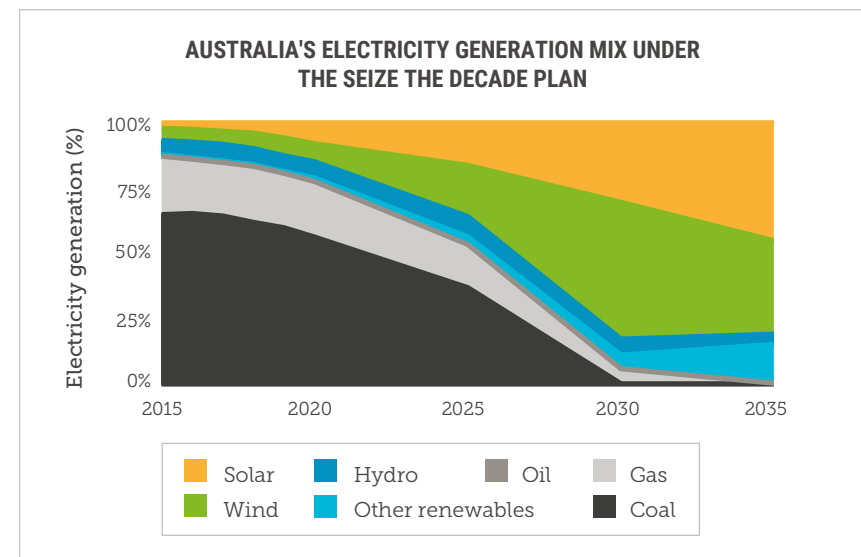


Figure 8 (top): Australia's electricity generation mix over time.

Figure 9 (bottom): Gas use for Australian electricity generation over time.

Source: *Seize the Decade* modelling, Climate Council ([2024](#))

We can massively reduce gas use in our homes and businesses

HALVING GAS USE THIS DECADE WILL SAVE US MONEY AND PROTECT OUR HEALTH

To reduce power bills, create healthier homes and slash climate pollution, we can completely phase out gas from our homes and commercial buildings.

We can electrify Australian homes and workplaces, starting right now, by replacing gas appliances with more efficient electric ones. The technologies needed are proven and widely available, like induction cooktops, reverse cycle air conditioning and electric heat pumps.

We must ensure all new homes built are all-electric, and coordinate an orderly phase out of gas from existing buildings in favour of electrification. We can also cut gas use by improving the thermal efficiency of our buildings, using relatively low-cost upgrades like insulation, window glazing and gap sealing ([Climate Council 2024](#)).

All-electric homes are cheaper to run. Switching from gas to electric appliances and making energy efficiency upgrades (like installing insulation) can save Australian households \$1,119 to \$2,872 per year, depending on location ([Climate Council 2023](#)).

All-electric homes are also healthier. Gas cooktops leak toxins that increase risks of childhood asthma. In fact, cooking with gas is estimated to be responsible for up to 12% of the burden of childhood asthma in Australia ([Climate Council 2021](#)).

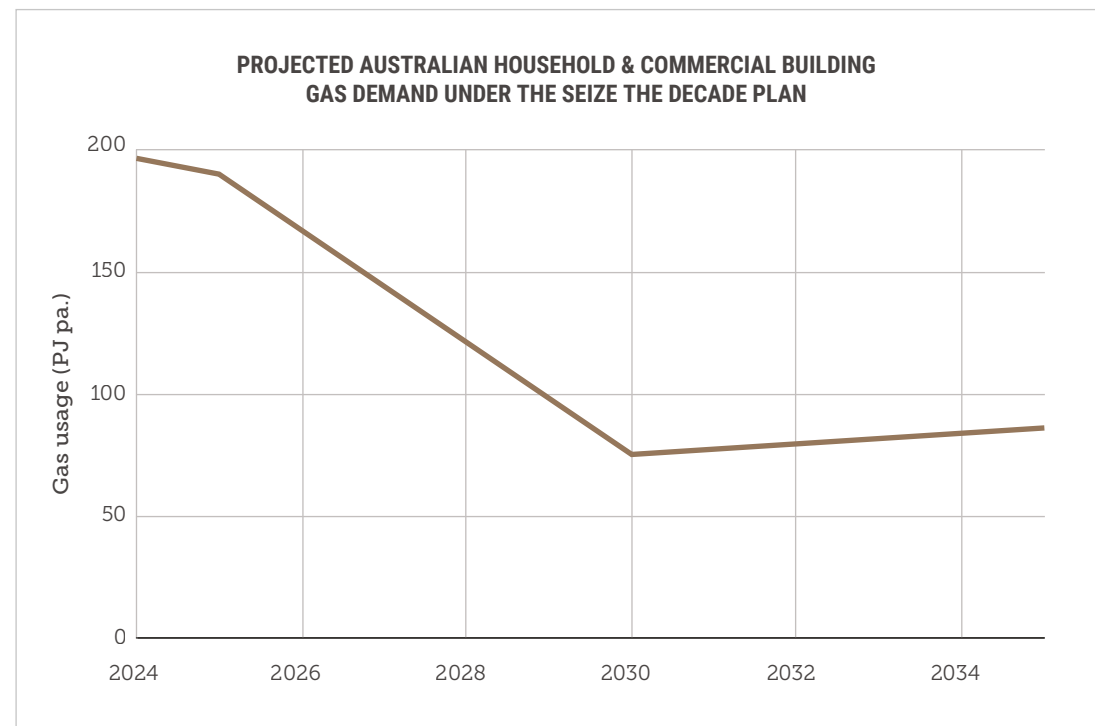


Figure 10: Projected Australian household & commercial building gas demand. Source: *Seize the Decade* modelling, Climate Council ([2024](#))

Australian industry can benefit from using cleaner fuels today

INDUSTRY CAN CUT GAS USE BY ONE-THIRD BY 2030

Australia's world-beating clean energy resources are transforming the sources of energy we use in our homes and businesses, and we can repower our industries using renewable energy too.

Renewable electricity can be used to replace gas in lower and medium temperature processes, such as raising steam in the food and beverage sector. Where higher temperatures and direct feedstocks are needed, we can replace gas with other cleaner fuels such as biomethane and, for early adopters, renewable hydrogen.

Using energy better can also cut down how much gas manufacturers use. By 2030 we can improve energy efficiency by approximately 5% for iron, steel and chemical manufacturers, and 25% for cement manufacturing ([Climate Council 2024](#)).

Industrial gas use can also be reduced by recycling scrap metals, which could provide 35% of steel and 40% of aluminium production in Australia by 2030. Today, most metal collected for recycling in Australia is exported ([Blue Environment 2022](#)). Recycling metals onshore could cut the use of gas and create more new jobs.

Renewable hydrogen is also expected to play a significant role decarbonising Australian industry ([Climate Council 2023b](#)). It can, for example, replace gas in steelmaking and alumina refining. Plans are underway to use renewable hydrogen at the Whyalla Steelworks in South Australia, with the first production of 'green steel' expected before 2030 ([GFG 2023](#)). Rio Tinto also plans to replace gas with renewable hydrogen at its alumina refinery in Gladstone, Queensland ([Rio Tinto 2023](#)).

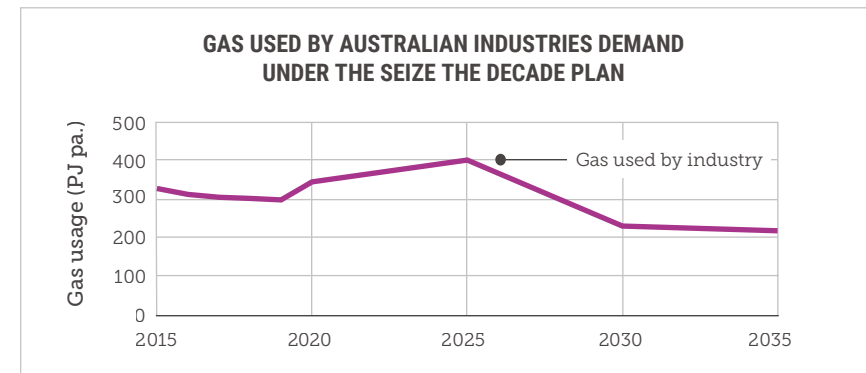
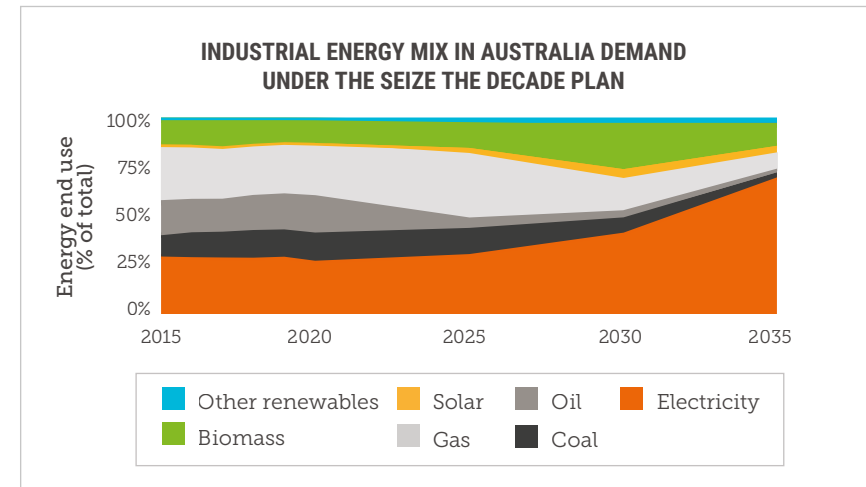


Figure 11 (top): Industrial energy mix in Australia over time.

Figure 12 (bottom): Gas used by Australian industries over time. Source: *Seize the Decade* modelling, Climate Council ([2024](#))

The resources sector can consume and produce less gas

FIXING METHANE LEAKS AND FLARING CAN CUT CLIMATE POLLUTION NOW

As gas demand falls at home and abroad, Australia can plan for a phase out of gas production, and ultimately a staged decommissioning of gas infrastructure. While the industry is being phased down, there are practical and affordable ways to cut climate-damaging methane leaks across the gas supply chain.

Gas companies can take practical steps to avoid fugitive leaks by reducing methane flaring, doing maintenance, and replacing leaking equipment and pipelines. Money spent fixing leaks can be recouped from gas that is captured and sold.

The clean energy transition offers new opportunities for Australia's resources sector to grow alternative exports. Key opportunities include: processing critical minerals; manufacturing green metals and green iron; renewable hydrogen; and, renewable ammonia ([Garnaut 2024](#); [Climate Council 2023b](#)).

Australia's non-fossil fuel mining sector can electrify mine sites and install on-site renewable electricity generation and storage to replace gas.

🔍 CASE STUDY: POWERING IRON ORE MINING WITH RENEWABLES

Mining giant Rio Tinto has built its first solar plant, to power a new iron ore mine in Western Australia's Pilbara region. Energy from this solar plant, together with battery storage at the nearby town of Tom Price, is replacing gas-fired electricity ([Rio Tinto 2023a](#)).

Rio Tinto currently operates four gas-fired power stations in the Pilbara, but plans to install two 100MW solar facilities and 200MWh of battery storage by 2026, on the way to installing 1 GW of renewables in the region by 2030. This will slash gas use across its entire Pilbara operations ([Rio Tinto 2023b](#)).



Image: Copyright © 2023 Rio Tinto.

Re-powering gas terminals with clean energy will cut gas use

ELECTRIFYING LNG PROCESSING CAN CUT MORE GAS THAN GETS USED IN NSW EACH YEAR

Liquefying gas for export requires a lot of energy. In fact, Australia's gas export terminals use more gas than all of our power stations around the country, and almost three times as much gas as Australian households ([Climate Council 2023a](#)).

Within processing plants, renewable energy can be used to retrofit helper motors and electrify compression turbines that currently run on gas. Doing so across Australia's gas industry could save the equivalent of over 10 percent of domestic gas demand ([ERI 2021](#)).

It is also possible to electrify train turbines that are used to cool gas and convert it to liquid form ([Climateworks 2023](#)). This would increase energy security even further, making more gas available to supply the domestic market. These fully electric e-drive liquefaction systems are already commercially available, with a 100% electric gas drive operating in the US ([GE Vernova 2022](#)).

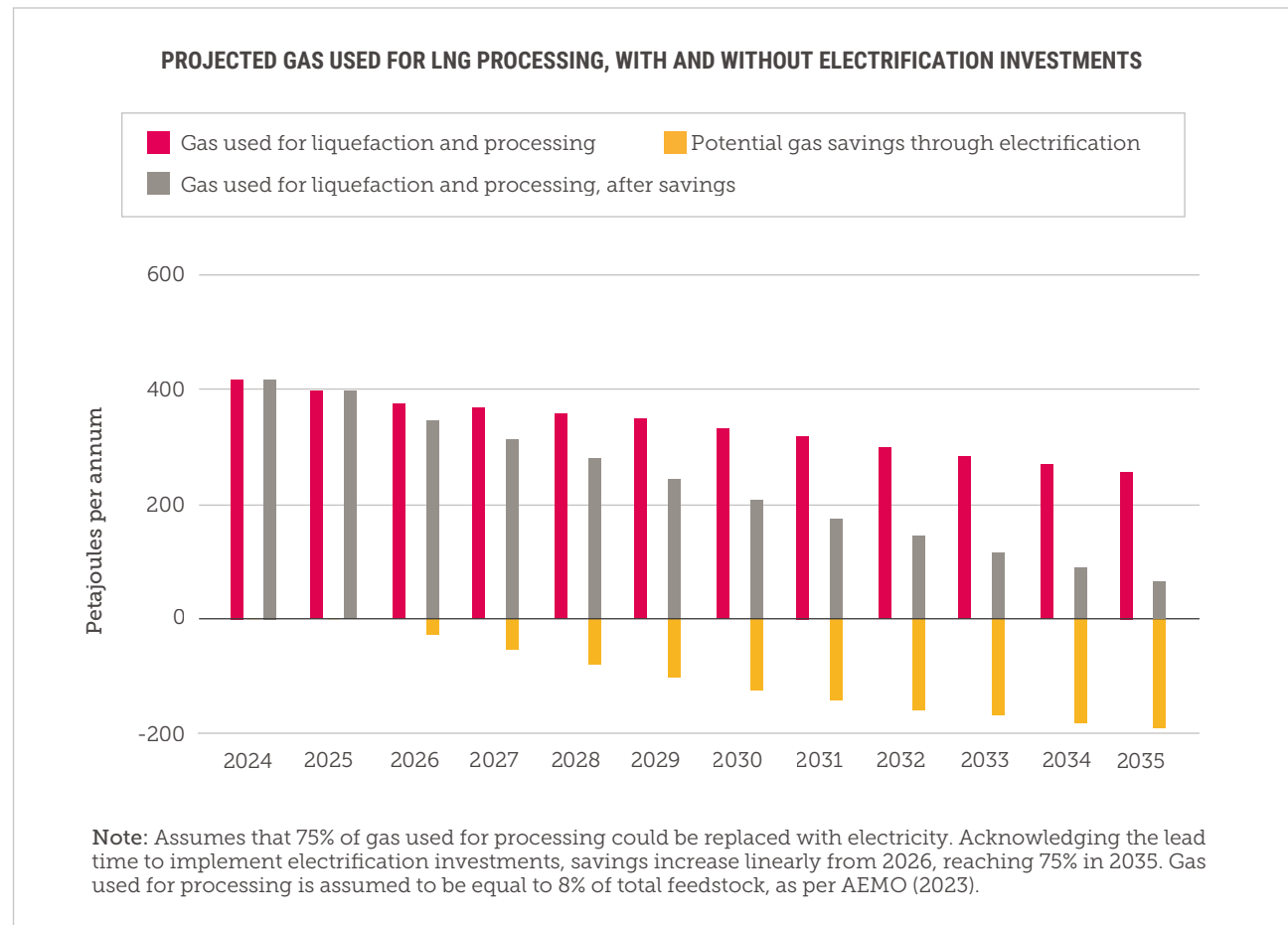


Figure 13: Projected gas used for LNG processing, with and without electrification investments.
Source: Climate Council estimates.

4.

New solutions are
needed for changing
gas markets



We need new policy thinking, not new gas

MEET DOMESTIC NEEDS WITH AUSTRALIAN GAS FIRST

Only 20 percent of the gas produced in Australia is used in our grid, buildings and industry. Around 80 percent of the gas produced here is either shipped to Asian markets as liquefied gas, or used to liquefy gas for export ([ABS 2023](#)).

The huge multinational gas corporations that operate in Australia have little incentive to make sure we have enough energy to meet our needs. While the gas industry constantly calls for more projects to meet domestic supply, they continue shipping Australian gas offshore.

It's clear we need to stop building new gas projects, to avoid adding to our pollution problems and the upcoming global glut of gas. As we start a managed phase out of gas in line with declining supply from existing projects, we will also need new policy approaches to ensure Australia's dwindling gas needs are met with our own gas first.

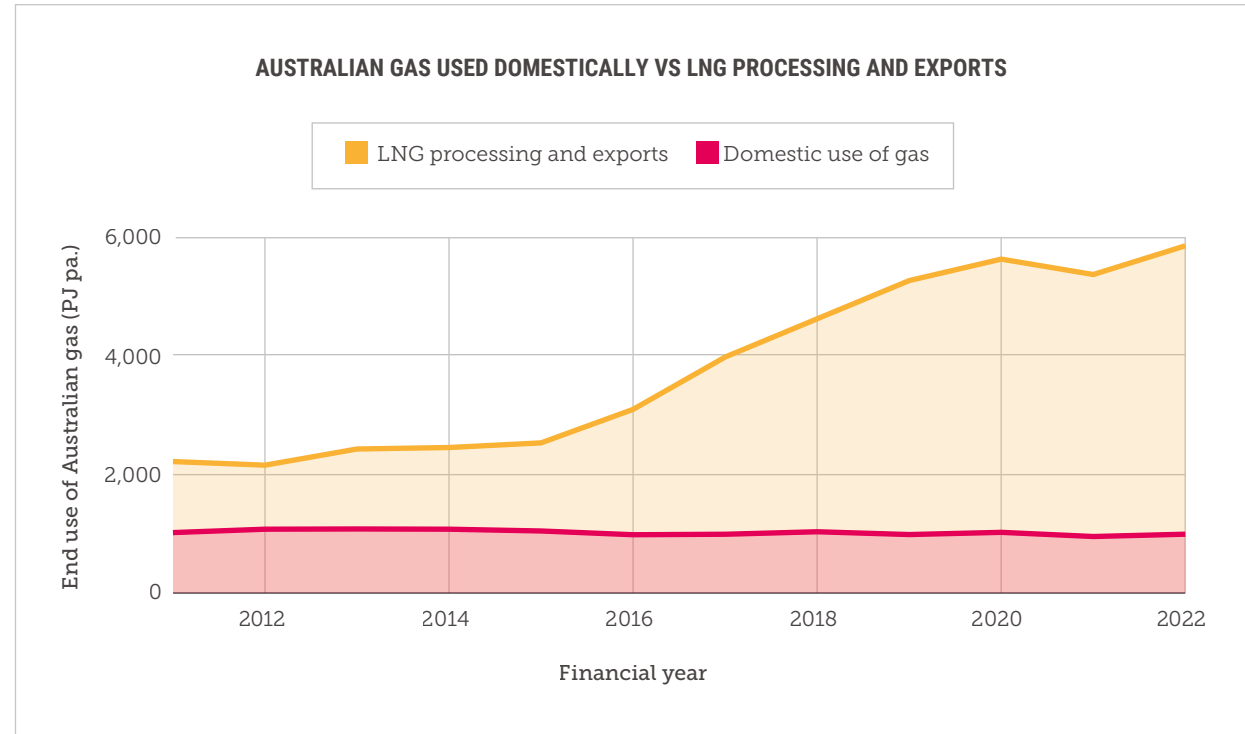


Figure 14: Australian gas used domestically relative to LNG processing and exports. Source: Energy Account, Australia; Table 3. Australian physical supply and use of energy. ABS (2023)

More gas projects means more climate pollution and more economic uncertainty. Instead of feeding a market that will soon have a gas glut, Australia can carefully phase gas out while making sure our domestic needs are met.

The Australian Government has taken some steps to reserve Australian gas to meet domestic energy needs. The government has introduced a Gas Code of Conduct, which incentivises the supply of gas to the east coast market instead of exporting it ([DCCEEW 2023b](#)). Under the Code, the government has so far secured enforceable agreements to supply more than 550 PJ of gas to the east coast market before 2033 ([Bowen 2024](#)).

The Australian Domestic Gas Security Mechanism has also been strengthened to enable export controls if it looks like insufficient gas will be supplied to meet seasonal peak demand ([DISR 2023](#)). The government has negotiated a Heads of Agreement with east coast gas exporters to shore up supply for domestic needs – including flexibility to reallocate international supply for the domestic market ([DISR 2022](#)). These policies provide a foundation on which to build a stronger reservation policy to ensure Australia’s residual energy needs are reliably met in the coming years while we progressively phase out gas.

The Australian Government can establish a new Energy Security Guarantee to ensure Australia’s dwindling gas needs are met with our own gas first.

Export contracts are a commercial arrangement between gas companies and their international corporations; not with the Australian Government. These multinational companies are major players in the global energy market, and so have access to gas from around the world. With a global gas supply glut on the way, they will be able to meet their commitments to customers from a range of locations. What’s more, this gas will very likely be cheaper than that sourced from new projects developed now in Australia, making it a smarter financial bet to buy it overseas. A requirement to meet Australian energy needs first would not require these companies to rip up their contracts with customers, but simply to meet them in different ways.

Key principles of a new Energy Security Guarantee:

- 1 No uncontracted gas may be sold on the international spot market unless all anticipated Australian demand for a given period has been met.
- 2 Gas companies which are unable to meet contracted export supply volumes from their own existing production may not purchase this from other Australian sources.
- 3 Gas companies may not enter into any binding future supply contracts which would depend on the approval and development of new gas resources to fill.
- 4 From 2026, when a global oversupply of LNG is forecast, gas companies must fully meet Australian gas demand before fulfilling export contracts, with any gap in export volumes being purchased from other sources in the global market.



Now is the best time to start a phase-out of polluting gas exports

WE CAN TAKE CONTROL OF OUR ENERGY AND EXPORT FUTURE

Market forecasts show gas companies are projecting levels of supply they can only meet if new projects go ahead (AME, 2024). But Australia doesn't need more gas, and with the world on track for a global oversupply, we shouldn't build these uncompetitive and polluting projects.

A phase out of gas exports would see Australia start to withdraw from the gas export market in a managed way over time. Ending new gas projects would be consistent with the International Energy Agency's assessment that no new gas supply is needed globally to provide the vastly reduced amounts we'll use in a net zero world (IEA, 2021; IEA 2023b). Slashing the use of gas is an essential step for holding warming as close as possible to 1.5 degrees Celsius.

Gas companies that have promised gas to their overseas customers will still source a lot of this from Australia over the coming decade, even as we meet our needs first in a context of shrinking supply. Figure 15 shows that in 2035, available export volumes after Australian needs are met would still be about two-thirds of the amount exported today. This highlights the long tail of climate pollution that will come from this industry, which is why we have to start phasing it out now.

Figure 15 shows that there is projected to be more than enough gas available globally to meet remaining expected export volumes in every year from 2026 onwards. As the *Future Gas Strategy* notes, most of the current export contracts for Australian gas expire in or around 2035. After this, export demand is considerably more uncertain because of both accelerating replacement of gas with renewable electricity and hydrogen, and the expected lack of competitiveness of Australian gas (as noted in Section 2).

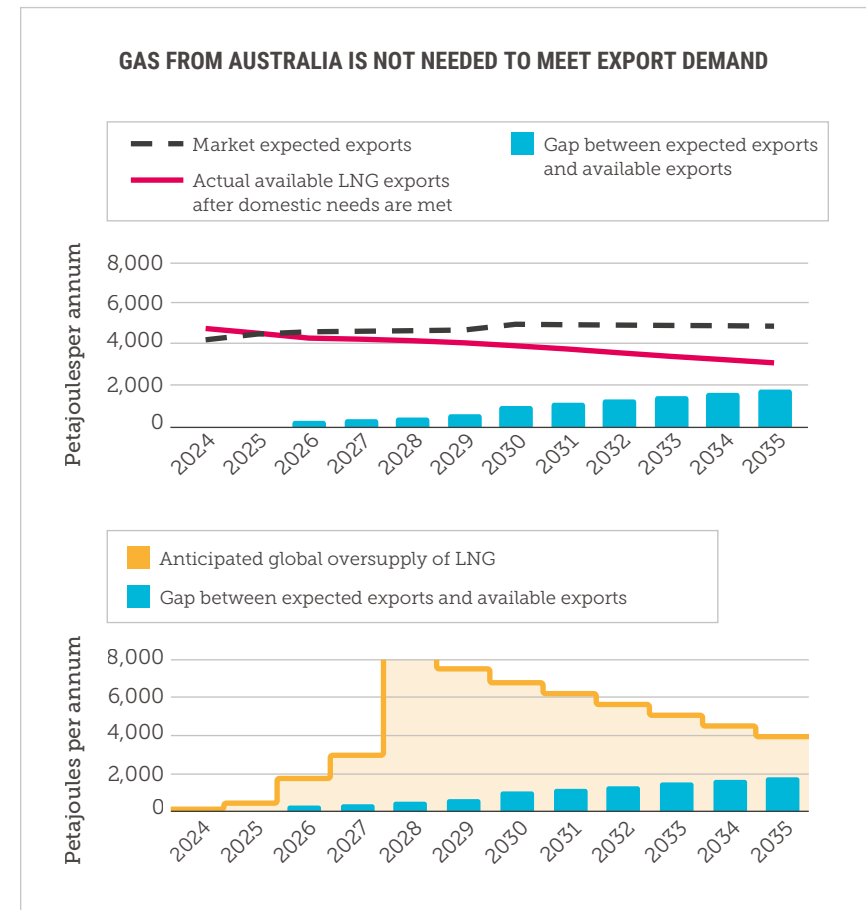


Figure 15: Global oversupply of LNG is far greater than the reduction in Australian exports if no new or expanded gas projects are developed and domestic gas needs are met. Source: Climate Council estimates, see page 29 for further details.

How we can work with trade partners for a clean energy future made in Australia

PROMOTE INVESTMENT IN THE CLEAN ENERGY SOLUTIONS OUR REGION NEEDS

Australia will need to work with our trading partners to develop a shared vision for our region's clean energy future, and to manage the rapid shift away from polluting fossil fuels. This will require a new focus on economic diplomacy in the Asia-Pacific ([Hughes 2020](#); [Armstrong 2024](#)).

As our trading partners shift to clean energy economies they will continue to need Australian resources, including critical minerals, green metals, and renewable hydrogen. Countries in our region will also be looking to develop more diversified and resilient clean energy supply chains ([Bowen 2023a](#)). This represents a once-in-a-generation opportunity for Australia to grow new export industries for tomorrow's economy, replacing the fossil fuels we sell today.

The Albanese Government regularly promotes a vision for Australia to become a "renewable energy superpower" ([Albanese and Bowen 2024](#)). The 2024 Commonwealth Budget has made landmark new investments in critical minerals, green metals and advanced manufacturing as part of the government's Future Made in Australia agenda ([The Treasury 2024](#)). This is the future-focused export opportunity we should be grabbing with both hands now.

The Australian Government can establish new Clean Energy Partnerships with trading partners in our region, including Japan, China and South Korea. Such partnerships would reinforce Australia's reputation as a reliable trading partner, enable cooperation on cutting climate pollution, grow markets for clean energy exports, and promote investment in Australian resources and industry. Clean Energy Partnerships would also enable cooperation to manage the phase out of polluting fossil fuels.

This approach would ensure that our domestic and foreign policy agendas are pulling in the same direction. Developing new gas projects does the opposite, as this works against Australia claiming our place in the growing global market for zero emission goods. New gas projects divert investment, workforce and supply chain capacity away from the future-focused new industries we could be building now. With chronic labour shortages in key sectors of the economy already, new gas projects will only undermine the workforce we need for tomorrow's clean industries ([Kohler 2024](#)).

With a Future Made in Australia based on clean energy and manufacturing, we can create good long-term jobs for the 20,000 Australians employed in the gas industry today and for hundreds of thousands of others right around the country too.

To do this, we need to go all-in by using our available investment, workforce and supply chain resources to develop these industries now. Starting a managed decline of gas exports would see Australia take control of our energy and export future, where we build up clean industries with a bright future over the years ahead, as we sensibly scale down this highly polluting, declining one. That is what a real strategy for the future of gas in Australia looks like.

Australia has world-beating resources in renewable energy, together with deep industry and manufacturing know-how. This can be our moment to shine so our country keeps prospering for generations to come.



Conclusion

As Australia accelerates towards a clean economy without climate pollution, we will need to carefully balance energy demand and supply to ensure all our needs are met. Everyone wants to see the lights stay on and Aussie industries thriving. We can do this by prioritising the rollout of cleaner and more affordable forms of energy across our economy and in our exports, while starting the necessary phase out of polluting gas.

With the impacts of global heating hitting home harder and more often, we need to face the fact that gas must go. We can't shut it off overnight, but neither can we pretend it will be at the centre of our energy system and export trade far into the future. The Australian Government's *Future Gas Strategy* is a missed opportunity to map out a responsible pathway for slashing how much gas we use here at home and progressively phasing it out of our exports. This report fills the policy vacuum with a clear picture of how we can reduce gas usage in our homes, businesses and industry; stop adding new gas supply; and ensure Australia's energy needs are consistently met through the years ahead.

This is the gas strategy Australia needs now, so we can keep our kids safe from dangerous climate change and get on with building the clean energy industries that will power the next era of Australian prosperity.



Methodology for derived estimates

Expected supply of gas without new or expanded projects: Supply of gas is based on total gas produced from Australian fields which are already in production. It does not include production from any committed, probable or potential new or expanded fields. Field-level supply data was provided by AME (2024).

Market expected exports: Market expected exports of LNG is based on AME's best estimate of LNG exports, including committed and existing gas supply and LNG liquefaction projects (AME 2024). It can be considered the most likely scenario for Australia's LNG export volumes, without changes to policy or stated commitments by LNG producers or gas extraction companies.

Projected LNG consumption: Future global LNG consumption was estimated based on IEA (2023) forecasts of total global gas demand, adjusted for the proportion of total gas use which is expected to be LNG. This proportion was projected linearly, based on continuing long-run trends in LNG's share of total gas use from Energy Institute (2023).

Projected LNG supply: LNG supply is projected by adjusting total projected LNG liquefaction capacity from IGU (2023) to account for actual average utilisation of liquefaction capacity. Between 2010 and 2022, actual LNG traded (sourced from Energy Institute (2023)) was an average of 71% of total global LNG capacity, with this utilisation rate remaining approximately stable as liquefaction capacity grew by more than 60% over the same period.

Anticipated global oversupply of LNG: Oversupply of LNG was estimated based on the difference between projected LNG consumption (under the *Stated Policies* scenario) and projected LNG supply.

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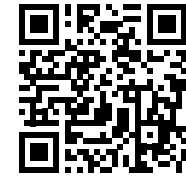
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