

# **Australia's Future Gas Strategy**

## **Greenpeace Australia-Pacific Submission**

November 2023

### **Summary and Recommendations**

Thank you for the opportunity to make a submission to Australia's Future Gas Strategy. Greenpeace Australia Pacific (Greenpeace) sees this as an important opportunity to ensure that Australia's emissions are reducing at a speed and scale sufficient to stay within a 1.5C degree global temperature rise and to meet our international climate commitments, as well as our domestic obligations including our legislated net-zero target.

*Greenpeace is a global environmental network dedicated to the mission of securing a world capable of nurturing life in all of its magnificent diversity. We are fully independent, accepting no funding from any government, business or political party anywhere in the world. Greenpeace Australia Pacific is an autonomous entity headquartered in Sydney with more than 1.2 million people participating in our network.*

If Australia is to achieve its Net Zero Emissions by 2050, and 43% emissions reductions by 2030 targets that the Australian Government has legislated, there needs to be an accompanying reduction in the use of fossil gas and an end to approvals of new fossil fuel developments.

Greenpeace Australia-Pacific recommends:

1. The Future Gas Strategy should provide a clear and managed phase out of fossil gas use in Australia.
2. Australia should not continue to allow expansion into new gas fields, including Woodside's Browse proposal.
3. Greenpeace recommends that the Australian government strengthen the regulation of carbon offsets to ensure their quality and to limit the volume of offsets that proponents can use.
4. Australia should develop regulations to ensure that green hydrogen is truly green, is not prolonging the role of fossil gas in the energy system, and that undue levels of RE are not diverted from other more efficient decarbonisation efforts for the sake of hydrogen production.
5. The Future Gas Strategy should incentivise renewable energy projects to ensure the sufficient pace of energy transition, especially given the Albanese Government's announcement in November regarding the Capacity Investment Scheme.

### **Australia's path to net zero domestic emissions**

The imperatives for transitioning the Australian economy away from fossil gas are abundantly clear in regards to the impacts on the climate, the environment, the economy and public health. The stark reality is that gas is a harmful fossil fuel that causes global heating. It is the fastest growing source of global emissions,<sup>1</sup> and accounted for almost

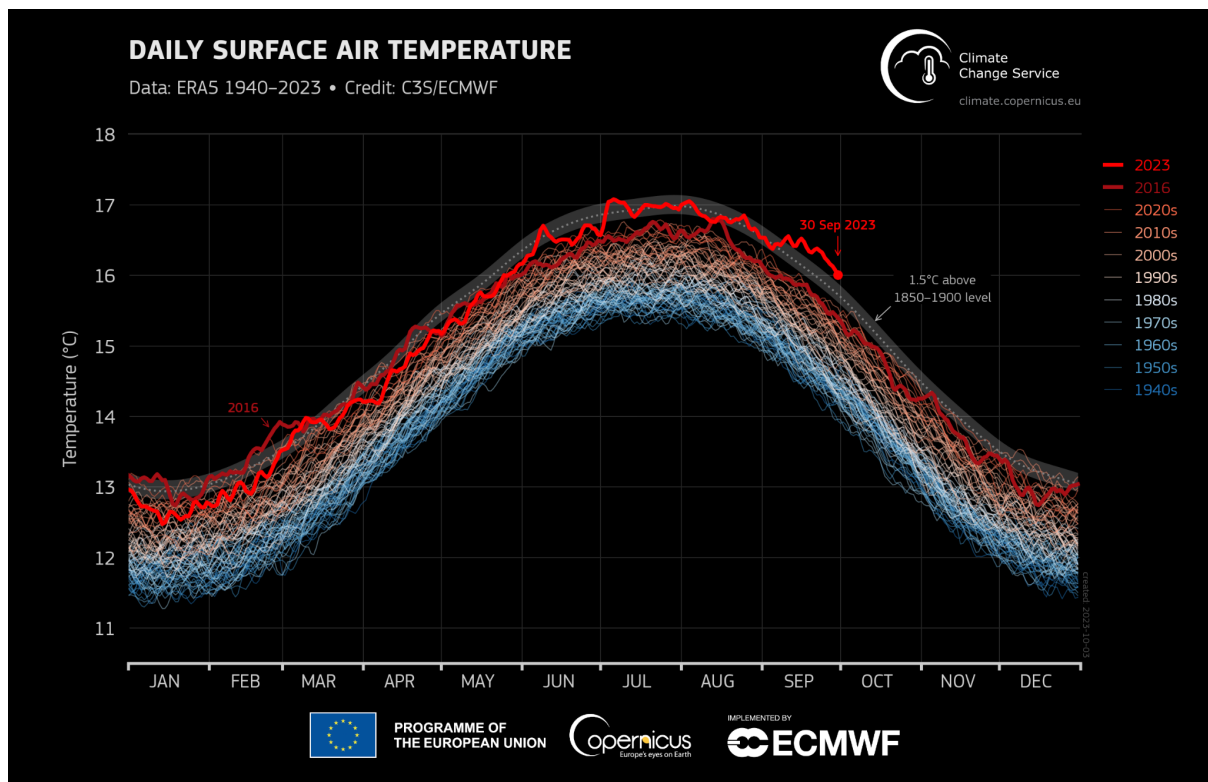
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<sup>1</sup> Integrated Carbon Observation System, "Data supplement to the Global Carbon Budget". 2022. <https://www.icos-cp.eu/science-and-impact/global-carbon-budget/2022>

20% of Australia’s domestic emissions in 2021<sup>2</sup> (scientists say this is likely to be higher due to leaked methane<sup>3</sup>). Australia’s annual emissions from gas have increased from 3,664t in 1962 to 77,242,140t in 2021.<sup>4</sup> Furthermore, the potential emissions from Australia’s five gas basins is over 3 times Australia’s current annual emissions (1602 million tonnes of carbon dioxide equivalent total potential against 513 million tonnes CO<sub>2</sub>-e).<sup>5</sup>

Australia must urgently transition away from fossil fuels, including from fossil gas, if we are to have any chance of limiting the worst harms of climate change. Greenpeace therefore calls for the Future Gas Strategy to provide a clear and managed phase out of fossil gas use in Australia.

The first step must be to prevent any further expansion of the gas industry. The IEA Net Zero Emission strategy notes that no new gas fields should be opened for development<sup>6</sup> and the Future Gas Strategy should reflect that imperative. There are continually rising concerns about the climate impacts being experienced in Australia, in the Pacific and around the world with 2023 likely to be the hottest year on record.<sup>7</sup>



<sup>2</sup> Our World in Data, “Australia: CO<sub>2</sub> Country Profile”. Viewed 25th May 2023.

<https://ourworldindata.org/co2/country/australia>

<sup>3</sup> International Energy Agency, “Global Methane Tracker”. 2022.

<https://www.iea.org/reports/global-methane-tracker-2022/overview>

<sup>4</sup> Our World in Data. Visited 15 May 2023.

<https://ourworldindata.org/co2/country/australia#coal-oil-gas-cement-how-much-does-each-contribute-to-co2-emissions>

<sup>5</sup> 350.org. “GAS-TASROPHE: The climate impact of the Government’s strategic gas basins”. 2021.

<sup>6</sup> International Energy Agency, “Net Zero by 2050 – Analysis,” 2021,

<https://www.iea.org/reports/net-zero-by-2050>.

<sup>7</sup> Copernicus Climate Change Service

<https://climate.copernicus.eu/2023-track-be-hottest-year-ever-whats-next>

*Image: Global daily surface air temperature (°C) from 1 January 1940 to 30 September 2023, plotted as time series for each year. 2023 and 2016 are shown with thick lines shaded in bright red and dark red, respectively. Other years are shown with thin lines and shaded according to the decade, from blue (1940s) to brick red (2020s). The dotted line and grey envelope represent the 1.5°C threshold above preindustrial level (1850–1900) and its uncertainty. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF.*

While the majority of the gas produced in Australia is exported and therefore fueling global emissions, it also creates a significant source of domestic emissions due to the energy intensive process involved in processing the gas into LNG for shipping. Export oriented gas production drives further gas reliance domestically by creating ongoing gas supply and requiring significant local gas infrastructure investment. This phenomenon is especially pronounced in WA - by far the biggest gas using state - due to its domestic gas policy which further embeds gas use adding to ongoing emissions and delaying the transition to renewable energy.

Australia has agreed to achieve a 30% reduction in methane emissions by 2030 as a signatory to the 2022 Global Methane Pledge. Greenpeace applauds this commitment, however, allowing further gas production will undermine Australia's ability to meet this target or its emissions reductions targets. This is especially problematic given the underestimated volume of fugitive methane emissions. According to an analysis by IEEFA, "fugitive methane emissions from coal mining and oil and gas supply have likely been grossly underestimated to date – by about 80% for coal and 90% for oil and gas."<sup>8</sup>

A comprehensive transition strategy to phase down the use of gas in other domestic applications is urgently required. Aligning Australia's energy system with global efforts to limit warming to 1.5 degrees requires a fast, fair and well-planned clean energy transition. This has implications for gas demand as the world transitions out of fossil fuels, including gas, as quickly as possible. As the Australian Energy Market Operator (AEMO) acknowledged in its 2022 GSOO for the Eastern States, "(I)n the next 20 years, as Australia transitions to a net-zero emissions economy, the type and level of gas use is expected to be impacted by consumer choice, technology advances, public policy and the potential rise of hydrogen."<sup>9</sup> AEMO predicts, "Longer term, annual domestic consumption is forecast to fall as consumers shift from gas to electricity or zero-emission fuels."<sup>10</sup>

## **Australia as a responsible international citizen**

As a leading exporter of fossil gas,<sup>11</sup> Australia has a responsibility to reduce the production of gas as highlighted in the UN's 2023 Production Gap Report to support the world's efforts to contain global heating to 1.5 degrees, and to . The report outlines the current discrepancy between planned production of fossil fuels and what is required to limit global heating. The report states that "There is a strong need for governments to establish near- and long-term reduction targets for fossil fuel production and use" while also noting that

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<sup>8</sup> <https://ieefa.org/media/3853/download?attachment>

<sup>9</sup> AEMO 2022, Gas Statement of Opportunities, p. 4  
<https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-statement-of-opportunities-gsoo/2022-gas-statement-of-opportunities>

<sup>10</sup> AEMO 2022, Gas Statement of Opportunities, p. 4  
<https://aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-statement-of-opportunities-gsoo/2022-gas-statement-of-opportunities>

<sup>11</sup> <https://www.ga.gov.au/digital-publication/aecr2022/gas>

Australia currently has “no national policy framework aiming to restrict fossil fuel exploration, production, or infrastructure development.”<sup>12</sup> This state of affairs is clearly undermining global emissions reductions efforts and is putting the prospect of a safe climate future in jeopardy.

The IEA has identified a key misconception often prosecuted by the gas industry that any transition away from gas use is primarily dependent on reducing demand. Their *Oil and Gas Industry in Net Zero Transitions Report* states that “Focusing narrowly on a “demand-led transition” implicitly leaves responsibility for change with consumers, and legitimises a passive approach from suppliers... In practice, no one committed to change should wait for someone else to move first.”<sup>13</sup>

There is no excuse for Australia, as a major gas exporter, to continue to allow expansion into new gas fields like Woodside’s Browse proposal. Doing so will, as the IEA identifies, take the world beyond its emissions reduction targets.

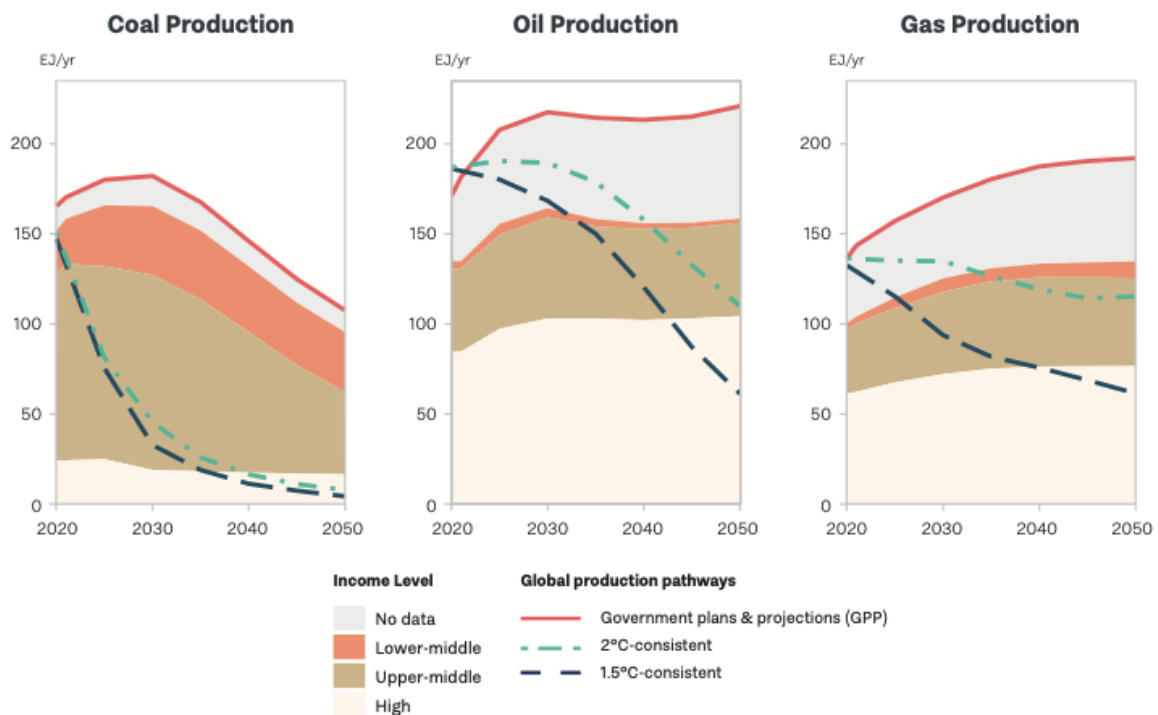


Image: Government plans and projections would lead to an increase in global coal production until 2030, and in global oil and gas production until at least 2050.<sup>14</sup>

### The risk of false solutions

The UN Production Gap Report 2023 highlights concerns about the unreliability of both Carbon Capture & Storage (CCS) and the use of offsets, which they refer to as Carbon Dioxide Removal (CDR).

<sup>12</sup> <https://www.productiongap.org/2023report/#R6>

<sup>13</sup> IEA (2023), *The Oil and Gas Industry in Net Zero Transitions*, IEA, Paris

<https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions>, License: CC BY 4.0

<sup>14</sup> <https://www.productiongap.org/2023report/#R6>

The report states that “there are large uncertainties in the technical, economic, and institutional feasibility of developing and deploying novel CDR and fossil-CCS technologies at the extensive scale envisioned in these scenarios. Around 80% of pilot CCS projects over the last 30 years have failed, with annual capacity from operational projects resulting in dedicated CO<sub>2</sub> storage currently amounting to less than 0.01 GtCO<sub>2</sub>/yr (see Section 2.4). There are also widespread concerns around the potential negative impacts arising from extensive land-use for conventional or novel CDR, which could affect biodiversity, food security, and the rights of Indigenous peoples and traditional land users.”<sup>15</sup>

The Report further explains the risk in relying on dubious CCS technology, saying, “Even if all CCS facilities planned and under development worldwide become operational, only around 0.25 GtCO<sub>2</sub> would be captured in 2030 (IEA, 2023a), less than 1% of 2022 global CO<sub>2</sub> emissions (Liu et al., 2023). The track record for CCS deployment has been poor to date, with around 80% of pilot projects ending in failure over the past 30 years (Wang et al., 2021). Counting on these largely unproven and relatively costly technologies being rolled out at scale is thus a potentially risky and dangerous strategy.”<sup>16</sup>

The IEA has also cast doubt on the oil and gas industry’s over-reliance on CCS technology. Their most recent report, *The Oil and Gas Industry in Net Zero Transitions*, highlights that, “If oil and natural gas consumption were to evolve as projected under today’s policy settings, this would require an inconceivable 32 billion tonnes of carbon captured for utilisation or storage by 2050, including 23 billion tonnes via direct air capture to limit the temperature rise to 1.5 °C.”

In Australia, only Chevron’s Gorgon CCS project has been able to sequester any carbon but has fallen well short of its stated aims. In 2023 it is only expected to sequester one third of its design capacity after seven years of attempts.<sup>17</sup> The Gorgon CCS project has seen significant delays and expensive problems resulting in an overall inadequate outcome.<sup>18</sup> Similar issues have plagued other CCS operations around the world and even when it has shown partial success, it is ultimately being used to justify further gas developments and thus further emissions.<sup>19</sup> The financial investments targeted towards dubious CCS technology by both the Australian Government and the gas industry would be much better targeted towards renewable energy alternatives that actually speed up the transition away from fossil fuels rather than allowing for their ongoing role in the energy system. CCS is a technology that must not be relied upon to achieve the emissions reductions required from the gas industry and should not receive any government funding.

Similarly, there are significant concerns about the gas industry’s over-reliance on carbon offsets. Leading experts have criticised the integrity of Australia’s carbon offsetting system<sup>20</sup> and despite a recent review into ACCUs, Climate Analytics point out that “for every Australian carbon credit unit (ACCU) generated to offset one tonne of CO<sub>2</sub> equivalent

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<sup>15</sup> <https://www.productiongap.org/2023report/#R6>

<sup>16</sup> <https://www.productiongap.org/2023report/#R6>

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<https://www.watoday.com.au/national/western-australia/chevron-s-troubled-carbon-capture-and-storage-at-gorgon-set-to-worsen-in-2023-20230711-p5dngj.html>

<sup>18</sup>

[https://ieefa.org/wp-content/uploads/2022/03/Gorgon-Carbon-Capture-and-Storage\\_The-Sting-in-the-Tail\\_April-2022.pdf](https://ieefa.org/wp-content/uploads/2022/03/Gorgon-Carbon-Capture-and-Storage_The-Sting-in-the-Tail_April-2022.pdf)

<sup>19</sup> <https://ieefa.org/resources/carbon-capture-crux-lessons-learned>

<sup>20</sup>

<https://www.abc.net.au/news/2022-03-24/insider-blows-whistle-on-greenhouse-gas-reduction-schemes/100933186>

(tCO<sub>2</sub>e) emissions... from liquefied natural gas (LNG) production in Australia – about 8.4 tCO<sub>2</sub>e lifecycle emissions are emitted globally.”<sup>21</sup>

While there is a role for offsets to be used as the option of last resort in the mitigation hierarchy, there are a number of concerns about how much carbon is actually being sequestered out of the atmosphere and how that is calculated. There is no restriction on the amount of offsets a company can use under the Safeguard Mechanism, thus allowing for more fossil fuel projects to continue being approved and more emissions to be generated. Macintosh et al highlight key issues with offsets that claim to regenerate forest cover by reducing grazing. Their research suggests that some proponents are “claiming credits while forest regeneration has not been occurring.”<sup>22</sup> Other research suggests there is a missing element in calculating offsets by limiting the expected span of carbon sequestration to 100 years while carbon remains in the atmosphere for much longer.<sup>23</sup>

The overall risk is that the offsets being purchased by gas companies are not sequestering carbon at a sufficient rate and duration, leading to a net increase in atmospheric carbon. Furthermore, continuing to rely heavily on carbon offsets rather than limiting the fossil gas pollution at its source locks in greater fossil gas supply in the Australian and global energy system, slowing the pace of transition required.

Greenpeace recommends that the Australian government strengthen the regulation of carbon offsets to ensure their quality and to limit the volume of offsets that proponents can use.

## **The role of hydrogen**

Greenpeace is encouraged by the growing interest to create green hydrogen, developed entirely by renewable energy sources. There is potential in the export markets for green hydrogen and green ammonia plus some niche roles that green hydrogen may be able fill in the domestic market. We encourage the exploration and development of green hydrogen for hard-to-abate sectors and to meet production needs such as feedstock in fertiliser production processes. There is also a real opportunity to invest in the development of green steel and related manufacturing capability in Australia. We would support investment in a green steel sector and other ways of adding ‘green’ value to industrial and manufacturing processes but urge that this must not utilise fossil fuels.

While there is clearly a role for green hydrogen and ammonia in the development of green industry and energy, there are also a number of abiding concerns with hydrogen including the potential for hydrogen blending to facilitate greenwashing of fossil gas and overly prolong the use of fossil gas. There is also doubt that infrastructure is capable of supporting blending, that it is very cost ineffective, and whether any mix over 10% hydrogen is technically feasible. A major study by the International Renewable Energy Agency (IRENA) concludes that such a process is costly and impractical and would push up

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<sup>21</sup>

[https://ca1-clm.edcdn.com/assets/why\\_offsets\\_are\\_not\\_a\\_viable\\_alternative\\_to\\_cutting\\_emissions.pdf?v=1697123932](https://ca1-clm.edcdn.com/assets/why_offsets_are_not_a_viable_alternative_to_cutting_emissions.pdf?v=1697123932)

<sup>22</sup> [https://law.anu.edu.au/sites/all/files/short\\_-\\_hir\\_additionalilty\\_july\\_2022\\_final.pdf](https://law.anu.edu.au/sites/all/files/short_-_hir_additionalilty_july_2022_final.pdf)

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[https://ca1-clm.edcdn.com/assets/why\\_offsets\\_are\\_not\\_a\\_viable\\_alternative\\_to\\_cutting\\_emissions.pdf?v=1697123932](https://ca1-clm.edcdn.com/assets/why_offsets_are_not_a_viable_alternative_to_cutting_emissions.pdf?v=1697123932)

household energy costs for minimal emission reduction benefits.<sup>24</sup> This is because hydrogen is relatively inefficient and expensive to produce and anything above a 5% blend in existing gas networks would require a major upgrade of infrastructure.<sup>25</sup> Clear regulations are required to ensure that hydrogen development is 'green', is not prolonging the role of fossil gas in the energy system, and that undue levels of RE are not diverted from other more efficient decarbonisation efforts for the sake of hydrogen production.

### **Australia's ambition to become a clean energy superpower**

There is a risk that Australia will not keep pace with the international transition to renewable industry given the scale of investment committed by a growing range of countries.<sup>26</sup> Greenpeace urges the Australian Government to use its strong economic position and inherent advantages (eg. skilled workforce, abundant RE potential, existing infrastructure, and significant critical mineral deposits) to prioritise investment in green industry that proportionately matches that of other countries. If new industry or coal-replacement industry is allowed to continually rely on the fossil gas supply, Australia will risk falling behind other countries' green industry development and missing our own emissions reduction targets.

There is currently a tight labour market in Australia leading to competition for skilled workers. There is a clear risk that an expansion of the gas industry will outcompete emerging renewable energy and green industry projects. Despite desires from the Australian Government to reach 82% renewable energy, the incumbency and size of the gas industry will make it challenging for new, smaller renewable energy proponents to attract the necessary workforce, particularly in Queensland, the Northern Territory and Western Australia.

In Queensland there is a requirement for project proposals to outline their economic impacts and they do not always result in a net economic benefit to communities. The Australia Institute highlighted the impacts outlined in Arrow Energy's Gladstone LNG plant proposal in 2011. Arrow Energy's Economic Impact Assessment for the proposal showed a direct competition for workers that would likely result in other jobs, especially in the manufacturing sector being crowded out.<sup>27</sup>

As well as the competition for labour, there will likely be added competition for access to infrastructure, financing and resources. Renewable energy based projects of the scale needed to meet Australia's targets will create demand on existing port and transportation facilities, local manufacturing capacity, as well as government approvals processes, particularly in WA. If there is a simultaneous expansion of large scale gas infrastructure there will be a resultant competition for access to these elements and a likelihood of subsequent delays for the less powerful renewable energy industry.

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<sup>24</sup> International Renewable Energy Agency, "Global Hydrogen Trade to Meet the 1.5°C Climate Goal". 2022. <https://www.irena.org/publications/2022/Apr/Global-hydrogen-trade-Part-II>

<sup>25</sup> Williamson, Rachel. "Hydrogen expert says blending green fuel into gas network an "expensive" waste". *Renew Economy*. 27 March 2023. <https://reneweconomy.com.au/hydrogen-expert-says-blending-green-fuel-into-gas-network-an-expensive-waste/>

<sup>26</sup> The Australia Institute, Charlie Joyce, Anne Kantor, and Jim Stanford, "Manufacturing the Energy Revolution: Australia's Position in the Global Race for Sustainable Manufacturing," August 3, 2023.

<sup>27</sup> Grudnoff (2012) An analysis of the economic impacts of Arrow Energy's Gladstone LNG Plant, [https://australiainstitute.org.au/wp-content/uploads/2020/12/Arrow-energy-LNG-plant\\_4.pdf](https://australiainstitute.org.au/wp-content/uploads/2020/12/Arrow-energy-LNG-plant_4.pdf)

There is even a risk that some renewable energy based projects may not be able to reach FID if they cannot convince investors of the reliability of proposals due to these competitive delays and uncertainties.

Adding more gas to the energy supply is also likely to undermine demand for renewable energy and delay the transition. This is not only the case in South East Asia (see below), but also for the Australian domestic market. Given that most proposed or operating gas fields in Australia are primarily for export, domestic levels of supply are linked to export oriented projects. As mentioned above, this phenomenon is particularly noticeable in Western Australia with their domestic gas policy directly tying local supply levels to export volumes. Similarly, the Australian Government's recent intervention in the gas export market on the East coast to help ensure sufficient domestic supply has created a clearer link between export oriented projects and domestic supply volumes. With large scale export oriented gas developments being proposed across the Northern half of the country, this will also lead to additional supply to the domestic market, locking in local gas use for longer. The more investment that is made in gas projects, gas infrastructure and gas-reliant industry, the further it embeds gas in the energy system to the detriment of renewable energy. Investors will have a disincentive to move away from gas and gas-based projects as they will be looking to get a return on their investment, thus diverting and delaying investment potential away from renewable energy projects.

Both the WA and Australian Government mechanisms are also designed to reduce the price of gas domestically, providing an added advantage for gas as an energy source that renewable energy proponents have to compete against.

The Future Gas Strategy needs to prevent the development of new gas fields and incentivise renewable energy projects to ensure the sufficient pace of energy transition, especially given the Albanese Government's very welcome announcement in November regarding the Capacity Investment Scheme.

### **Decarbonisation by trading partners and international demand**

The leaked CSIRO report [Modelling the emissions impact of additional LNG in Asia](#) commissioned by Woodside shows that increasing LNG exports to South East Asia is unlikely to assist with their emissions reductions and may actually delay the transition to renewables.

This has been recently reinforced by the UN who warned that, "Many countries are promoting gas as a "bridge" or "transition" fuel, but with no apparent plans to transition away from it... However, gas could hinder or delay the transition to renewable energy systems by locking in fossil-fuel-based systems and institutions."<sup>28</sup>

The Australian Industry Energy Transitions Initiative, for example, has modelled Australian LNG export demand under various scenarios. It's recent "Pathways to Industrial Decarbonisation"<sup>29</sup> report applies the International Energy Agency Net Zero

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<sup>28</sup> <https://www.productiongap.org/2023report/#R6>

<sup>29</sup> Climateworks Centre and Climate-KIC Australia 2023, 'Pathways to industrial decarbonisation: Positioning Australian industry to prosper in a net zero global economy', Australian Industry Energy Transitions Initiative, Phase 3, Climateworks Centre  
<https://energytransitionsinitiative.org/wp-content/uploads/2023/02/Pathways-to-Industrial-Decarbo>



Emissions scenario to the Australian LNG export context. The report assumes a 36% reduction in Australia's LNG exports between 2020 and 2030, and a 73% reduction between 2020 and 2050 in response to emissions reductions in key export markets (such as China, Japan and South Korea).<sup>30</sup>

Australia's domestic gas supply is inherently tied to the LNG export market and so close attention must be made to the rapid global disruptions to fossil fuel industries, particularly among Australia's main LNG trade partners. The Federal Government needs to carefully consider the impacts a declining global LNG industry will have on our energy system and economy. There is significant risk of creating stranded assets and delaying the energy transition by supporting or investing in any further expansion of gas infrastructure or supply.

Global LNG development is stalling, with a sharp decline in demand particularly in Asia, while capacity has recently declined due to a reluctance among buyers to commit to new LNG contracts.<sup>31</sup> New build solar and wind power in Australia's major export partners China and India is cheaper than the running costs of existing gas generators<sup>2</sup>. This is concerning given that the vast majority of Australian export gas capacity is booked under contracts to buyers in Asian markets.<sup>32</sup>

Analysis by the Australian Reserve Bank shows gas-fired generation has the largest marginal source of on-demand electricity in the NEM over the past decade.<sup>33</sup> Many major LNG export customers, including China, South Korea, and Japan have pledged net zero emissions by 2050, which will likely reduce short and medium term demand, while eliminating long term demand for Australian gas. The lack of potential gas customers willing to enter contracts for Port Kembla Gas Terminal (NSW) supply has pushed back the operational start date more than 2 years to 2024 at the earliest.<sup>34</sup> The 2023 IEA Energy Policy Review notes these factors and general volatility of the global gas market has reduced the private sector's willingness to invest in new capacity or maintain existing infrastructure assets, while noting that most existing gas fields are in decline.<sup>35</sup> Furthermore, as the world decarbonises, high carbon emitters may find rapidly escalating costs reduce demand for new fossil fuel projects. For example, recent analysis of the impact of the Safeguard Mechanism suggests there may be a significant reduction in market demand for new gas projects, with the cumulative liability of Woodside and partners' Burrup Hub project projected to cost between \$28bn to \$63bn by 2050.

Given the volatility of the gas export market and the commitments of our regional neighbours to decarbonise there is likely to be significant and potentially sudden impacts to the costs and risks of over-exposure to the gas market. To avoid risking over-investment in

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<sup>30</sup> Climateworks Centre and Climate-KIC Australia 2023, 'Pathways to industrial decarbonisation: Positioning Australian industry to prosper in a net zero global economy', Australian Industry Energy Transitions Initiative, Phase 3, Climateworks Centre, p. 130  
<https://energytransitionsinitiative.org/wp-content/uploads/2023/02/Pathways-to-Industrial-Decarbonisation-Report-February-2023-Australian-Industry-ETI.pdf>

<sup>31</sup> International Energy Agency, "Gas Market Report Q1-2023," 2023,  
<https://www.iea.org/news/natural-gas-markets-remain-tight-as-uncertainty-persists-around-chinese-in-g-demand-and-further-supply-cuts-by-russia>.

<sup>32</sup> International Energy Agency, "Australia 2023 Energy Policy Review."

<sup>33</sup> de Atholia and Walker, "Understanding the East Coast Gas Market Bulletin March 2021."

<sup>34</sup> International Energy Agency, "Australia 2023 Energy Policy Review."

<sup>35</sup> International Energy Agency.

the declining gas industry and simultaneously displacing investment in Renewable Energy alternatives, the Australian Government is urged to not invest or support any further expansion of gas infrastructure or supply and create a clear plan to phase down domestic gas use.

## **Gas in the Australian economy**

It makes economic sense to shift the Australian economy away from gas and other fossil fuels and into renewable energy and green industry. A growing body of evidence demonstrates that gas peaking is an increasingly outdated method of ensuring system reliability and affordability. Battery storage can provide a faster response to instance energy requirements at a lower cost than gas.<sup>36</sup> Batteries have higher availability, less maintenance requirements and offer fixed power and energy for over 20 years.<sup>37</sup> The five-minute-settlement challenges the ability for gas peaking plants to respond to contracts and price spikes in a way that doesn't affect battery peaking.<sup>38</sup> Studies projecting ongoing use of gas for peaking note that these are used only a handful of times a year.<sup>39</sup> Deploying a mix of RE technologies provides balancing and firming services which can also lead to substantial cost reductions.<sup>40</sup> The market has already demonstrated preference for zero-emissions peaking services. For example, a 2021 analysis by the Clean Energy Council costed new build 250 MW capacity gas peakers and battery storage, finding battery storage offered lower cost of capacity and more than 30% levelized cost of energy savings over gas, alongside both capital and operational cost advantages.<sup>41</sup> The large share of renewables in the NEM have reduced the economics of baseload coal and gas-fired integration, which are increasingly uneconomical, without even factoring in potential future costs incurred by carbon pricing or other emissions management regulations.<sup>42</sup> Given these cost and emissions burdens, it is unsurprisingly that since 2021, virtual power plants, battery or demand response technologies have surpassed the share of coal and gas generators in a range of ancillary services.<sup>43</sup> Four batteries totalling over 500 MW entered the NEM in 2021 alone.<sup>44</sup>

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<sup>36</sup> Clean Energy Council, "Battery Storage: The New, Clean Peaker," 2021, <https://www.cleanenergycouncil.org.au/resources/resources-hub/battery-storage-the-new-clean-peak-er>.

<sup>37</sup> Clean Energy Council.

<sup>38</sup> Clean Energy Council.

<sup>39</sup> Net Zero Australia, "Net Zero Australia Modelling Summary Report."

<sup>40</sup> Michael Child et al., "Flexible Electricity Generation, Grid Exchange and Storage for the Transition to a 100% Renewable Energy System in Europe," *Renewable Energy* 139 (2019): 80–101.

<sup>41</sup> Clean Energy Council, "Battery Storage."

<sup>42</sup> International Energy Agency, "Australia 2023 Energy Policy Review."

<sup>43</sup> International Energy Agency.

<sup>44</sup> International Energy Agency.

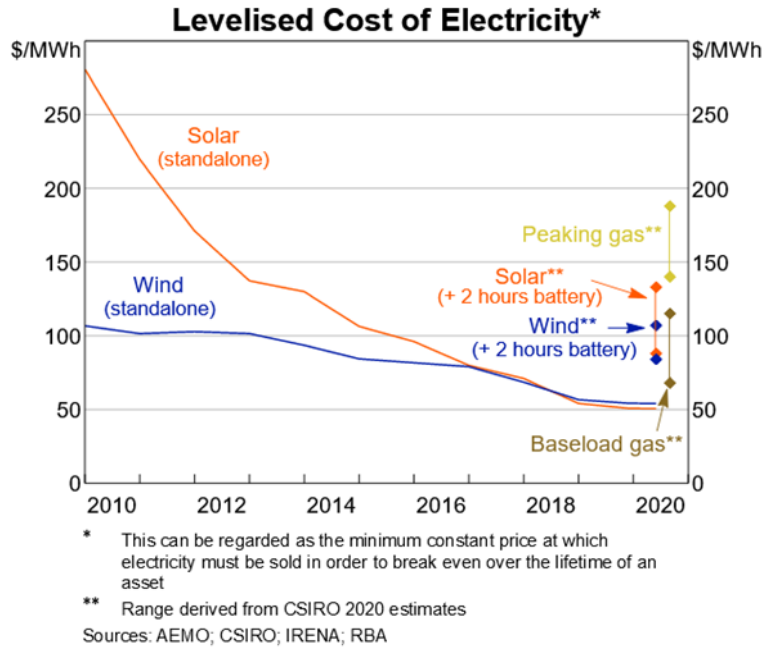


Figure: Reserve Bank Australia levelised cost of electricity 2020. March 2021 Bulletin.<sup>45</sup>

The inherent viability and affordability of renewable energy and storage options are already challenging the incumbency of gas in energy systems around the world and need to be closely considered in regards to Australia’s Future Gas Strategy.

The shift to renewable energy is proving to create a jobs boom with the IEA projecting that “the energy transition will create 14 million new jobs related to clean energy technologies”.<sup>46</sup> The International Labor Organisation has calculated that there are already 12.7 million people employed in renewable energy in 2021 and is continuing to rise.<sup>47</sup> There are more jobs per unit of energy in the renewable energy industry than there are in fossil fuel based energy systems.<sup>48</sup> The UN suggests that for every dollar invested in renewable energy there are three times as many jobs created than the fossil fuel industry.<sup>49</sup> In WA, where the gas industry has its largest footprint, it remains a relatively small employer, accounting for less than 1% of the WA workforce.<sup>50</sup>

<sup>45</sup> Timothy de Atholia and Aaron Walker, “Understanding the East Coast Gas Market Bulletin March 2021” (Reserve Bank Australia, March 18, 2021), Australia, <http://www.rba.gov.au/publications/bulletin/2021/mar/understanding-the-east-coast-gas-market.html>

<sup>46</sup> <https://www.iea.org/reports/world-energy-employment/overview>

<sup>47</sup>

[https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms\\_856649.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_856649.pdf)

<sup>48</sup>

[https://assets.nationbuilder.com/auscon/pages/20278/attachments/original/1651099093/The\\_truth\\_about\\_jobs\\_creation\\_-\\_ACF\\_report.pdf?1651099093](https://assets.nationbuilder.com/auscon/pages/20278/attachments/original/1651099093/The_truth_about_jobs_creation_-_ACF_report.pdf?1651099093)

<sup>49</sup>

<https://www.un.org/sg/en/content/sg/speeches/2021-09-24/opening-remarks-high-level-dialogue-energy>

<sup>50</sup> <https://australiainstitute.org.au/wp-content/uploads/2022/01/P1077-Gas-fired-robbery-WEB.pdf>

The global push to decarbonise provides a once-in-a-lifetime opportunity for Australia to break into renewable energy and green industry markets based on the competitive advantages inherent in our geography and economy.

Deloitte Access Economics estimates that there is a A\$435 billion economic opportunity for Australia from trading in global decarbonisation.<sup>51</sup> The Business Council of Australia, along with the ACTU, WWF and ACF have highlighted the huge employment opportunities that come with a concerted green industry expansion in their report [Sunshot : Australia's opportunity to create 395,000 clean export jobs.](#)

Supporting the gas industry and allowing it to expand in direct competition with renewable energy based initiatives will undermine Australia's economic opportunities in a decarbonising global economy. The Future Gas Strategy needs to facilitate the prevention of further gas production and the phase out of gas use to open the way for incentives to attract renewable energy and green industry development.

### **Demand-side management**

It is prudent from an energy security and availability perspective to consider how demand management and efficiency measures reduce overall gas demand. It is also vital to accelerate implementation of such measures to progress the required transition away from fossil gas to align with emissions reduction commitments.

Given gas shortfalls are predicted and as a way to assist emissions reductions, it is suggested that strong demand management and efficiency measures are urgently investigated and implemented. The [Victorian Gas Substitution Roadmap](#) and the Australian Capital Territory [Powering Canberra](#) plans are examples of policy approaches that could be applied more broadly to manage and reduce gas demand from household, commercial, and industrial sectors. As part of the Victorian Government's plan, they have recently confirmed that all new homes requiring a planning permit will be banned from connecting to the gas network from January 2024. We urge the Australian Government to support households and businesses to transition to being all electric. This reduces demand on gas, reduces emissions and avoids known health impacts associated with household gas use.

Assisting other willing sectors and companies with electrification and fuel-switching should also be explored with similar significant benefits, including:

- Ensuring gas markets remain in surplus which would put downward pressure on gas prices.
- Assisting to achieve decarbonisation goals.
- Avoiding the need for investment in expanded gas transmission infrastructure and new gas supply projects, reducing the call on government budgets and enabling private capital to be deployed in more economically productive and less environmentally harmful ways.

Much has been made of the under-accessibility of gas in the Eastern States but analysis from IEEFA shows that projected gas gaps can be addressed entirely by bringing forward gas demand reductions from 2026 to 2024. The IEA (2023) also notes that energy

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<sup>51</sup> <https://news.nab.com.au/wp-content/uploads/2023/08/Deloitte-PoweringAhead-NAB.pdf>

efficiency actions are very effective in reducing gas consumption and mitigating increases in bills.<sup>52</sup> Prioritising gas demand reductions will not only alleviate any gaps, but is also in line with the GSOO's 'Green Energy Exports' scenario achieving emissions reductions in line with both the Victorian emissions reduction target and IPCC requirements to limit warming to 1.5 degrees.<sup>53</sup>

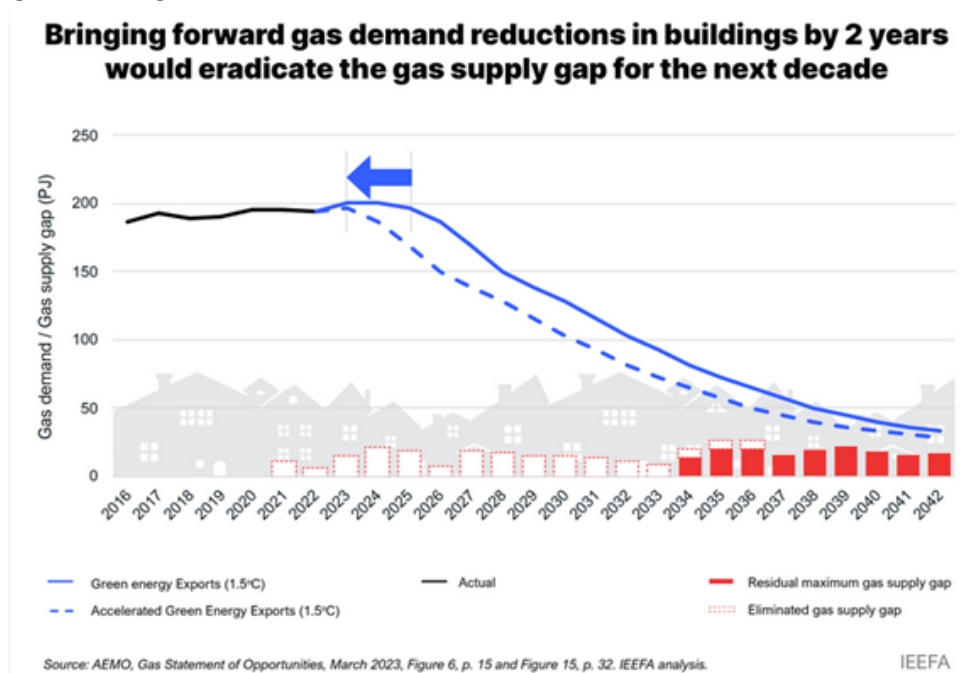


Figure: Implications of bringing forward demand reduction practices in buildings 2023 - 2042. Institute for Energy Economics and Financial Analysis.<sup>54</sup>

Furthermore, some energy efficiency and fuel-switching technologies for decarbonising industrial processes have already been proven effective. Modelling has been done to show that industrial gas use can be halved between now and 2042<sup>55</sup> via energy efficiency improvements (20% savings over 20 yrs) alongside electrification (e.g. heating processes) & green hydrogen for targeted applications.<sup>56</sup> Gas burning for industrial heating can be readily replaced by in-factory thermal stores charged with cheap daytime solar electricity, to allow 24/7 steam generation.<sup>57</sup>

Reducing manufacturing gas dependency via replacement with green hydrogen or electrification needs to be prioritised. The Australian Government officially has a goal to produce low-cost hydrogen and ammonia.<sup>58</sup> It is providing \$62.6 million in Energy Efficiency

<sup>52</sup> International Energy Agency.

<sup>53</sup> Institute for Energy Economics and Financial Analysis, "Australia Can and Should Eradicate Its Gas Supply Gap – but Not with More Gas."

<sup>54</sup> Institute for Energy Economics and Financial Analysis.

<sup>55</sup> CSIRO and Climateworks Centre, "Multi-Sector Energy Modelling 2022: Methodology and Results: Final Report," 2022, <https://publications.csiro.au/publications/publication/Plcsirop2022-5553>; Australian Industry Energy Transitions Initiative, "Pathways to Industrial Decarbonisation."

<sup>56</sup> Institute for Energy Economics and Financial Analysis, "Australia Can and Should Eradicate Its Gas Supply Gap – but Not with More Gas," March 4, 2023, <https://ieefa.org/resources/australia-can-and-should-eradicate-its-gas-supply-gap-not-more-gas>.

<sup>57</sup> ITP. (2019). "Renewable energy options for industrial process heat."

<https://arena.gov.au/assets/2019/11/renewable-energy-options-for-industrial-process-heat.pdf>

<sup>58</sup> Science and Resources Department of Industry, "Hydrogen and Ammonia for Power: Action Plan for Critical Technologies," September 2, 2022,

Grants for Small and Medium Enterprises over 2022-23, while the ARENA mandate was expanded in July 2022 to include energy efficiency and electrification technologies. These efforts need to be amplified to ensure Australia is able to export our abundant Renewable Energy resources via green manufacturing products and keep pace with the global shift to green industry.

Numerous case studies of zero emissions technology supporting industrial and manufacturing processes exist.<sup>59</sup> Recent credible modelling shows significant potential for industry gas demand reduction, via energy efficiency, electrification and fuel shift. These models include the CSIRO/Climateworks 2022,<sup>60</sup> as well as the Industry Energy Transition Initiative, which both show halving industrial gas demand between now and 2042.

Once again, we thank you for the opportunity to provide this submission and look forward to working with you to ensure a safe, sustainable and secure future for Australia.

If you have any questions concerning this submission, please contact me on the details below.



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<https://www.industry.gov.au/publications/action-plan-critical-technologies/tech-cards/hydrogen-and-ammonia-power>.

<sup>59</sup> Paul W. Griffin, Geoffrey P. Hammond, and Russell C. McKenna, "Industrial Energy Use and Decarbonisation in the Glass Sector: A UK Perspective," *Advances in Applied Energy* 3 (August 25, 2021): 100037, <https://doi.org/10.1016/j.adapen.2021.100037>; Andrea Liberale Rispoli et al., "Simultaneous Decarbonisation of Steel and Oil & Gas Industry by MSW Gasification: Economic and Environmental Analysis," *Energy Conversion and Management* 245 (October 1, 2021): 114577, <https://doi.org/10.1016/j.enconman.2021.114577>.

<sup>60</sup> CSIRO and Climateworks Centre, "Multi-Sector Energy Modelling 2022: Methodology and Results: Final Report."