



27 June 2023

Ads Standards  
PO Box 5110  
BRADDON ACT 2612

Complaint lodged via website at: [www.adstandards.com.au](http://www.adstandards.com.au)

## RE: APPEA – future of gas website

1. We act for Lock the Gate and Comms Declare. Lock the Gate is a national grassroots organisation made up of over 120,000 supporters and 260 local groups who are concerned about the ongoing and rapid expansion of risky coal mining, coal seam gas and fracking. Comms Declare is a group of more than 360 marketing, PR, advertising and media organisations and 90 other organisations, who have declared that they do not support activities or organisations that promote the growth of fossil fuels, high greenhouse gas pollution or deception around science or climate actions.
2. We are writing on their behalf to request that you investigate whether statements made by the Australian Petroleum Production and Exploration Association (**APPEA**) on its “future of gas” website (**Website**) are misleading and in breach of sections 1 and 2 of the Environmental Claims Code (**Code**).<sup>1</sup> Relevant statements from the website are reproduced at **Annexure A**.

## Environmental Claims Code

3. Section 1 of the Code requires environmental claims in advertising or marketing communication to (a) not be misleading or deceptive or likely to mislead or deceive, to (b) display disclaimers or important limitations and qualifications prominently and (c) represent the attributes or extent of environmental benefits or limitations in a way that can be clearly understood by a consumer. Section 2 (b) of the Code states that Environmental Claims must not overstate the claim expressly or by implication.

## Summary of potentially misleading claims

Source: Website: <a href="https://futureofgas.com.au/">https://futureofgas.com.au/</a>		
APPEA’s Claims	Breach of relevant section of Environmental Claims Code	Evidence to refute APPEA’s claims
Gas is 50% cleaner than coal	Section 1(a), (b), (c) and Section 2 (b), (c)	Ad Standards has found that it is misleading to call gas ‘cleaner and greener’ in its statement “the Panel considered that this claim is misleading as there are other energy sources which would be considered cleaner and greener than gas.” <sup>2</sup>

<sup>1</sup> [APPEA - Australian Natural Gas - Keeping the country running \(futureofgas.com.au\)](https://futureofgas.com.au/)

<sup>2</sup> Mazengarb M. (2020) Regulator rules it is misleading to claim gas is ‘cleaner and greener’ <https://reneweconomy.com.au/regulator-rules-it-is-misleading-to-claim-gas-is-cleaner-and-greener-56914/> (accessed 26 June 2023).

<p><u>Qualifying statement:</u> Gas is around 50% cleaner than coal when combusted for energy generation)</p>		<p>The statements are based on outdated reports and do not incorporate latest scientific findings.</p> <p>The statements do not include whole of life cycle analysis including all associated emissions during production and transport, rather it focuses solely on combustion for electricity. Relative life cycle emissions of renewables are not factored into the statements. Renewables offer a substantial opportunity to reduce emissions associated with electricity production.<sup>3</sup> While gas can achieve a lower emissions intensity compared to coal when used for electricity generation, when fugitive gas that has escaped during extraction or transport was taken into account, any emissions savings through a shift to gas were effectively erased.<sup>4</sup></p>
<p>As Australia shuts down coal, gas is picking up the load</p>	<p>Section 1(a), (c); Section 2 (b)</p>	<p>Gas fired electricity generation dropped 47% from 2012-2022 and is forecast to drop a further 34% to 2030 due to the increasing use of renewable energy sources.<sup>5</sup></p> <p>Coal-fired electricity generators are being replaced by renewable energy and storage, with gas providing residual capacity and balancing generation for the last 10%.<sup>6</sup></p> <p>No reference is made to the looming gas shortfall predicted to start as early as 2027 due to a combination of long contract export obligations, regulated gas prices, reduced investment in new gas supplies, and increased regulatory requirements.<sup>7</sup></p>
<p>Cleaner than coal, gas reduces emissions in overall energy generation</p>	<p>Section 1(a), (b), (c) and Section 2 (b), (c)</p>	<p>Extracting and processing LNG emits more GHGs into the atmosphere than coal, and emissions associated with processing and power generation is highly dependent on the type of power plant used to generate electricity from coal.</p> <p>Data for the National Energy Market (<b>NEM</b>) shows that average GHG emissions per unit of gas generation is 61% of that from coal, substantially higher than that claimed by APPEA.</p>
<p>Gas is one of Australia's main sources for generating electricity. <u>Qualifying statement:</u> About a fifth of the electricity we use is made by natural gas)</p>	<p>Section 1(a), (b), Section 2(b)</p>	<p>The claim relies on outdated figures and overstates the actual position.</p> <p>In the current financial year so far, gas supplied only 5.6% of electricity demand in the NEM from 30 May 2022 to 11 June 2023 (less than coal, wind, solar and hydro).</p> <p>Gas represented 10% of electricity generation in the National Electricity Market (<b>NEM</b>) from 30 May 2022 to 11 June 2023 and is therefore not a main source of electricity generation.</p> <p>In 2014 gas was about 13% of generation but in the <b>last 12 months</b>, it was only about 7% in the NEM <a href="#">OpenNEM: NEM</a> (climate analytics)<sup>8</sup></p>

<sup>3</sup> Bates, T., Watkiss, P., and Thorpe, T. (1997) Life cycle emissions from renewable energy technology. Retrieved from <https://inis.iaea.org/collection/NCLCollectionStore/Public/29/022/29022133.pdf> (accessed 22 June 2023).

<sup>4</sup> Mazengarb, M. (2020), Gaslighting Australia: How gas industry is driving up emissions. Retrieved from <https://reneweconomy.wengine.com/gaslighting-australia-how-gas-industry-is-driving-up-emissions-18543/> (accessed 22 June 2023).

<sup>5</sup> IEEFA Report, available at: [Gas Role in the Transition May 2023 0 \(2\).pdf](#)

<sup>6</sup> Wood, T., Reeve, A., and Suckling, E. (2023) Getting off Gas Grattan Institute. Retrieved from <https://grattan.edu.au/wp-content/uploads/2023/06/Getting-off-gas-why-how-and-who-should-pay.pdf> (accessed 22 June 2023).

<sup>7</sup> Macdonald-Smith, A., and Fowler, E. (2023) Hurdles pile up for projects to stave off gas shortage. Retrieved from <https://www.afr.com/companies/energy/hurdles-pile-up-for-projects-to-stave-off-gas-shortage-20230201-p5ch51> (accessed 22 June 2023).

<sup>8</sup> Bill Hare, Climate Analytics, Briefing: Factchecking the APPEA (8 June 2023)

27% of Australia's domestic energy consumption in 2020-21 was gas	Section 1(a), (b), Section 2(b)	These figures are generated from the use of gas in all energy consumption throughout Australia including in manufacturing and LNG production. They overstate the domestic consumption of gas.
Gas is replacing coal's share of electricity generation in Australia	Section 1(a), (b), Section 2(b)	Gas fired electricity generation dropped 47% from 2012-2022 and is forecast to drop a further 34% to 2030 due to the increasing use of renewable energy sources. <sup>9</sup>  There is no reference to Renewables. Renewables increased their share of electricity generation from 14% of the electricity generated in the NEM in 2014 to nearly 35% in 2022. Further, the government aims to take the share of renewables from 35% of electricity generation to 82% by 2030. <sup>10</sup>

### Gas is 50% cleaner than coal -Claim 1

4. The Website contains the headline statement that “gas is 50% cleaner than coal”. When the reader clicks through to the “factsheet”, this statement is qualified with “gas is around 50% cleaner than coal when combusted for energy generation”. These statements are potentially misleading as they exclude the environmental harm caused by gas and, in doing so, overstate the social and environmental benefits of gas compared to coal.
5. Further, our clients consider the statement that Claim 1 is potentially misleading or deceptive consistent with the Ad Standards finding that it is misleading to characterise gas as ‘cleaner and greener’. There, the Panel considered that the claim that “gas is cleaner and greener” is misleading as there are other energy sources which are considered cleaner and greener than gas.”<sup>11</sup>

### Reliance on outdated reports

6. The Website refers to two sources to support its claim: the Independent Review into the Future of the National Electricity Market by Alan Finkel (**Finkel Review**), published in **2017**, and the International Energy Agency report on The Role of Gas in Today's Energy Transition (**IEA Report**), published in **2019**.
7. The Website does not provide a pinpoint citation from the part of the Finkel review to support the claim; however, the Finkel Review does compare the operating emissions of new coal power stations at 700-1140 kg CO<sub>2</sub> -e/ MWh to those of gas power stations at 370-620 kg CO<sub>2</sub> -e/ MWh (depending on the technology used).<sup>12</sup>
8. The site does not provide a pinpoint citation of the IEA Report to support the claim; however, the summary of the IEA Report states that:

*While there is a wide variation across different sources of coal and gas, an estimated 98% of gas consumed today has a lower lifecycle emissions intensity than coal when used for power or heat. This analysis takes into account both CO<sub>2</sub> and methane emissions and shows that, on average, coal-to-gas switching reduces emissions by 50% when producing electricity and by 33% when providing heat.<sup>13</sup>*

<sup>9</sup> AEMO, OpenNEM: NEM (accessed 14 June 2023)

<sup>10</sup> IEEFA Report, p2, available at: [Gas Role in the Transition May 2023 0 \(2\).pdf](#)

<sup>11</sup> Mazengarb M. (2020) Regulator rules it is misleading to claim gas is ‘cleaner and greener’

<sup>12</sup> <https://www.energy.gov.au/sites/default/files/independent-review-future-nem-blueprint-for-the-future-2017.pdf>, p 207

<sup>13</sup> <https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions>

9. However, the IEA Report includes an important qualification to the above statement. It states that:

*Enhanced efforts from the gas industry to ensure best practices all along the gas supply chain, especially to reduce methane leaks, are a cost-effective means to reduce the emissions intensity of gas supply and are essential to secure and maximise the climate benefits of switching to gas.<sup>14</sup>*

10. Our clients further consider that the qualification statement that “gas is 50% cleaner than coal when combusted for energy generation” is potentially misleading because, according to a study produced by Climate Analytics, data from the National Energy Market (**NEM**) shows that average greenhouse gas (**GHG**) emissions per unit of gas generation is 61% of that from coal, substantially higher than that claimed by APPEA.<sup>15</sup> This is because the precise figure in terms of emissions associated with energy generation depends on the precise CO<sub>2</sub> content of the gas reservoir and the type of plant where the coal is combusted and can therefore vary.
11. More information is provided by climate scientist Dr Bill Hare of Climate Analytics at “Factchecking the APPEA” (5 June 2023) contained at **Annexure B**.

#### Whole of life cycle emissions from gas

12. Our clients further consider that the headline statement that “gas is 50% cleaner than coal” is potentially misleading or deceptive because it conveys the meaning that the **overall** “whole of life cycle” GHG emissions intensity of gas used in Australia is 50% of that of coal.
13. The whole of life cycle analysis of gas includes the emissions associated with the extraction, production, processing and transport of gas, and not just those associated with the combustion of gas for electricity. The claim that gas is 50% cleaner than coal does not take into account that there are significant GHG emissions associated with the whole of life cycle of natural gas. During these processes, GHGs – mostly CO<sub>2</sub> and methane – are released into the atmosphere by venting or flaring, which involves the deliberate release of GHGs into the atmosphere from the unprocessed gas stream. There are also unintentional release of GHGs into the atmosphere throughout this process. These are both known as “fugitive emissions”.
14. The life cycle of natural gas involves significant fugitive methane emissions during extraction, transmission and consumption. Methane is a more potent GHG than CO<sub>2</sub> in terms of its contribution to global warming. Over a 20-year period, methane is 84 times more effective than CO<sub>2</sub> in trapping heat, and 28 times more effective over 100 years.<sup>16</sup> Actual rates of methane leakage from the development of gas resources, from exploration through to combustion, have consistently exceeded pre-development estimates.<sup>17</sup> Methane that cannot be used for production is also routinely flared (combusted) at drilling sites, which causes further CO<sub>2</sub>

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<sup>14</sup> Ibid. <https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions>

<sup>15</sup> Bill Hare, Climate Analytics, Briefing: Factchecking the APPEA (8 June 2023) p2-3.

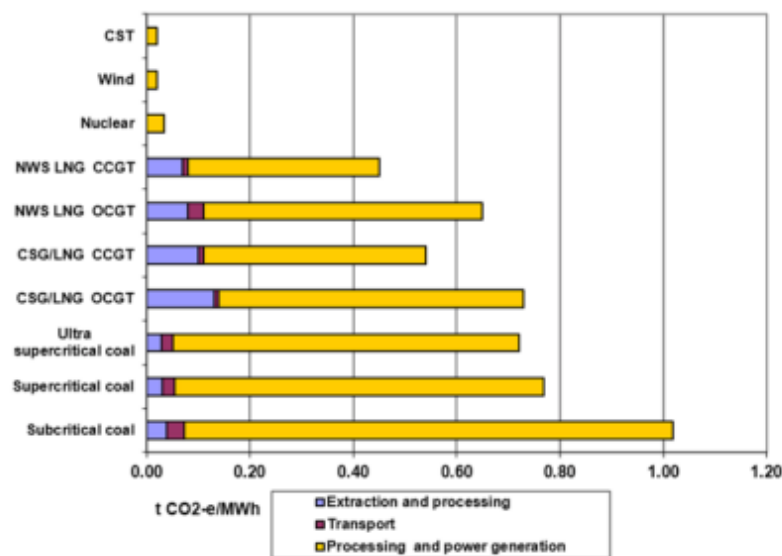
<sup>16</sup> Penny D Sackett *Expert Report on the Greenhouse Gas and Climate Implications of the Narrabri Gas Project 40 (SSD6456)* (9 August 2020) p7, available at [sackett-narrabri-gas-project-ipc-advice-revised\\_final.pdf \(nsw.gov.au\)](#); CSIRO, *Mitigation and Offsets of Australian Life Cycle Greenhouse Gas Emissions of Onshore Shale Gas in the Northern Territory* (2022) pages 33-34, available at: [GISERA report template \(csiro.au\)](#)

<sup>17</sup> Benjamin Hmiel et al, ‘Preindustrial 14CH<sub>4</sub> indicates greater anthropogenic fossil CH<sub>4</sub> emissions’, Nature 578, 19 41 February 2020, pages 409- 412 available at: [Preindustrial 14CH<sub>4</sub> indicates greater anthropogenic fossil CH<sub>4</sub> emissions \(blm.gov\)](#).

emissions. The Climate Council has reported that, proportionally speaking, the gas supply chain emits significantly more pre-combustion GHG per unit of energy in Australia than coal.<sup>18</sup>

15. In addition to the emissions associated with extraction and production, the combustion of gas to produce energy (electricity generation) releases significant amounts of CO<sub>2</sub> into the atmosphere. While gas can achieve a lower emissions intensity compared to coal when used for electricity generation, when fugitive gas that has escaped during extraction and transport was taken into account, any emissions savings through a shift to gas were effectively erased.<sup>19</sup>
16. In 2020, the National Resources Defence Council (NRDC) in the United States published a report analysing the findings of five studies assessing the GHG emissions generated across the life cycle of LNG.<sup>20</sup> The report found that in the short term, the total emissions generated across the life cycle of exported LNG were comparable to, or potentially higher than, those generated from coal. It found that about half of total emissions from LNG occur before any electricity is generated.<sup>21</sup>
17. A comparison of the life cycle emissions intensity of Australian LNG as compared to other energy sources is illustrated by the following diagram. It shows that extracting and processing LNG emits more GHGs into the atmosphere than coal, and that emissions associated with processing and power generation is highly dependent on the type of power plant used to generate electricity from coal.<sup>22</sup>

**Figure 7.** Life cycle GHG emissions intensities for Australian fossil fuel exports, and selected renewables and nuclear, base case.



<sup>18</sup>Climate Council, *Passing Gas: Why Renewables are the Future* (2020), available at [FINAL-CC\\_MVSA0245-CC-Report-Gas\\_V5-FA\\_Low\\_Res\\_Single\\_Pages.pdf](https://www.climatecouncil.org.au/wp-content/uploads/2020/06/FINAL-CC_MVSA0245-CC-Report-Gas_V5-FA_Low_Res_Single_Pages.pdf) (climatecouncil.org.au)

<sup>19</sup> Mazengarb, M. (2020), *Gaslighting Australia: How gas industry is driving up emissions*. Retrieved from <https://reneweconomy.wpengine.com/gaslighting-australia-how-gas-industry-is-driving-up-emissions-18543/> (accessed 22 June 2023).

<sup>20</sup> NRDC, *Sailing to Nowhere: Liquefied Natural Gas is not an Effective Climate Strategy*, December 2020, available at: [NRDC: Sailing to Nowhere - Liquefied Natural Gas Is Not an Effective Climate Strategy \(PDF\)](https://www.nrdc.org.au/wp-content/uploads/2020/12/Sailing-to-Nowhere-Liquefied-Natural-Gas-Is-Not-an-Effective-Climate-Strategy.pdf)

<sup>21</sup> NRDC, *Sailing to Nowhere: Liquefied Natural Gas is not an Effective Climate Strategy*, December 2020, page 14

<sup>22</sup> Hardisty et al., *Life Cycle Greenhouse Gas Emissions from Electricity Generation: A Comparative Analysis of Australian Energy Sources* (2012) 5 *Energies* 872.

### Comparison with renewable energy sources

18. By comparison to emissions associated with the extraction, processing and combustion of gas, renewable energy sources emit relatively few GHGs into the atmosphere as shown in the above table.
19. Our client considers that comparing emissions associated with gas *only* to those of coal without also comparing gas with renewable energy is potentially misleading. Failing to disclose this information may lead the reader to the false conclusion that gas is the only energy source that releases less GHG emissions than coal when in fact, renewable energy sources release far fewer GHGs in the production of energy.
20. Accordingly, our clients consider the Claim 1 is potentially misleading because:
  - a. Ad Standards have found that it is misleading to call gas ‘cleaner and greener’.
  - b. It is not the case that GHG emissions from gas is 50% of that from coal when the whole of cycle emissions are taken into account as any emissions savings are effectively erased.
  - c. It is not the case that GHG emissions from the combustion of gas to generate electricity is 50% of that from coal because the latest average figure is 61%.
  - d. Renewable sources of energy emit relatively few GHG emissions compared to gas.

### **Gas is one of Australia’s main sources for generating electricity-Claim 2**

21. The Website includes the headline statement “Gas in one of Australia’s main sources for generating electricity”. When the reader clicks through to the “factsheet”, this statement is qualified with the statement “About a fifth of the electricity we use is made by natural gas”. Our clients consider that both statements are potentially misleading or deceptive and that the claim is unqualified and overstated.
22. The Cambridge Dictionary defines “main” as “larger, more important, or having more influence than others of the same type”. Data from the NEM shows that gas generation peaked in about 2014 and is now approximately 45% below 2014 levels. In 2014, gas represented 13% of electricity generation;<sup>23</sup> in the current financial year so far, gas supplied only 5.6% of electricity demand in the NEM from 30 May 2022 to 11 June 2023 (less than coal, wind, solar and hydro).<sup>24</sup> Our client considers that describing gas as one of the main sources of electricity is potentially misleading because it cannot be said that 5.6% represents a larger or more important source than other sources of electricity. Further, in 2014 gas was about 13% of generation but in the **last 12 months**, it was only about 7% in the NEM.<sup>25</sup>
23. APPEA relies on the Australian Energy Update 2022 to substantiate its claim that a fifth of the electricity used is generated by gas,<sup>26</sup> which states that gas had an 18% share in 2020-21. As discussed above, this figure is now outdated; the current figure is 5.6% from May 2022 to June 2023.
24. Accordingly, our client considers that the above statements are potentially misleading or deceptive because they convey the impression that gas plays a larger and more important role

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<sup>23</sup>AEMO [OpenNEM: NEM](#)

<sup>24</sup>AEMO <https://opennem.org.au/energy/nem/?range=1y&interval=1w>

<sup>25</sup> Bill Hare, Climate Analytics, Briefing: Factchecking the APPEA (8 June 2023) p2-3.

<sup>26</sup> Australian Energy Update 2022, p26

in electricity generation that it does. For this reason, our client considers that the Claim 2 is misleading and overstated contrary to Section 2(b) of the Code.

### **27% of Australia's domestic energy consumption in 2020-21 was gas-Claim 3**

25. The Website contains the statement "Over and above its role in electricity generation, over 5 million homes use gas directly every day. Showering, Cooking, warming us in winter and fueling out beloved BBQ. What you might now know is that gas met 27% of Australia's energy needs in 2020-21."<sup>27</sup> Our client considers that, taken in context, this statement conveys the meaning that gas met 27% of Australia's domestic energy needs in 2020-21. APPEA refers to the Australian Energy Update 2022 to support its claim, which states that the share of natural gas remained at 27% of the primary energy mix in 2021-21.<sup>28</sup> Our client considers that the claim is potentially misleading or deceptive because it exaggerates or overstates the role of gas in Australia's domestic economy.
26. The claim overstates the "domestic" component of the gas use, as the terms used suggest this is the gas used in our homes. These figures are generated from the use of gas in all energy consumption throughout Australia including in manufacturing and LNG production. As stated above, the use of gas in domestic energy to produce electricity is much smaller. 83% of all gas produced in Australia in 202-21 was used in the processing and export of gas in LNG.<sup>29</sup> Whilst domestic use of gas has declined from 2014-2021, the use of gas for LNG has grown significantly.<sup>30</sup> Of Australian's gas energy consumption around 33% of gas is used for electricity, 32% in mining including 28% for LNG plants (excluding the LNG itself) and 26% for manufacturing.<sup>31</sup>
27. Accordingly, our client considers that Claim 3 is potentially misleading and deceptive as it overstates the domestic component of gas usage, relying on the total figure which includes the considerable export market.

### **Gas is replacing coal's share of electricity generation in Australia-Claim 4**

28. The Website contains the statement that "As Australia shuts down coal, gas is picking up the load".<sup>32</sup> Our client considers that this statement conveys the meaning that gas is replacing coal's share of electricity generation in Australia and that it is potentially misleading or deceptive in breach of the Code for the reasons stated below. It also overstates the role of gas in electricity in breach of section 2 of the Code.
29. According to a report published by the Institute for Energy Economics and Financial Analysis (**IEEFA Report**),<sup>33</sup> gas usage for electricity generation has almost halved in recent years, dropping 47% from 2012-2022 and is expected to drop a further 34% to 2030.<sup>34</sup> By comparison, renewables increased their share of electricity generation from 14% of the electricity generated in the NEM in 2014 to nearly 35% in 2022.<sup>35</sup> Further, the government aims to take the share of renewables from 35% of electricity generation to 82% by 2030.<sup>36</sup> The IEEFA Report is contained in **Annexure C**.

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<sup>27</sup> [Fact 2 - APPEA - Australian Natural Gas - Keeping the country running \(futureofgas.com.au\)](#)

<sup>28</sup> Australian Energy Update, p2.

<sup>29</sup> Bill Hare, Climate Analytics, Briefing: Factchecking the APPEA (8 June 2023) p3.

<sup>30</sup> Bill Hare, Climate Analytics, Briefing: Factchecking the APPEA (8 June 2023) p6.

<sup>31</sup> [Australian Energy Update](#) 2022, p 9

<sup>32</sup> [Fact 1 - APPEA - Australian Natural Gas - Keeping the country running \(futureofgas.com.au\)](#)

<sup>33</sup> IEEFA Report, p2, available at: [Gas Role in the Transition May 2023 0 \(2\).pdf](#)

<sup>34</sup> IEEFA Report, p3

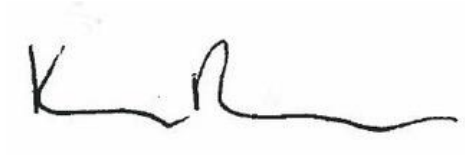
<sup>35</sup> IEEFA Report, p4.

<sup>36</sup> IEEFA Report, p4.

30. Accordingly, our client considers that the claim that gas is replacing coal's share of electricity generation is misleading; the accurate statement is that renewables are replacing coal's share of electricity generation.
31. If you have any questions relating to this complaint, please contact Kirsty Ruddock at [kirsty.ruddock@edo.org.au](mailto:kirsty.ruddock@edo.org.au).

Yours faithfully

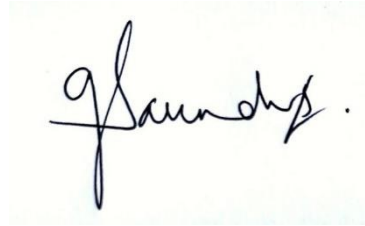
**Environmental Defenders Office**



**Kirsty Ruddock**

**Managing Lawyer**

**Safe Climate (Corporate and Commercial)**



**Clare Saunders**

**Solicitor**

**Safe Climate (Corporate and Commercial)**



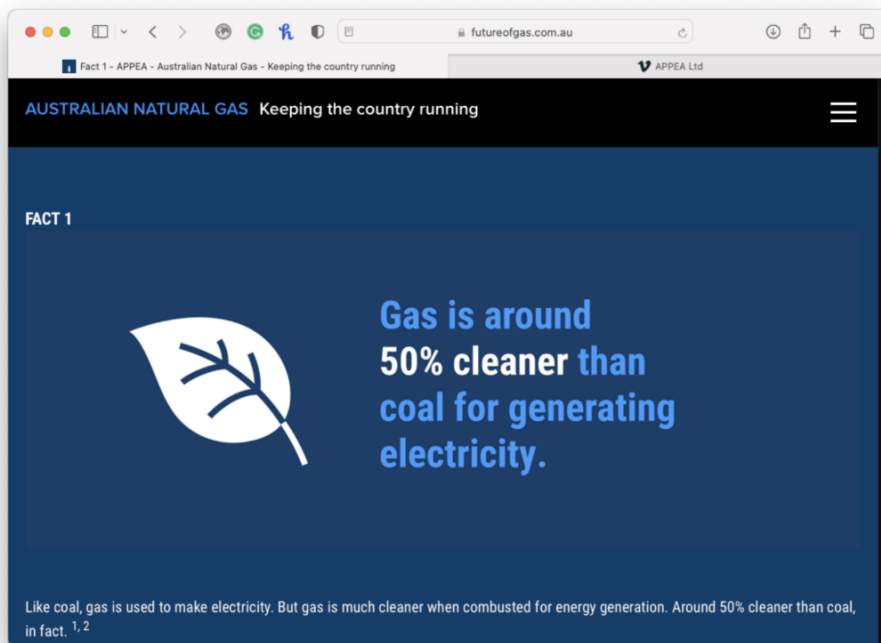
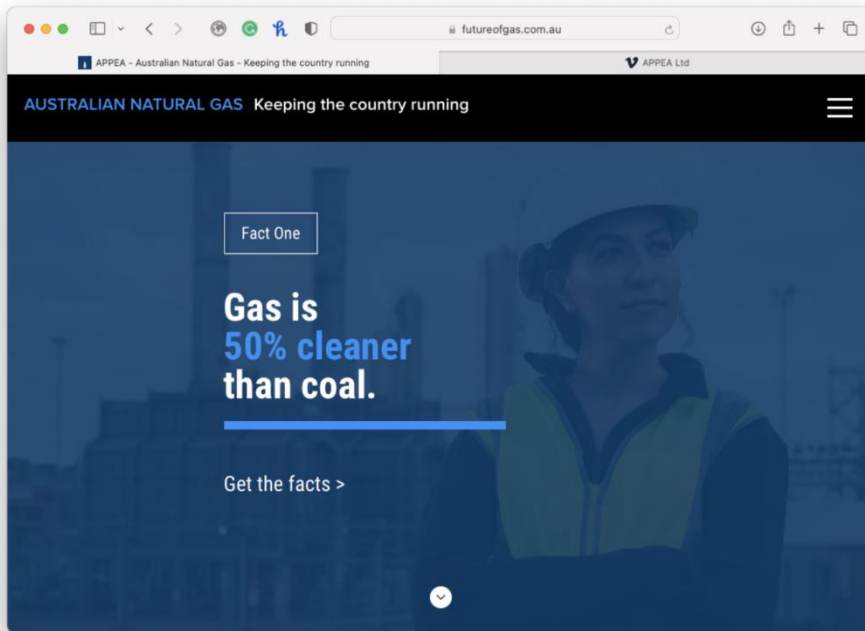
## Annexure A

### APPEA Website (as at June 2023)

Main page:

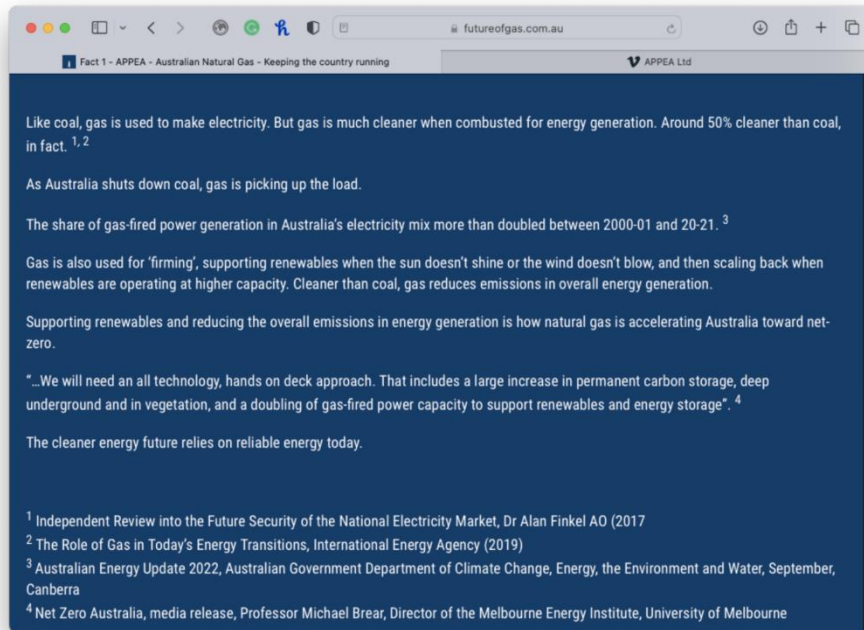
[APPEA - Australian Natural Gas - Keeping the country running \(futureofgas.com.au\)](https://futureofgas.com.au)

Claim 1: Gas is 50% cleaner than coal



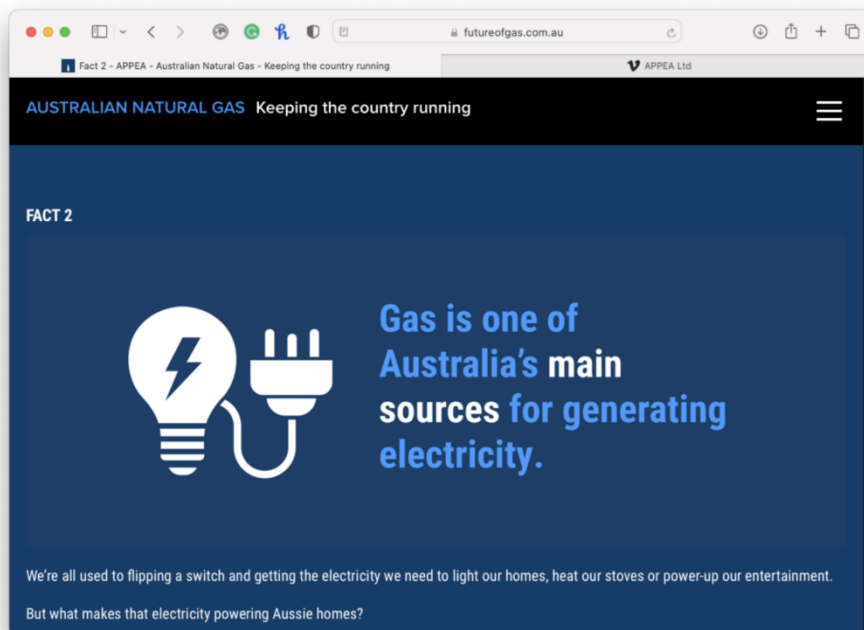
“Factsheet” containing Claim 4: Gas is replacing coal’s share of electricity generation in Australia

<https://futureofgas.com.au/fact-1/>

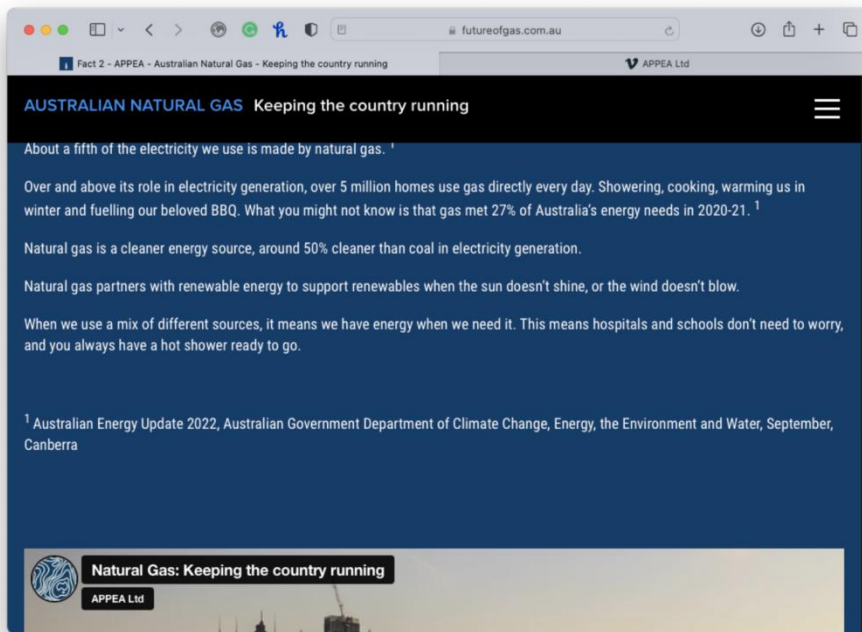


Claim 2: Gas is one of Australia’s main sources for generating electricity.

<https://futureofgas.com.au/fact-2/>



“Factsheet” containing Claim 3: 27% of Australia’s domestic energy consumption in 2020-21 was gas



**Annexure B**

**Climate Analytics: Factchecking the APPEA**

**Bill Hare (8 June 2022)**

# Briefing

# Factchecking the APPEA

By Bill Hare, Climate Analytics CEO and Senior Scientist

8 June 2022

The Australian gas industry, specifically its industry body, the Australian Petroleum Production and Exploration Association (APPEA) has launched an [expensive advertising campaign](#) to lobby for more gas use in Australia.

This briefing sets out their arguments, says why they're wrong, and provides a factual counter to them.

## **APPEA has made a large number of hyperbolic claims including:**

*"If we removed gas-related products, so much of what we rely on everyday would disappear: beer bottles, the bricks that build our homes, glass in buildings, packaging and paper as well as fertilisers for agriculture."*

These claims do not stack up and appeared designed to frighten people rather than to deal with the real challenges of the net zero transition.

**APPEA argues** that *"Natural gas is keeping Australia running on the path to net zero"* when in fact growth in the use of gas will block the pathway to net-zero.

### **APPEA claim: Gas is a transition fuel**

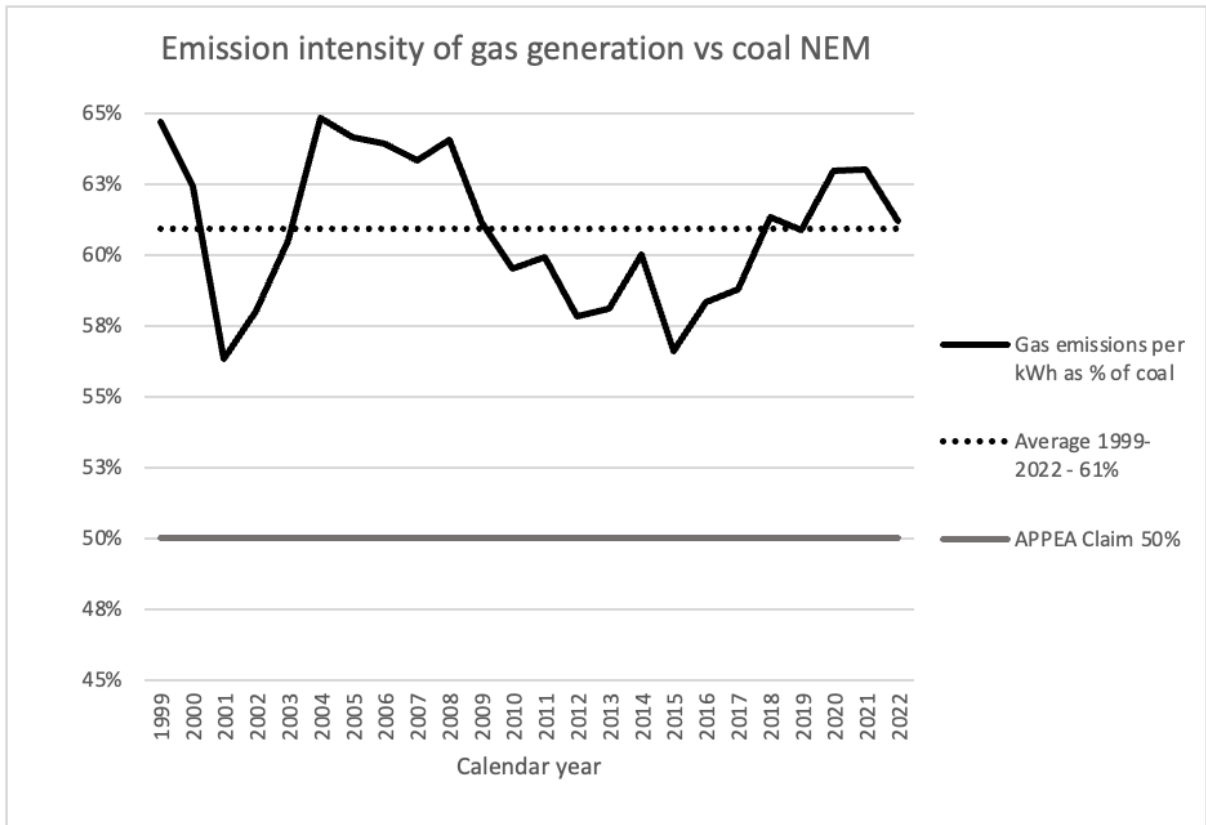
Wrong. Gas is a fossil fuel, and when it burns, it emits greenhouse gases. Our analysis, and others including the IPCC and IEA, shows that the role for gas is dwindling as economies decarbonise - and that for the world to be able to limit warming to 1.5°C there should be no new gas exploration, and production needs to be phased out fast.

Instead, we need to be doubling down on the rollout of renewables. We're running out of time to get emissions down far enough to slow the pace of climate change to something we can manage.

It would be counterintuitive and counterproductive to expand a polluting and expensive form of energy like gas. Investments in gas now will either create significant carbon lock in, or creating stranded assets.

### **APPEA claim: Gas is 50% cleaner than coal**

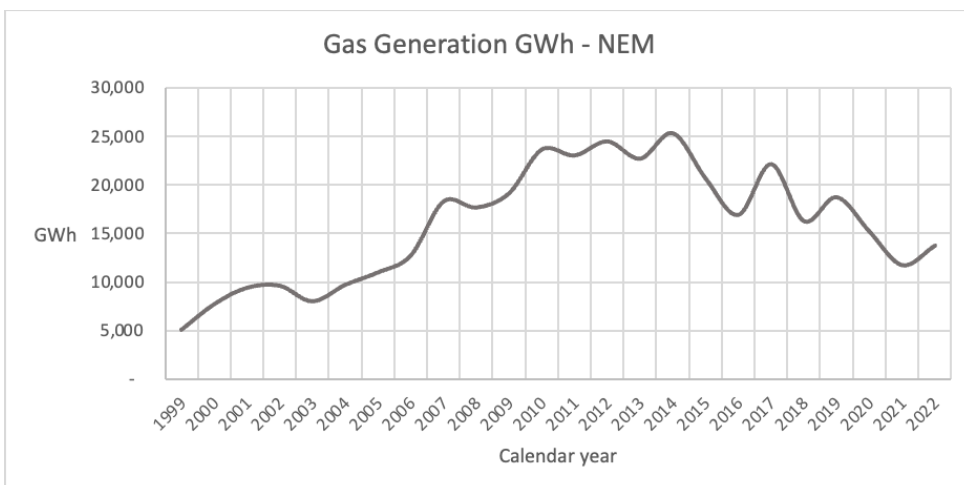
Data for the National Energy Market (NEM) shows that that average GHG emissions per unit of gas generation is 61% of that from coal, substantially higher than that claimed by APPEA.



Source: Calculate from calendar year data for generation and GHG emissions 1999-2022 from OpenNEM at <https://opennem.org.au/energy/nem/?range=all&interval=1y>

**APPEA claim:** *Gas is one of Australia's main sources for generating electricity*

Data for the National Energy Market (NEM) shows that gas generation peaked in about 2014 and is now about 45% below 2014 levels. In 2014 it was about 13% of generation but is now only about 7% in the NEM.

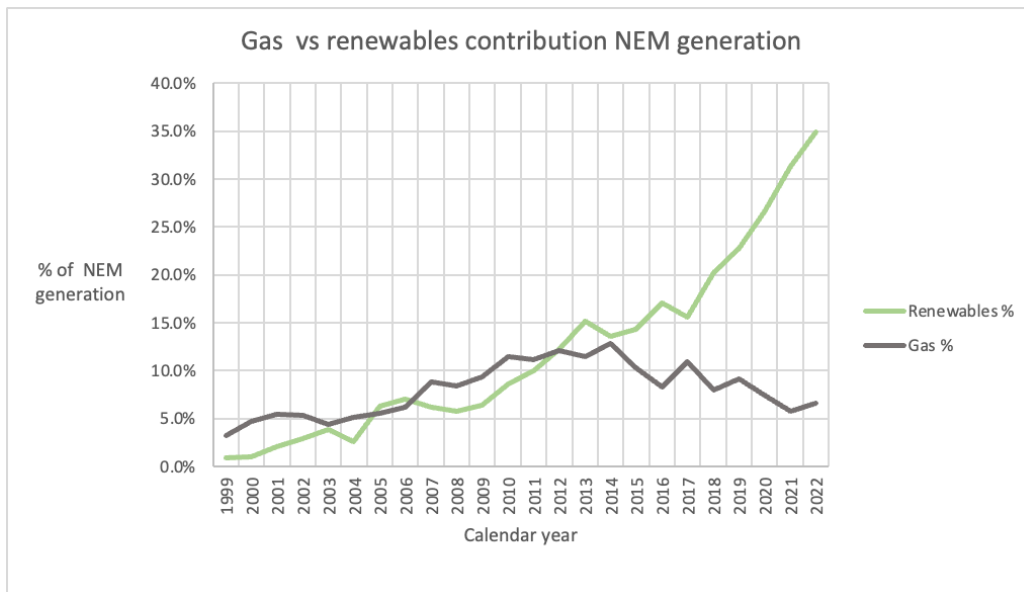


Source: <https://opennem.org.au/energy/nem/?range=all&interval=1y>

**APPEA claim:** “natural gas partners with renewable energy to support renewables when the sun doesn’t shine, or the wind doesn’t blow”

Data from National Energy Market (NEM) shows that total gas generation has declined by about 50% since 2014 as renewables have grown to about 35% of generation in 2022 from about 12-14% in 2014.

Power companies are finding that big batteries and storage are out competing – “cannibalising” – their gas generating units



Source: <https://opennem.org.au/energy/nem/?range=all&interval=1y>

**APPEA claim:** “Gas met 27% of Australia’s energy needs in 2020-1”

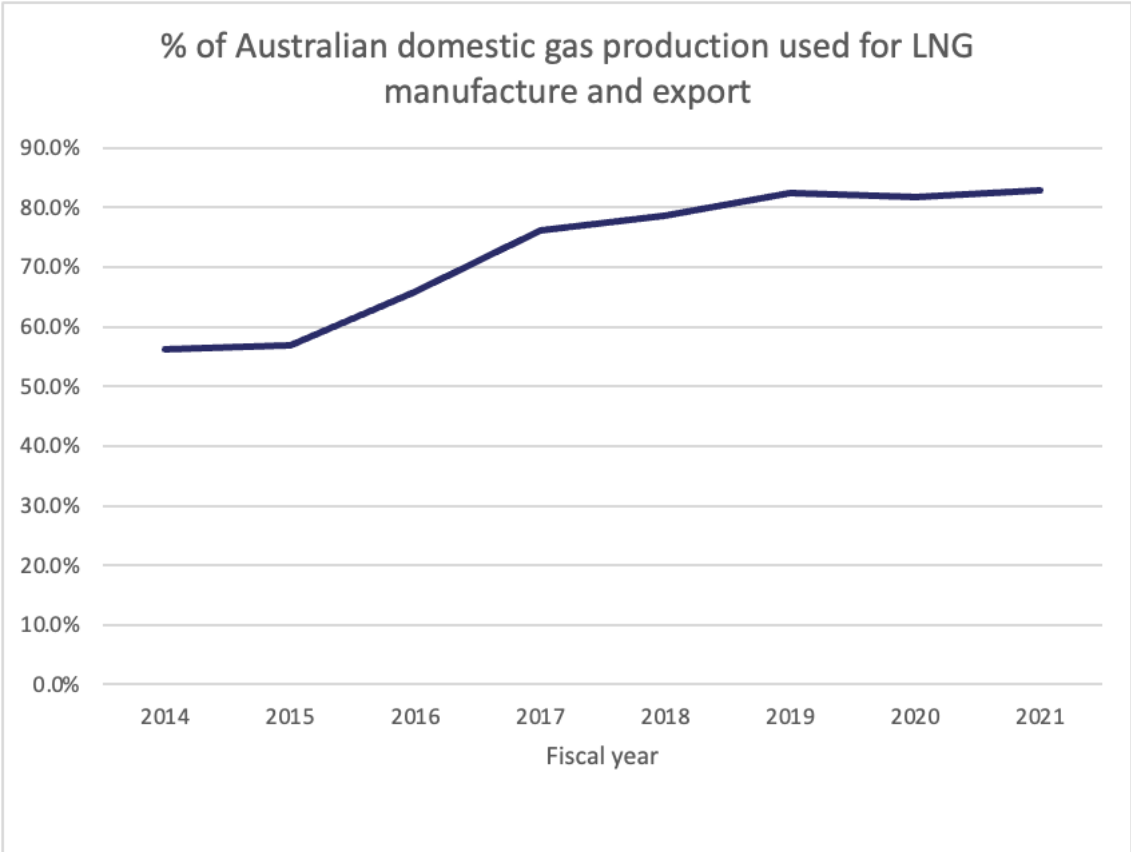
This is not the whole story and significantly exaggerates the role of gas in Australia’s domestic economy. We step through the reasons.

LNG manufacture and export accounts for most of the gas use in Australia –83% of Australian gas production went to the manufacturing and export of LNG in 2020/21<sup>1</sup>.

<sup>1</sup> Australian Energy Update 2022, Figure 3 Australian natural gas flows, petajoules, 2020–21 and Table A Australian energy supply and consumption, 2020-21.

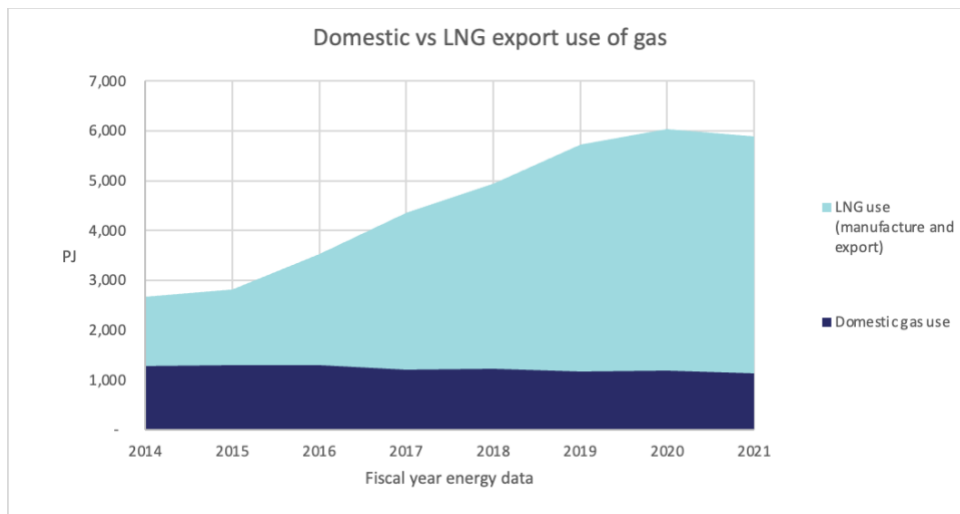
<https://www.energy.gov.au/publications/australian-energy-update-2022>





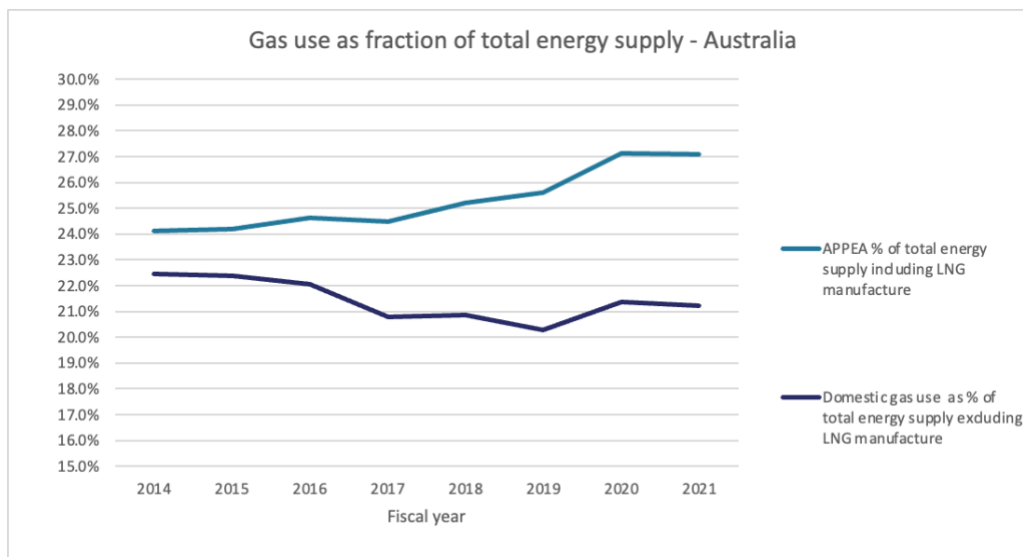
Source: Table A from Australian Energy Updates for years 2014/15 to 2020/21 inclusive from Australian production and exports of gas, and gas use for LNG manufacture from Australian natural gas flows data. Gas equivalent to about 10% of the exported gas volume is used to manufacture LNG in Australia. <https://www.energy.gov.au/publications/australian-energy-update-2022>

Whilst domestic use of gas has slowly declined over the period 2014 -2021, the use of gas for LNG manufacture and export has grown massively.



Source: Table A from Australian Energy Updates for years 2014/15 to 2020/21 inclusive from Australian production and exports of gas, and gas use for LNG manufacture from Australian natural gas flows data. Gas equivalent to about 10% of the exported gas volume is used to manufacture LNG in Australia. <https://www.energy.gov.au/publications/australian-energy-update-2022>

Taking LNG exports into account gives a very different picture of the contribution of gas to Australia's total primary energy supply. Using the biased APPEA approach this has increased to 27%. If export use of gas is factored out the fractional contribution of gas has declined towards 21%.



Source: Table A from Australian Energy Updates for years 2014/15 to 2020/21 inclusive from Australian production and exports of gas, and gas use for LNG manufacture from Australian natural gas flows data. Gas equivalent to about 10% of the exported gas volume is used to manufacture LNG in Australia. <https://www.energy.gov.au/publications/australian-energy-update-2022>

**APPEA and the gas industry argue** that LNG is a low carbon fuel and can be used to displace coal in Asian markets.

Independent research shows two key things.

First, LNG is a very carbon intensive fuel source and taking into account emissions in production, manufacture distribution and gasification, including methane leakages, may have a [greater GHG footprint](#) than coal-fired generation when used for power production.

Second, APPEA and the industry, including Woodside Energy, claim [LNG will reduce emissions in Asia](#) by displacing coal. CSIRO analysis (commissioned by Woodside but not released at the time), and our @CA\_latest analysis show this is not the case and instead renewables and efficiency are the approach to take.

APPEA makes strong and hyperbolic claims as to the importance of gas for economic activities but does not at all discuss the potential for replacement of gas through efficiency and electrification. All sectors have opportunities to replace gas, including those that are most carbon intensive, through improved efficiency, changes in processes and electrification with renewable power.

To unpack this, it is best to start with the present energy data for gas use in Australia – the real facts. This shows the LNG industry is the largest gas consumer with close to 28% of consumption. Electricity generation (not including LNG plant) accounts for about 27%, and as seen above this use is declining.

The next biggest sector is residential use for cooking, heating, and hot water, which used close to 11% of gas in 2020/21. Rewiring Australia has shown that households will be far better off replacing these gas using appliances with electric stoves, heat pumps and solar PV.

[Rewiring Australia says:](#) “It's half the running costs of a fossil fuel home and it's how we'll have the biggest impact on climate this decade”.

Mining activities accounted for about 4% of gas used in Australia – the mining industry is working on decarbonising which means replacing gas for power generation and renewables and storage.

In the Australian energy accounts, gas used in LNG manufacture is assigned to the mining category and gas used in power generation in LNG plant is assigned to electricity sector – this gas needs to be factored out to get the full picture of gas use in the LNG sector as well as a fair picture for the other sectors.

Rank	Sector (1)	PJ	% of 2020/21 gas use	Cumulative
1	LNG manufacture (2)	433.0	27.6%	27.6%
2	Electricity generation (not including in LNG plant)	428.2	27.3%	54.9%
3	Residential	165.8	10.6%	65.5%
4	Non-ferrous metals	134.6	8.6%	74.1%
5	Chemical	125.3	8.0%	82.1%
6	Mining (excluding LNG)	68.8	4.4%	86.4%
7	Other industry	50.9	3.2%	89.7%
8	Energy conversion	46.0	2.9%	92.6%
9	Commercial and services	43.3	2.8%	95.4%
10	Food, beverages, textiles	37.6	2.4%	97.8%
11	Wood, paper and printing	11.4	0.7%	98.5%
12	Iron and steel	10.0	0.6%	99.1%
13	Petroleum refining	5.0	0.3%	99.5%
14	Transport	3.0	0.2%	99.7%
15	Construction	2.7	0.2%	99.8%
16	Water and waste	1.4	0.1%	99.9%
17	Agriculture	1.2	0.1%	100.0%
	Total	1568.2	100%	
<p>Sources:  (1) Australian energy statistics, Table A2, Australian energy supply and consumption, 2020-21  (2) Australian Energy Update 2022, Figure 3 Australian natural gas flows, petajoules, 2020-21,  <a href="https://www.energy.gov.au/sites/default/files/Australian%20Energy%20Statistics%202022%20Energy%20Update%20Report.pdf">https://www.energy.gov.au/sites/default/files/Australian%20Energy%20Statistics%202022%20Energy%20Update%20Report.pdf</a></p> <p>LNG exports were estimated at 4,314 PJ, with LNG plant using 433 PJ (10% of exported volume) to manufacture this of which 95 PJ went to power generation and 338 PJ direct use.</p>				

**APPEA claim:** “Natural gas is essential for producing food and beverages, as it provides energy for baking, cooking, refrigeration, and sterilisation in the food processing industry.”

Gas used in food, beverages and textiles in 2020/21 but was only 2.4% of national gas use. Nevertheless gas use is at present important accounting for about 25% of final energy use, however biofuels account for over 50% of final energy use and electricity

15%. Efficiency, electrification, and renewables can substantially replace gas use in this sector, which is suffering from high gas prices in Australia.

**APPEA claims** gas is needed as a “*fuel for transportation within manufacturing facilities, powering forklifts, trucks, and other internal logistics vehicles*”.

But gas used in transport account for only 0.2% of gas use in Australia. And by now, nearly everyone, except APPEA it seems, understands that all these applications can be electrified over time.

**APPEA also focuses on paper**, claiming that without gas, packaging and paper could “disappear”.

The first thing to note is that gas use for wood, paper and printing gas use is only 0.7% of gas use nationally – gas use for LNG is 38 times greater. Within the sector gas use accounting for about 22% of final energy use, however biofuels account for over 39% of final energy use and electricity 27%. There are many opportunities to cost- effectively reduce gas use over time in this sector.

Sectors that are harder to abate including chemicals, non-ferrous metals, iron and steel, and other industry account for about 20% of gas use in Australia, and gas is a critical source of energy for the sectors, accounting for about 48% of final energy use.

However, in each of these industries it has been shown that there are cost effective solutions to significantly reduce fossil fuel use, including gas and replace it with electrification, efficiency and in a number of cases green hydrogen or ammonia. This is likely to take longer to achieve than the reduction is possible in the other sectors but can still yield substantial reductions even by 2030 and doing so will create many new jobs.

“Heavy industry in Australia could decarbonise, help limit warming to 1.5 degrees and create up to 1.35 million jobs: new report outlines pathways”: [Source](#)

**APPEA particularly singles out fertiliser** for its hyperbolic scare campaign saying that “*If we removed gas-related products, so much of what we rely on everyday would disappear: ...as well as fertilisers for agriculture.*”

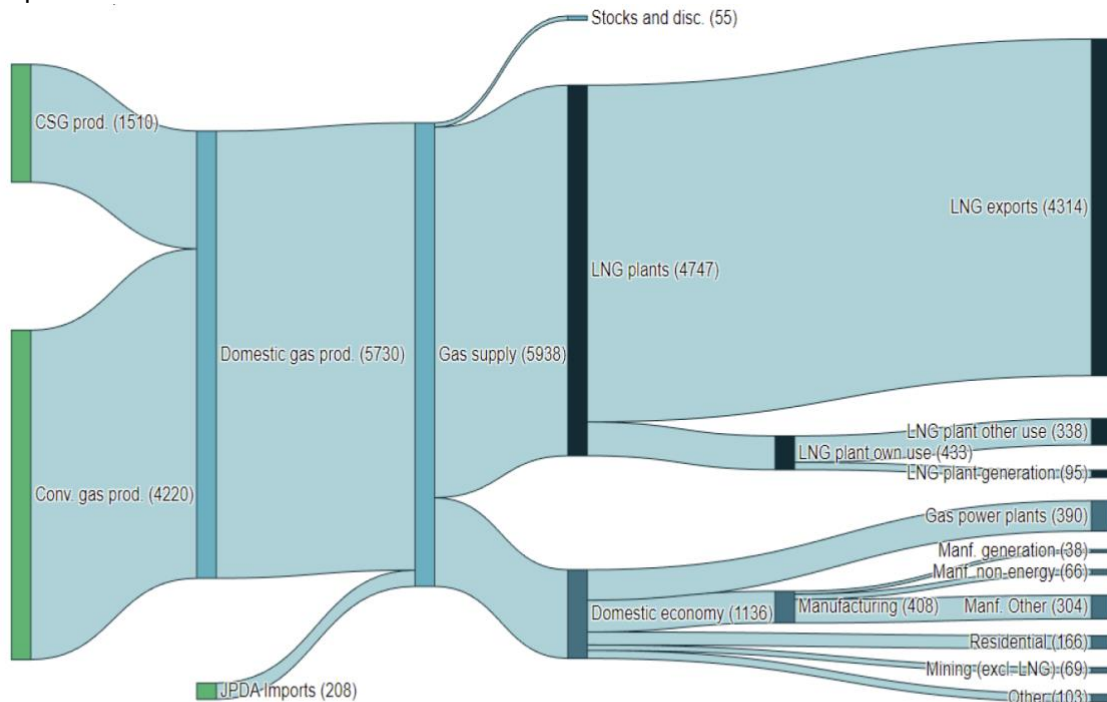
This is complete nonsense. Green fertiliser plants are beginning to be built, [including in QLD](#) and whilst not reducing emissions to zero are making a large step towards very substantial reductions.

One of the world's largest fertiliser manufacturers Yara [has announced](#) that it will be progressing towards green fertiliser.

“This year, Yara will introduce fossil-free, green fertilizers that are produced using renewable electricity instead of fossil fuels. These fertilizers will be predominantly made

from water and air, resulting in an 80-90 percent reduction in carbon emissions compared to fertilizers made with natural gas.”

Finally, an important figure that everyone should understand about gas use in Australia is to be found in the Australian Energy Update each year which shows where gas goes from production to final use.



Note: Components may not sum due to rounding

Source: Department of Climate Change, Energy, the Environment and Water (2022) Australian Energy Statistics, Tables A and F and internal sources

Source: Australian Energy Update 2022 Figure 3 [Australian natural gas flows, petajoules, 2020-21](#)

**Annexure C**

**IEEFA: Gas' Role in the Transition**

**Bruce Robertson (May 2023)**



**Institute for Energy Economics  
and Financial Analysis**

# **Gas' Role in the Transition**

*A Fuel Transitioning Out of the Energy System*

**Bruce Robertson, Energy Finance Analyst Gas/LNG**

**May 2023**



## Key Findings

**Gas usage for gas-powered electricity generation in Australia has collapsed.**

Gas usage for electricity generation has almost halved in recent years dropping 47% from 2012 – 2022 and is expected to drop a further 34% to 2030.

The amount of gas we will need for electricity generation by 2030 is very small, at just 4% of forecast production on the east coast of Australia.

**Gas is a fuel transitioning out of the energy system.**

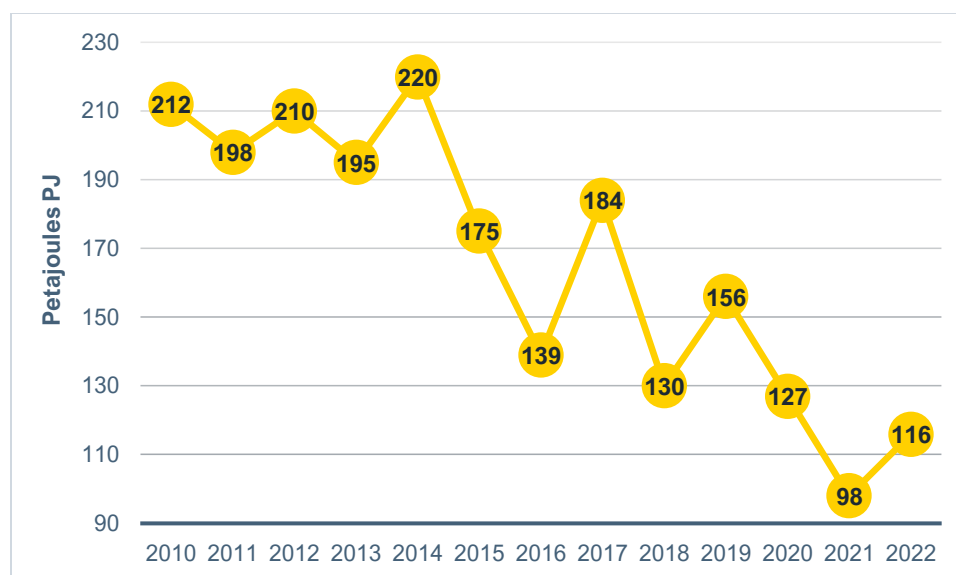


## Executive Summary

Gas usage for gas-powered electricity generation in Australia has collapsed.

Between 2014 and 2022, gas usage for gas powered generation fell by 47%. A market that virtually halves in just eight years is usually termed a collapse.

**Figure 1: Gas-Powered Generation – Annual Gas Usage**



Source: Australian Energy Market Operator ([AEMO](#)).

By 2030, the Australian Energy Market Operator (AEMO) forecasts gas usage for electricity generation will fall a further 34% to just 76 petajoules from 116PJ in 2022. AEMO forecasts demand will suffer a further collapse in that period.

This paper will seek to explain how gas usage for gas-powered generation is suffering a collapse on top of a collapse.

## Gas Is a Transition Fuel?

The peak gas lobby group, the Australian Petroleum Production & Exploration Association (APPEA), has consistently stated for many years that gas is a transition fuel:

*“Our transition to cleaner energy is at risk because of a shortage of a fossil fuel: natural gas.*

*“Or, to put it another way, we need more gas because we need more renewables.*

*“People willing to think about the nuts and bolts of decarbonising Australia’s generation sector know that a cleaner sector means, for many years, more gas-fired generation.”<sup>1</sup>*

This refrain of, “We need more gas to fire gas power stations in a renewables-rich grid” has been faithfully repeated by the Prime Minister<sup>2 3</sup> and the Energy Minister.<sup>4</sup>

We do not need more gas for the transition; we need much less gas in a renewables-rich grid.

This paper will demonstrate that the amount of gas needed in the energy transition is very small and shrinking.

## Gas Usage for Power Generation and Renewables

### The Current Situation

From 2014-2022, renewables increased their share of electricity generation strongly while gas usage in gas-powered generation nearly halved.

In 2014, renewables comprised less than 14% of the electricity generated in the National Electricity Market (NEM), which covers the eastern states of Australia. Last year, renewables accounted for nearly 35% of electricity generated.<sup>5</sup> While renewables’ share of generation has gone up 2½ times, gas usage for gas-fired generation in the NEM has nearly halved.

### The AEMO Forecasts

The government has clear ambitions to transform Australia’s grid into a renewables-rich grid, taking the share of generation from 35% renewables in 2022 to 82% renewables by 2030.<sup>6</sup>

With renewable generation expanding rapidly, AEMO forecasts large falls in gas usage from 116PJ in 2022 to just 76PJ in 2030.<sup>7</sup>

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<sup>1</sup> APPEA. [Road to renewable energy goes via the nation’s gas fields](#). 27 December 2016.

<sup>2</sup> Australian Financial Review. [Gas has a key role in energy transition](#). 6 March 2023.

<sup>3</sup> Australian Financial Review. [Greens’ gas objections impede clean energy transition: PM](#). 7 March 2023.

<sup>4</sup> Australian Financial Review. [Bowen defends need for future gas supply as Labor pushes Greens](#). 13 March 2023.

<sup>5</sup> National Energy Market. [OpenNEM energy consumption statistics 1998-2023](#).

<sup>6</sup> The Conversation. [To hit 82% renewables in 8 years, we need skilled workers – and labour markets are already overstretched](#). 18 August 2022.

<sup>7</sup> AEMO. [Forecasting Data Portal](#)

## The Answer to Gas and the Transition Is 4%

While demand for gas for gas-powered generation will collapse by 2030, overall gas production on the east coast of Australia is expected to decline only marginally.

The net result is that a very small amount of overall production is needed for the transition to a renewables rich grid.

Only 4% of total east coast gas production will be used for gas-powered generation in 2030, AEMO forecasts.<sup>8</sup>

## The Need for Gas-generation Capacity

If we are to get to 82% renewable generation by 2030, as the government aims to do, many believe there is a need for more gas-peaking capacity. AEMO calls for an increase in gas-fired peaking plants from 7GW capacity now to 10GW capacity in 2050 in its Integrated System Plan (ISP).<sup>9</sup>

So how can gas demand for gas-powered generation be collapsing when gas-peaking plant capacity is rising with the need to back up renewables?

The answer is quite simple: APPEA is intentionally conflating an increase in gas-peaking capacity with an increase in gas demand from electricity generation. It is doing this to deceive the public into believing we need more gas in a renewables-rich grid. Quite simply we don't. We need less gas to run a renewables-rich grid.

Gas demand for electricity generation has fallen, and will continue to fall, for two basic reasons:

- Gas baseload plants are closing. Gas is too expensive in Australia to use for baseload generation. Gas baseload plants use a lot of gas as they operate for most of the time;
- Gas-peaking plants simply don't operate very often. Typically, gas-peaking plants will operate for 4-14% of the year.<sup>10</sup>

High gas-consuming gas baseload plants are shutting, and some heavily government subsidised gas-peaking plants are opening that will not consume much gas.

While we will need some gas-peaking capacity, it will not operate very often, leading to low gas consumption.

<sup>8</sup> AEMO. [Forecasting Data Portal. 21 April 2023.](#)

<sup>9</sup> AEMO. [Integrated System Plan 2022.](#) Page 11

<sup>10</sup> National Energy Market. [OpenNEM. 2023](#)

## Batteries – Direct Competition to Gas

Increasingly, it is being recognised that grid-scale batteries pose a major threat to gas-peaking plants.

Batteries have totally different economics to gas plants. Those that operate in the merchant market will use their capacity every day. Batteries have high up-front capital costs but very low operating costs. They will therefore operate every day, filling at the cheap prices of the day and typically selling into the evening peak periods. Their economics rely on the difference between the price they buy electricity and the price they sell electricity. This is in contrast to gas-peaking plants, which can only operate at very high electricity prices as they struggle to compete with very high domestic gas prices in Australia.

Batteries have rapidly grown in scale. Grid-scale batteries arrived in Australia in November 2017, with the construction of the Hornsdale power reserve in South Australia.<sup>11</sup> The battery was a 100MW/129MWh. It was upgraded in September 2020 to 150MW/193.5MWh.

It has since been dwarfed by other projects, such as AGL's big battery project at Torrens Island in SA. The 250MW big battery, sized initially at one-hour storage (250MWh), is likely to expand to up to four hours storage (1,000MWh).<sup>12</sup>

In December 2021, the Victorian Big Battery opened in Geelong. The 300MW/450MWh facility is the biggest completed battery storage installation in Australia.

Even bigger batteries are planned by AGL, with a 500MW battery for the Liddell site following the closure of its 52-year 1,500MW Liddell coal-fired power station in April, and Origin Energy plans a 700MW battery for its Eraring site,<sup>13</sup> where it intends to close its 2,992MW coal-fired power plant in 2025.<sup>14</sup>

The increasing scale and number of grid-scale batteries will crimp demand for gas.

Grid-scale battery technology is attracting large investment.<sup>15</sup> Technological advances in batteries could spell the demise of gas much faster than any current forecasts for the industry.

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<sup>11</sup> [Hornsdale Power Reserve](#).

<sup>12</sup> Reneweconomy. [AGL begins process of powering up Torrens Island battery, biggest in South Australia](#). 17 November 2022.

<sup>13</sup> Australian Financial Review. [AGL Energy given green light for 500MW Liddell battery](#). 20 March 2022.

<sup>14</sup> Origin Energy. [Eraring Power Station](#).

<sup>15</sup> Bloomberg. [Lithium-ion Battery Pack Prices Rise for the First Time to an Average of \\$151/kWh](#). 6 December 2022.

## Conclusion

Gas consumption for gas-powered generation has collapsed and will continue to collapse as the electricity system changes to a renewables-rich grid.

The amount of gas we will need for electricity generation by 2030 is very small, at just 4% of forecast production on the east coast of Australia.

We are being misled by our government and the oil and gas industry, telling us we need more gas and more gas fields for the transition. We don't.

The gas industry does not have a supply problem, it has a demand problem. Gas is a fuel transitioning out of the energy system.

## Appendix 1 - Gas-powered Generation Gas Consumption by State (TJ/day)

	NSW/ACT	QLD	VIC	SA	TAS	Total
2014-15	76.3	334.3	43.0	120.0	0.5	574.0
2015-16	81.0	220.8	33.5	129.5	18.3	483.0
2016-17	56.8	170.3	53.5	155.0	16.3	451.8
2017-18	46.8	141.0	88.5	186.8	18.0	481.0
2018-19	29.8	113.0	76.3	175.3	11.5	405.8
2019-20	43.5	133.8	69.8	157.3	3.3	407.5
2020-21	20.8	126.0	37.0	129.5	2.8	316.0
2021-22	51.3	122.0	44.3	98.5	1.5	317.5
2022-23 (YTD)	31.3	107.0	38.0	83.7	2.7	262.7

Source: [Australian Energy Regulator](#).

## About IEEFA

The Institute for Energy Economics and Financial Analysis conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. [www.ieefa.org](http://www.ieefa.org)

## About the Author

### Bruce Robertson

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