



Environmental Defenders Office

11 February 2025

Ads Standards
PO Box 5110
BRADDON ACT 2612

Complaint lodged via website at www.adstandards.com.au

RE: Australian Gas Infrastructure Group – gas and electric cooktops

1. We act on behalf of Comms Declare. Comms Declare is a climate advocacy charity representing more than 95 advertising agencies and hundreds of communication professionals who have declared they will not promote the growth of fossil fuels, high greenhouse gas pollution or deception around climate science.
2. Our client request that Ads Standards investigate whether statements made by the Australian Gas Infrastructure Group (**AGIG**) on an advertisement in a LinkedIn Post (**Post**)¹ in relation to gas and electric cooktops are potentially misleading in breach of sections 1.1, 2.2 and 3.1 of the Environmental Claims Code (**Code**). The Post is reproduced at **Annexure A**.
3. AGIG owns and operates infrastructure that distributes and transmits gas in Australia and is one of Australia’s largest gas infrastructure businesses. It is comprised of the Australian Gas Networks, the Dampier Bunbury Pipeline and Multinet Gas Networks. AGIG is owned by a consortia of private sector entities listed on the Hong Kong Stock Exchange.²

Environmental Claims Code

4. The Code relevantly defines “Environment” to include “ecosystems and their constituent parts, including people and communities” and “an environmental claim in relation to goods or services...may include representations that state or imply...no effect on the environment.” “Environment” therefore captures claims relating to the health of people and the community.
5. Section 1.1 of the Code relevantly requires that Environmental Claims not be misleading or deceptive or likely to mislead or deceive. The correlating Practice Note relevantly provides that:

An advertisement may be misleading or deceptive directly or by implication or through emphasis, comparisons, contrasts or omissions.

¹ AGIG, [LinkedIn Post](#)

² AGIG, [Who We Are | Australian Gas Infrastructure Group | AGIG](#) (accessed 29/01/25).

6. Section 2.2 requires that Environmental Claims do not overstate the claim expressly or by implication. The Practice Note to s 2.2 states that “Consideration should be given to whether there is sufficient disclosure of any negative impacts”.
7. Section 3.1 requires that Environmental Claims are able to be substantiated and verifiable and that supporting information must include detail sufficient to allow evaluation of the claim.

Potentially misleading claims

8. A summary of the claims in the Post and why they are potentially misleading is set out in the table below:

Claim	Why the claim is potentially misleading
<p>Gas cooktops have the lowest average emissions per annum (32 kgCO₂e) compared with electric coil or plate grid-powered cooktops which have the highest average emissions per annum (146 kgCO₂e)</p>	<p>No evidence is provided to substantiate the claim contrary to s 3.1 of the Code.</p>
	<p>Methane emissions are apparently excluded from the figure provided for gas cooktops contrary to s 1.1 of the Code.</p>
	<p>Emissions data where electricity is supplied by renewable energy is omitted contrary to s 1.1 of the Code.</p>
	<p>Nitrogen oxide (NO) emissions and associated health risks are not included contrary to s 1.1 of the Code.</p>
	<p>Emissions associated with induction cooktops are not included contrary to s 1.1 of the Code.</p>
<p>When choosing a cooktop, there are several factors to consider, including purchase and installation cost, energy use and emissions, and reliability. Below are some factors to consider.</p>	<p>NO₂ emissions and the associated health risks are omitted as a factor to consider contrary to s 2.2 of the Code.</p>

Claim 1 – comparison of emissions

9. The Post compares gas cooktops favourably with electric cooktops across several factors: cost, reliability, energy use and emissions.
10. The Post includes emissions under the heading “Energy Costs and Emissions in Victoria”. This section compares gas cooktops and grid-powered electric coil or plate cooktops in terms of their energy costs and annual average greenhouse gas emissions (stated in CO₂ equivalent).

11. The relevant claim is as follows: gas cooktops have the lowest average emissions per annum (32 kgCO₂e) compared with electric coil or plate grid-powered cooktops which have the highest average emissions per annum (146 kgCO₂e) (**Claim 1**). Claim 1 is repeated in large text at the end of the Post.
12. Our client considers that Claim 1 is potentially misleading in the following five respects:
 - (a) it is not substantiated;
 - (b) it is not clear whether it accounts for methane (**CH₄**) emissions associated with gas cooktops;
 - (c) it does not include emissions data in relation to renewable energy sources;
 - (d) it does not disclose NO₂ emissions and the associated health risks; and
 - (e) it does not include emissions associated with induction cooktops which are significantly more energy efficient than older electric coil or plate cooktops.

Claim not substantiated

13. The Claim is not substantiated with evidence; the source of the emissions data, or how it was calculated, is not provided so that it is impossible to verify or evaluate. The asterisk next to the heading takes the reader to the Victorian government’s “compare energy” website. This is an energy price comparison website which informs consumers as to the comparative cost of various energy plans on the basis of their responses to an online questionnaire. The website does not provide any emissions data concerning gas cooktops or electric coil or plate grid-powered cooktops. Our client considers that the Claim is potentially misleading or deceptive by failing to provide information sufficient to substantiate the claim and to allow the reader to evaluate it.

Omission of methane emissions

14. Because the emissions data is unsubstantiated (see [11] above), it is not possible to determine whether the 32 kgCO₂e per annum figure provided includes estimated methane emissions associated with gas cooktops. Methane is a potent greenhouse gas and is the primary component of natural gas. A gas cooktop works by gas flowing through the supply pipe to the burner where an electronic ignition creates a spark to ignite the flame. Research conducted in 2022 measured methane emissions during all phases of residential gas cooktop use: when the cooktop was not in use; during combustion; and transitory periods of ignition and extinguishment.³ The study found that:
 - (a) annual methane emissions from all gas cooktops in the US have a climate impact comparable to the annual CO₂ emissions of 500,000 cars.⁴

³ E.D. Lebel et al, *Methane and NO_x Emission from Natural Gas Stoves, Cooktops and Ovens in Residential Homes* (27 January 2022) Environ. Sci. Technol. 2022, 56, 4, 2529–2539 (Lebel et al), p2535 available at [Methane and NO_x Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes | Environmental Science & Technology](#); ABC (27 January 2022) [Cooking with gas? Research finds health and emission risks even when stoves are off - ABC News](#); The Guardian (15 January 2023) [Are gas stoves really dangerous? What we know about the science | Air pollution | The Guardian](#)

⁴ Lebel et al, p.2529.

- (b) more than 75% of methane emissions are produced when the cooktop is not in use due to leakage from pipes and connections to the cooktop.⁵
 - (c) Gas cooktops emit up to 1.3% of the total gas they use as unburned methane.⁶
15. By contrast, electric coil or plate cooktops draw their heat from copper coils beneath the surface of the stovetop. When an electrical current heats the coils, they transfer that heat to the cooktop surface through thermal conduction. Because these cooktops do not generate heat by burning gas, they do not emit methane directly into the atmosphere.
16. The research suggests that methane emissions associated with gas cooktops are significant. As such, our client is concerned that Claim 1 may be misleading or deceptive either by omitting methane emissions from the emissions figure so that it is lower than it should be (i.e. 32 kgCO₂e per annum) or, if that data is not available, by failing to include a disclaimer that there are significant methane emissions associated with gas cooktops, including when the cooktops are turned off, that have not been accounted for.

Omission of renewable energy

17. Claim 1 omits information in relation to the use of electricity generated by renewable energy sources, either directly by standalone rooftop solar, or by renewable energy sources (solar, wind and hydro) increasingly supplying the grid. Whilst it is true that electric coil or plate cooktops would use energy, *some* of which may be generated by fossil fuels *if* powered by the grid, around 49% of Australia's national electricity market is currently supplied by renewable energy which produces no emissions and is growing rapidly,⁷ with a target that renewables will provide 82% of energy by 2030.
18. Our client is concerned that Claim 1 is misleading or deceptive by failing to provide any information in relation to the use of renewable energy either as a direct rooftop source of electricity or its growth use in the grid. This creates the false impression that plate and coil electric cookers are *always* more emissions intensive than gas cooktops and that this will be the case for years to come. To the contrary, fossil fuels are being phased out of the grid which will lower the emissions generated by running the cooktop over its average 15-year lifespan.

Omission of NO₂ emissions and associated health risks

19. Gas cooktops emit NO₂ during combustion. Cooking with gas cooktops results in acute indoor NO₂ concentrations that are harmful to health, particularly for children under 18, and older adults.⁸ A review published by the World Health Organisation in 2010 concluded that NO₂ in the indoor environment is consistently associated with respiratory symptoms, airway narrowing, airway inflammation and decreases in immune function

⁵ Lebel et al, p.2529.

⁶ Lebel et al, p.2534.

⁷ AMEO, Open NEM (accessed 5 February 2025): [Open Electricity: NEM](#)

⁸ Daouda et al, Out of Gas, In with Justice: Findings from a gas-to-induction pilot in low income housing NYC, Energy Research and Social Science, vol 116 (October 2024) p.5 available at [Out of Gas Report](#).

which can lead to increased susceptibility to respiratory infection in infants, children and adults.⁹

20. A study of the health impacts associated with indoor NO₂ exposure related to gas cooking in the EU and the UK was conducted by researchers at Jaume I University and the University of Valencia in 2024.¹⁰ The study found that 40,939 estimated paediatric asthma cases were due to exposure to NO₂ from gas cooking in the EU and UK combined.¹¹ It also estimated the total number of premature deaths associated with NO₂ emissions from gas cooktops in the EU and UK at 39,959.¹²
21. The study compared indoor levels of NO₂ where homes use electric cooktops with those that use gas cooktops. It found that the estimated NO₂ concentrations in households that use gas appliances for cooking are higher than NO₂ concentrations outdoors, whereas indoor NO₂ concentrations in households that use electric appliances are lower than outdoor NO₂ concentrations.¹³ Furthermore, indoor concentrations of NO₂ in households that use gas cooktops were higher than the 2021 WHO annual NO₂ Air Quality guideline in 14 countries. By contrast, indoor NO₂ concentrations did not exceed WHO guidelines in households that use electric cooktops.¹⁴
22. Our client is concerned that Claim 1 may be misleading or deceptive by omitting information in relation to NO₂ emissions and the associated health risks. The omission creates the impression that gas cooktops have no effect on the environment (where “environment” means people and/or the community in this context) in circumstances where there is a significant body of research that links gas cooktops with respiratory and other diseases.

Omission of induction cooktops

23. Claim 1 does not include the emissions associated with induction cooktops in its comparison of different types of cooktops. Induction cooktops are a newer type of electric cooktop which work by generating heat electromagnetically. Induction cooktops heat using electromagnetism making them more energy efficient than gas cooktops. Induction transfers approximately 85% efficiency whereas gas cooktops operate at an efficiency of approximately 32%.¹⁵ According to the Victorian Department of Energy, Environment and Climate Action, induction cooktops are “around 3 times more efficient than gas cooktops, driving down bills and emissions”.¹⁶

⁹ WHO, WHO Guidelines for Indoor Air Quality: Selected Pollutants. Geneva: World Health Organization; 2010, available at: <https://www.ncbi.nlm.nih.gov/books/NBK138705/>

¹⁰ Juana Maria Delgado-Saborit et al, (2024), *Assessment of the health impacts and costs associated with indoor nitrogen dioxide exposure related to gas cooking in the European Union and the United Kingdom* (Delago-Saborit et al) [Assessment of the health impacts and costs associated with indoor nitrogen dioxide exposure related to gas cooking in the European Union and the United Kingdom](#)

¹¹ Delgado-Saborit et al, p.54.

¹² Delgado-Saborit et al, p.47.

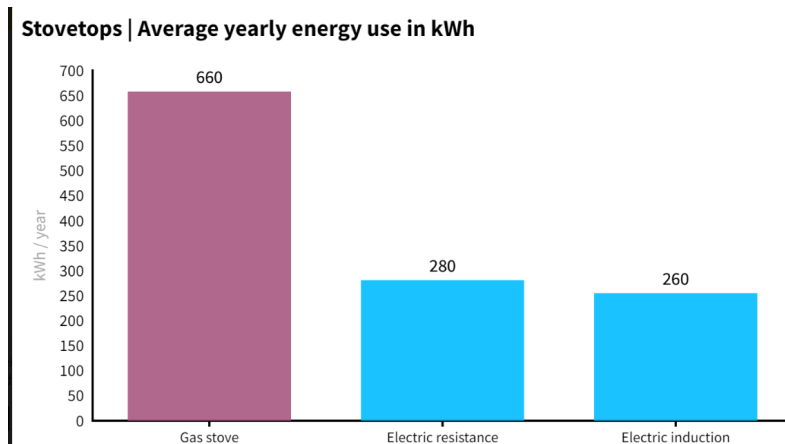
¹³ Delgado-Saborit et al, p.45.

¹⁴ Delgado-Saborit et al, p.46.

¹⁵ CHOICE, [What to consider when switching from gas to induction | CHOICE](#)

¹⁶ Department of Energy, Environment and Climate Action, [Induction cooktop discounts](#)

24. According to Rewiring Australia, gas cooktops use 660 kWh of energy per annum while electric induction use 260 kWh per annum.¹⁷



25. Our client is concerned that Claim 1 may be misleading or deceptive by failing to include induction cooktops in the comparison between types of cooktops. By cherry-picking grid-powered electric coil and plate cooktops and comparing gas cooktops with them, Claim 1 creates the impression that gas cooktops are the most energy efficient type of cooktop when in fact induction tops are significantly more energy efficient. Given the correlation between energy efficiency and emissions (i.e. high energy efficiency translates to low emissions), our client considers that Claim 1 should include information in relation to the emissions associated with induction cooktops.

Claim 2 – omission of NO₂ and associated health impacts as a factor to consider

26. The first statement in the Post is as follows:

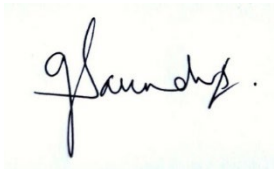
When choosing a cooktop, there are several factors to consider, including purchase and installation cost, energy use and emissions, and reliability. Below are some factors to consider.

(Claim 2)

27. In light of [16]-[19] above, our client considers that NO₂ emissions and the associated health risks are important factors that the reader should and would consider, if known, when choosing a cooktop. As such, there is insufficient disclosure of the negative impacts of gas cooktops which, if known to the reader, would diminish any of the purported positive attributes. Our client is concerned that Claim 2 may be misleading or deceptive in breach of s 1.1 and 2.2 of the Code by omitting NO₂ as a factor.
28. If you have any questions relating to this complaint, please contact Clare Saunders at clare.saunders@edo.org.au.

¹⁷ [Rewiring Australia](#)

Yours sincerely
Environmental Defenders Office

A handwritten signature in black ink on a light-colored background. The signature is written in a cursive style and reads "Clare Saunders".

Clare Saunders
Solicitor
Corporate and Commercial


Annexure A

LinkedIn as at 30/01/2025

 Australian Gas Infrastructure Group (AGIG) + Follow ...
14,705 followers
2w • 

When choosing a cooktop, there are several factors to consider, including purchase and installation cost, energy use and emissions, and reliability. Below are some factors to consider.

Purchase and Installation Costs:

- The mixed gas and induction cooktop is the most expensive to purchase and install, with a price tag of about \$5,499**
- Switching from gas to electric cooking can require additional expenses such as a kitchen wiring upgrade (typically costing between \$1,000 and \$4,000) not to mention the purchase of new pots and pans compatible with induction cooking 

Energy Costs and Emissions in Victoria

- Gas cooktops have the lowest annual energy cost (average \$18) and the lowest emissions (average 32 kg CO₂-e) compared with electric grid-powered cooktops.
- Conversely, electric coil or plate cooktops powered by the electricity grid are the most expensive to operate, with an annual energy cost of about \$47 and average emissions of approximately 146 kg CO₂-e.

Reliability During Blackouts:

- Gas cooktops and mixed gas and induction cooktops are the only types that remain functional during a blackout. This is a significant advantage for households concerned about power outages.

*<https://lnkd.in/gQMavxBz>

**<https://lnkd.in/g5Cce2Mi>

 <https://lnkd.in/gf56s2Ge>

 <https://lnkd.in/gqwf8R7> <https://lnkd.in/ehZFEVk>

In Victoria, gas cooktops have the lowest annual energy cost (\$18) and lowest annual emissions (32 kg CO₂-e).*

In contrast, electric coil or plate cooktops have the highest energy cost (\$47) and emissions (146 kg CO₂-e).



Gas stovetop lowest cost and lowest emissions