Case Report

1. Case Number :	**0058-25**
2. Advertiser :	**Australian Gas Networks**
3. Product :	**Energy/Resources**
4. Type of Advertisement/Media :	**Internet - Social - Other**
5. Date of Decision:	**5-Mar-2025**
6. Decision:	**Upheld – Modified or Discontinued**

ISSUES RAISED

AANA Environmental Code\1 Truthful and Factual
AANA Environmental Code\2 Genuine Environmental Benefit
AANA Environmental Code\3 Substantiation

DESCRIPTION OF ADVERTISEMENT

This LinkedIn advertisement features a cartoon image of a gas cooktop and the words "In Victoria, gas cooktops have the lowest annual energy cost ($18) and lowest annual emissions (32kg 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.

The text accompanying the image begins, "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."

THE COMPLAINT

Comments which the complainant/s made regarding this advertisement included the following:

Our client request that Ads Standards investigate whether statements made by the Australian Gas Infrastructure Group (AGIG) on an advertisement in a LinkedIn Post 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). Please see below complaint.

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."

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: 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)
Why the claim is potentially misleading:
- No evidence is provided to substantiate the claim contrary to s 3.1 of the Code.

- Methane emissions are apparently excluded from the figure provided for gas cooktops contrary to s 1.1 of the Code.
- Emissions data where electricity is supplied by renewable energy is omitted contrary to s 1.1 of the Code.
- Nitrogen oxide (NO) emissions and associated health risks are not included contrary to s 1.1 of the Code.
- Emissions associated with induction cooktops are not included contrary to s 1.1 of the Code.
Claim: 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.
Why the claim is potentially misleading:
NO2 emissions and the associated health risks are omitted as a factor to consider contrary to s 2.2 of the Code.
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;
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]
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 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]

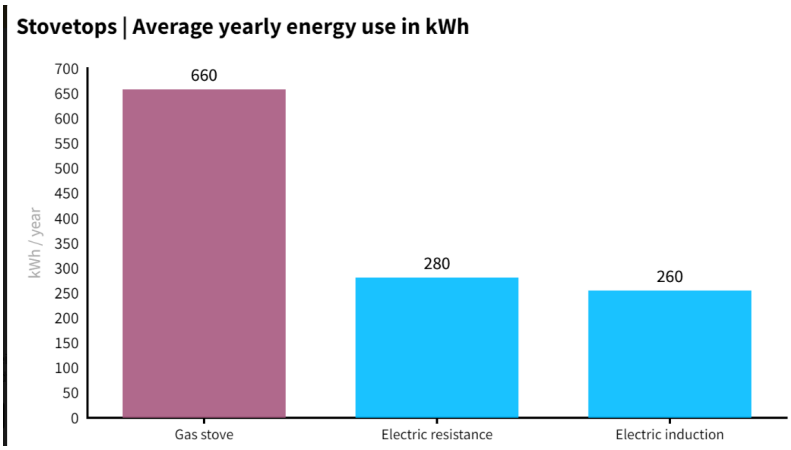
21. The study compared indoor levels of NO2 where homes use electric cooktops with those that use gas cooktops. It found that the estimated NO2 concentrations in households that use gas appliances for cooking are higher than NO2 concentrations outdoors, whereas indoor NO2 concentrations in households 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]

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.

[1] AGIG, LinkedIn Post: https://www.linkedin.com/posts/agig_gas-stovetop-lowest-cost-and-lowest-emissions-activity-7285035718454714368-Xj07/?utm_source=share&utm_medium=member_desktop&rcm=ACoAADGbpzsBZD3nE_SPYBOl4T-joMk8HIOt5bo
[2] AGIG, Who We Are | Australian Gas Infrastructure Group | AGIG https://www.agig.com.au/who-we-are (accessed 29/01/25).
[3] E.D. Lebel et al, Methane and N0x 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 NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes | Environmental Science & Technology https://pubs.acs.org/doi/10.1021/acs.est.1c04707; ABC (27 January 2022) Cooking with gas? Research finds health and emission risks even when stoves are off - ABC News https://www.abc.net.au/news/science/2022-01-27/gas-cooker-methane-leak-climate-change-asthma/100777076; The Guardian (15 January 2023) Are gas stoves really dangerous? What we know about the science | Air pollution | The Guardian https://www.theguardian.com/environment/2023/jan/15/gas-stoves-pollution-alternatives
[4] Lebel et al, p.2529.
[5] Lebel et al, p.2529.
[6] Lebel et al, p.2534.
[7] AMEO, Open NEM (accessed 5 February 2025): Open Electricity: NEM https://explore.openelectricity.org.au/energy/nem/?range=7d&interval=30m&view=discrete-time&group=Detailed
[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 https://www.weact.org/wp-content/uploads/2023/02/Out-of-Gas-Report-FINAL.pdf
[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 explore 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 explore related to gas cooking in the European Union and the United Kingdom https://repositori.uji.es/server/api/core/bitstreams/ddfd7cb7-32b6-4745-a628-0792f94f8a87/content

[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 https://www.choice.com.au/home-and-living/kitchen/cooktops/articles/switching-from-gas-to-induction
[16] Department of Energy, Environment and Climate Action, Induction cooktop discounts https://www.energy.vic.gov.au/victorian-energy-upgrades/products/induction-cooktop-discounts#:~:text=Induction%20cooktops%3A,growing%20range%20of%20professional%20chefs
[17] Rewiring Australia https://www.rewiringaustralia.org/

THE ADVERTISER'S RESPONSE

Comments which the advertiser made in response to the complainant/s regarding this advertisement include the following:

Thank you for notifying Australian Gas Networks Limited (AGN) of the above complaint and for providing the opportunity to respond. AGN is part of Australian Gas Infrastructure Group which takes its obligations under advertising standards and the Australian Consumer Law (ACL) seriously. We always strive to ensure that the relevant guidelines are followed, in particular the Environmental Claims Code, as well as the ACL.

DESCRIPTION OF ADVERTISEMENT

The complaint relates to an organic social post on 30 January 2025 to our Australian Gas Infrastructure Group LinkedIn page.

The complaint specifically refers to the post text and accompanying visual which state:

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

The accompanying visual shows a gas cooktop with the text:

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

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

As LinkedIn shortens URL links, we have copied these out for easy reference

**https://lnkd.in/gQMaVxBz = Australian National Green House Factors – www.dcceew.gov.au/sites/default/files/document/national-greenhouse-account-factors-2024.pdf*
***https://lnkd.in/g5Cce2Mi = https://www.appliancesonline.com.au/category/cooking*
https://lnkd.in/gf56s2Ge = https://energyfithomes.com.au
https://lnkd.in/gqwf8R7 https://lnkd.in/ehZFEVk = https://compare.energy.vic.gov.au and https://www.energymadeeasy.gov.au/

A copy of the social post is attached.

DESCRIPTION OF THE COMPLAINT

In the complaint, the complainant sets out its reasons for concerns on the following two claims:

Claim 1: The line "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)"

"12. Our client considers that Claim 1 is potentially misleading in the following five respects:

- *it is not substantiated;*
- *it is not clear whether it accounts for methane (CH4) emissions associated with gas cooktops;*
- *it does not include emissions data in relation to renewable energy sources;*
- *it does not disclose NO2 emissions and the associated health risks; and*
- *it does not include emissions associated with induction cooktops which are significantly more energy efficient than older electric coil or plate cooktops."*

Claim 2: The line "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"

"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…"

Ad Standards has assessed this case as raising the following issues under the AANA Environmental Claims Code:

Section 1 Truthful and Factual Presentation (a) not misleading or deceptive

Section 2 Genuine Environmental Benefit (b) not overstate claims

Section 3 Substantiation (a) claims able to be substantiated and verifiable.

Our response addresses the AANA Environmental Claims Code, which the complaint has initially been assessed against by Ad Standards, and also all sections of the Advertiser Code of Ethics which the Community Panel will also consider.

RESPONSE TO COMPLAINT RECEIVED

AANA Environmental Claims Code for Advertising and Marketing
Section 1. Truthful and Factual Presentation.

Environmental Claims in Advertising or Marketing Communication:

a) shall not be misleading or deceptive or be likely to mislead or deceive;

These statements made in the social post are true and accurate, and the advertisement as a whole is not misleading or deceptive, or likely to be misleading or deceptive because:

The advert made clear the attributes (costs and carbon emissions) it was comparing, including where the source data could be reviewed.

The lead headline "In Victoria, gas cooktops have the lowest annual energy cost ($18) and lower annual emissions (32 kg CO2-e)." includes an asterisk next to it which links to The Department of Climate Change, Energy, Environment and Water's latest calculations for estimating greenhouse gas emissions: Australian National Greenhouse Accounts Factors. The data that underpins this social post was calculated from this document.*

The calculated and stated emissions in the post do account for methane emissions (CH4). The energy efficiency of stove tops is measured as the amount of gas or electricity used to heat 1 Litre of water to 95 degrees Celsius, in accordance with the European Ecodesign Regulation (EU) No 66/2014 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014R0066), specifically test methods EN 60350-2 and EN 30-2-1. The test method which our numbers are based on (EN 30-2-1) includes unburnt gas during operation and the emissions factor includes unburnt gas when combusting methane (CH4). https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2024.pdf (Table 5).

Furthermore, methane emissions have not been omitted or underrepresented as there is no evidence that the methane emissions referenced in the complaint is relevant to Australian stovetops. Australian stovetops are made to high energy efficiency standards which are not in place in the USA. The study the complaint referenced on methane emissions is from 53 stoves measured in the United States of America (USA). Stove top energy efficiency is not regulated in the USA, however stove top energy efficiency is regulated in Europe and Australia. This is based on information received from our external consultant, whereby Australia receives most of its products from Europe and Australian manufacturers report to meet this standard.

If a stovetop leaks unburnt gas during operation, gas will be consumed but will not produce heat, lowering the energy efficiency. Given Australian stovetops are more energy efficient than USA stovetops, the gas leakage should be less, and therefore the study provided by the complainant is not reflective of Australian gas stoves.

As for the leakage when the stovetop is not in use, which the complaint suggests makes up 75% of methane losses "when the cooktop is not in use due to leakage from pipes and connections to the cooktop" which is based on studies in the USA, and is not measured by the EU test methods. There is no evidence to suggest Australian stovetops have the 'stand-by' methane emissions losses of stove tops in the USA.

From our application of the calculations referred above, if Australian stove tops did have the same level of stand-by methane losses, electric stoves would still have higher emissions (calculated on a like-for-like basis including stand-by electricity) than stand-by gas. When calculating the increase in stand-by emissions, for gas cooking the emissions per year increases from 32 to 35.5 kg of CO2 per year but electric stoves increase from 146 to 155 kg of CO2 per year.

This is calculated by:

emissions from burnt gas – 51.53 kg/GJ (Table 5: https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2024.pdf)

energy density of unburnt gas 20 kg/GJ (https://hypertextbook.com/facts/2004/BillyWan.shtml)

Global Warming Potential of methane according to the International Panel on Climate Change 29.8 (https://ghgprotocol.org/sites/default/files/2024-08/Global-Warming-Potential-Values%20(August%202024).pdf)

Percentage of unburnt gas that is stand-by according to the USA study – 75%

Percentage of gas that is unburnt overall – 1.3%

(20 x 29.8 x 0.75 x 0.013)/51.53 = 11%

Therefore, if stand-by gas was included, the emissions for a gas stove would increase from 32 kg CO2e per year to 32 + 32 x 0.11 = 35.53 kg CO2e per year.

However, it is important to compare gas and electric stovetops on a like for like basis, so if stand-by gas is included for gas, stand-by electricity also needs to be included for electric stove tops including induction. A 2023 USA Government study found that stand-by electricity of an induction cooktops consume 12 kilo watts per year, on average (https://www.regulations.gov/document/EERE-2014-BT-STD-0005-10090).
Using the 2024 emissions factor for Victoria, as reported by the Department of Climate Change, Energy, the Environment and Water (https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2024.pdf). Table 1, 0.77 kg CO2e is produced per kWh of electricity consumed

12 kWh x 0.77 = 9.3 kg per year.

So, if stand-by gas is included in the calculation for gas cooking the emissions per year increases from 32 to 35.5 kg of CO2 per year but electric stoves increase from 146 to 155 kg of CO2 per year (146+9).

The data on stand-by gas and electricity for cooktops in Australia is not as strong as the data on consumption during operation, therefore only operation emissions are reported, however, if stand-by energy is included, it would likely increase the emissions from electric cooking significantly and therefore the message in our post, that gas cooking produces less emissions than electric cooking is still valid.

Emissions data supplied by renewable energy was included.

The claim that renewable electricity was not considered is incorrect. The 2023 National Greenhouse Account Factors were used to reflect the emissions produced when using electricity at the home and considered renewable electricity. The 2024 National Greenhouse Account Factors were not available when the calculation was undertaken, although the change was not significant.

The emissions factor for Electricity consumed in Victoria is 0.79 kg CO2 per kWh in 2023 (table 1) (https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2023.pdf) and 0.77 in 2024. Our post did not include scope 3 emissions for electricity, which would increase the emissions from electric cooking. Including scope 3 emissions would further support the comparison in our post. The information presented is conservative and does not overstate the benefits to gas.

These emissions factors stated above include all the renewable energy built in the electricity grid including wind, solar farms, hydro, batteries, etc. Further, it is important to note that most cooktop use occurs during the evening when grid level solar is not producing electricity, and gas peaking plants need to be engaged. This means that the emissions intensity of electric cooking is actually higher than the average for the year which is reported in the National Accounts. However, given the complexity, basing the emissions for electricity on the National Accounts was considered appropriate and is a conservative approach.

For the same reasons outlined above, we consider direct renewable electricity sources such as roof top solar does not significantly reduce the emissions intensity of electric cooking. Roof top solar combined with batteries is often given as an example of a system that allows people to cook using induction cooktops, as being emissions-free, however, when a battery supports electric cooking, the battery is drained faster and is therefore not available to supply electricity through the night to the rest of the home. We consider that while the emissions from cooking is technically reduced, it increases the emissions produced to power for example the heater or the refrigerator overnight. Overall, the emissions produced to power the home is not reduced when electric cooking is added to a home that already has solar PV and a battery.

Nitrous oxide (N2O) was included

The complaint refers to "nitrogen oxide (NO)" and "NO2". Nitrous oxide (N2O) is relevant from an emissions perspective and is included in our calculations. See Table 5, column 5 of the linked document to the post (https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2024.pdf)

Nitric oxide and nitrogen dioxide is often discussed in the context of health and is addressed separately below.

Not specifically referencing health risks associated with nitric oxide and nitrogen dioxide is not misleading and deceptive

We assume the complaint refers to nitric oxide (NO) – (it is referred to in the complaint as "nitrogen oxide" which is not a real molecule) and then uses the chemical formula NO2 which is nitrogen dioxide. Nitric oxide oxidises to nitrogen dioxide in air and NO2 is typically associated with health risks.

For the reasons set out below, we do not consider there is proven evidence of such health risks in Australia and it was not considered relevant or appropriate to refer to such potential risks in the circumstances.

The main health risk that is put forward in Australia is the increase in symptoms of childhood asthma. Such claims often suggest gas stove use is estimated to cause 12% of childhood asthma (https://www1.racgp.org.au/ajgp/2022/december/health-risks-from-indoor-gas-appliances). However, the 12% is an extrapolation of previous meta studies (https://academic.oup.com/ije/article-abstract/42/6/1724/737113?redirectedFrom=fulltext&login=false) that are not reflective of Australian homes, Australian cooking, or new energy efficiency standards (as above). The new energy efficiency standards were put in place in 2015 and increased in 2017 and 2019 which may change the temperature of the flame during combustion which changes the ratio of NO to NO2, which means the NO may be extracted before it oxidises into NO2.

For example, there is no evidence that people who run their extractor fan when cooking are exposed to higher NO2 levels. (https://www.ncbi.nlm.nih.gov/books/NBK138707/). This is an important point, because there are zero studies that show any link between asthma and gas cooking in Australia, only extrapolation from other contexts and Australians use extraction fans.

A study in 2023 found "In contrast to Gruenwald et al. and Lin et al., Phase 3 of the International Study of Asthma and Allergies in Childhood (ISAAC) found that for a cohort

of 512,707 primary and secondary school children from 47 countries there was 'no evidence of an association between the use of gas as a cooking fuel and either asthma symptoms or asthma diagnosis.'" (https://cbia.org/wp-content/uploads/2023/03/ANALYSIS-Effects-of-Cooking-on-Indoor-Air-Quality-3.2.2023.pdf)
Including an induction cooktop would not have changed the overall output.

The advert made clear it was comparing the highest cost verses emissions output with the words "compared with electric-grid powered cooktops" which was intended to include induction cooktops. An average consumer would understand induction cooktops to be electrical. However, even if the post explicitly called out a comparison with induction, overall the conclusions reached would not have changed. This is because the difference between different types of electric cooking is irrelevant, in comparison to the emissions difference between gas and any electric cooking.

No electric cooktop is allowed to be sold in the European Union (noting they are the same cooktops being sold in Australia and Australia is currently aiming to make the standard enforced by law) if it consumes more energy than 195 Wh/kg (https://commission.europa.eu/system/files/2018-09/implementation_guidelines_cooking_appliances.pdf) Page 7. The absolute, most efficient induction cooktop uses 170 Wh / kg (https://www.topten.eu/private/products/induction_hobs). This is only 13% less than the maximum limit.

Finally, the difference between the worst performing electric cooktop of any type, and the most energy efficient induction cooktop in the world is only 13%. Many induction cooktops are only 1% more energy efficient than basic electric cooktops (see Miele KM 6093ED in the top-ten database).

In response to the complaint and as set out in the above paragraphs:

The source of the calculations was clearly provided within the central part of the social post;
The calculations included methane emissions;

The calculations included renewable energy;

Potential health risks of gas cooktops in Australia are not proven and it was not necessary or appropriate to refer to such claims;

Not including an induction cooktop in the comparison meant the results were conservative and not misleading or deceptive in any way; and

The advertisement is factually correct and accurate. Accordingly, we do not consider that the advert is in any way misleading or deceptive or likely to mislead or deceive.

b) shall display any disclaimers or important limitations and qualifications prominently, in clear, plain and specific language

As stated in Section 1 a) the lead headline of the post "In Victoria, gas cooktops have the lowest annual energy cost ($18) and lower annual emissions (32 kg CO2-e). includes an asterisk next to it which links to The Department of Climate Change, Energy, Environment and Water's latest calculations for estimating greenhouse gas emissions Australian National Greenhouse Accounts Factors. The emissions data that underpins this social post was calculated from this document from an independent external consultant. The energy calculations were undertaken by experts, energyFit who design home energy systems and provide advice to individual households on how to electrify, reduce emissions and reduce energy costs. energyFit's models have been used by the Australian Renewable Energy Agency, the Commonwealth Department of Climate Change, Energy, the Environment and Water, the NSW Department of Climate Change, Energy, the Environment and Water, and renewable energy Industry Associations to develop government policy.*

Furthermore, links to additional comparison websites and appliance comparison stores have also been provided if those viewing the post wished to validate the figures for themselves.

c) shall represent the attributes or extent of the environmental benefits or limitations as they relate to a particular aspect of a product or service in a manner that can be clearly understood by the consumer.

For the reasons set out in section 1 above, the advertisement is compliant with this requirement of the Code

Section 2. Genuine Benefit to the Environment.

Environmental Claims must:
a) be relevant, specific and clearly explain the significance of the claim;

For the reasons set out in section 1 above, both claims in the advertisement that the complainant has taken particular issue with made clear within the post.

The post states clearly it is comparing the annual energy cost and Carbon dioxide equivalent unit of using a gas stovetop in Victoria to the annual running cost and emission output of an electric coil or plate cooktop.

It provides points of comparison for cost, emissions and reliability while including links to substantiate the claims.

b) not overstate the claim expressly or by implication;

The emission figures provided in the claim that gas stovetops have a lower annual emission than electric ones is not an overstatement and is supported by calculations as determined by our independent external consultant provided in the Department of Climate Change, Energy, Environment and Water's National Green House Factors.

We believe that the advertisement is compliant with this section of the Code.

c) not imply that a product or service is more socially acceptable on the whole.

The advertisement does not suggest that the stated conclusions for alternative energy options are not socially acceptable. It lists "some factors for the consumer to consider" with regards to cooktops, and provides a comparison on costs and emissions which consumers would find relevant in Victoria, given there is an increasing rhetoric with regard to a "cost of living crisis".

We consider that the advertisement is compliant with this section of the Code.

Section 3. Substantiation.

Environmental Claims in Advertising or Marketing Communication:

a) shall be able to be substantiated and verifiable. Supporting information shall include sufficient detail to allow evaluation of a claim;

For the reasons set out in Section 1, all claims asserted in the advertisement are substantiated and verifiable. In particular:

That gas cooktops have less running and emissions costs compared to its electric stovetops.

All of the above substantiation is available on the references provided next to each claim, including where the emissions were calculated from (Australian National Green House Factors – www.dcceew.gov.au/sites/default/files/document/national-greenhouse-account-factors-2024.pdf) and where the costs were sourced (Energy Made Easy - www.energymadeeasy.gov.au and Welcome - Victorian Energy Compare - https://compare.energy.vic.gov.au)

All of the above also supports the notion that the figures are provided.

b) shall meet any applicable standards that apply to the benefit or advantage claimed;

We do not consider that our advertisement is subject to additional applicable standards regarding the benefit claimed.

c) containing testimonials shall reflect the genuine, informed and current opinion of the person giving the testimonial.

Our advertisement is compliant with this section of the Code of Practice as no testimonials are present in the advertisement.

AANA Code of Ethics for Advertising and Marketing

We have also addressed Section 2 of the AANA Code of Ethics for Advertising and Marketing, which relates to Consumer Complaints.

Section 2.1 Advertising or Marketing Communications shall not portray people or depict material in a way which discriminates against or vilifies a person or section of the community on account of race, ethnicity, nationality, gender, age, sexual preference, religion, disability, mental illness or political belief.

Our advertisement does not breach this section of the Advertiser Code of Ethics as it does not depict material that discriminates or vilifies a person or section of the community as identified in section 2.1.

Section 2.2 Advertising or Marketing Communications shall not employ sexual appeal:

(a) where images of Minors, or people who appear to be Minors, are used; or

(b) in a manner which is exploitative or degrading of any individual or group of people.

Our advertisement does not breach this section of the Advertiser Code of Ethics as it does not employ sexual appeal against Minors or in a manner that is exploitative or degrading to any individual or group of people as identified in section 2.2.

Section 2.3 Advertising or Marketing Communications shall not present or portray violence unless it is justifiable in the context of the product or service advertised.
Our advertisement does not breach this section of the Advertiser Code of Ethics as it does not present or portray violence as identified in section 2.3.

Section 2.4 Advertising or Marketing Communications shall treat sex, sexuality and nudity with sensitivity to the relevant audience.

Our advertisement does not breach this section of the Advertiser Code of Ethics as there is no sex, sexuality or nudity present.

Section 2.5 Advertising or Marketing Communications shall only use language which is appropriate in the circumstances (including appropriate for the relevant audience and medium). Strong or obscene language shall be avoided.

Our advertisement does not breach this section of the Advertiser Code of Ethics as there is no strong or obscene language used.
Section 2.6 Advertising or Marketing Communications shall not depict material contrary to Prevailing Community Standards on health and safety.

Our advertisement does not breach this section of the Advertiser Code of Ethics as it does not depict material contrary to Prevailing Community Standards on health and safety. As stated above in Section 1 a, our conclusions reached that studies in this area are not reflective of Australian homes, Australian Cooktop standards or energy efficiency standards used in Australia.

Section 2.7 Advertising or Marketing Communications shall be clearly distinguishable as such to the relevant audience.

Our advertisement does not breach this section of the Advertiser Code of Ethics as our advert is clearly distinguishable to its relevant audience of industry and residential households.

We trust the above response addresses any concerns regarding the advertisement and provides the Community Panel with sufficient information for their review. However, if any further information is required, please do not hesitate to contact us.

THE DECISION

The Ad Standards Community Panel (the Panel) considered whether this advertisement breaches the AANA Environmental Claims in Advertising and Marketing Code (the Environmental Code).

The Panel noted the complainant's concern that the advertisement contained misleading environmental claims.

The Panel viewed the advertisement and noted the advertiser's response.

Does the advertisement make an Environmental Claim?

The Panel considered whether the advertisement made an Environmental Claim.

The Environmental Code defines Environmental Claims as *"any express or implied representation that an aspect of a product or service as a whole, or a component or*

packaging of, or a quality relating to, a product or service, interacts with or influences (or has the capacity to interact with or influence) the Environment".

The Panel noted that the claims in relation to purchase or installation costs of gas versus electric and availability during power outages are not environmental claims and are not subject to the Code.

The Panel noted that the advertisement makes the following Environmental Claim:

- Gas cooktops have the lowest emissions (average 32kg CO2-e) compared with electric grid-powered cooktops.
- Electric coil or plate cooktops have the highest emissions (146kg CO2-e).

1 a) Environmental Claims in Advertising or Marketing Communication shall not be misleading or deceptive or be likely to mislead or deceive

The Panel noted that the Practice Note for this section of the Environmental Code includes:

"It is not intended that legal tests be applied to determine whether advertisements are misleading or deceptive, or likely to mislead or deceive, in the areas of concern to this Code. Instead, consideration will be given as to whether the average consumer in the target market would be likely to be misled or deceived by the material."

The Panel noted the advertisement was posted by the Australian Gas Infrastructure Group on LinkedIn, which has over 14,000 followers. The Panel considered that the average consumer in the target audience for this advertisement would be adults interested in information on the benefits of gas.

The Panel noted the complainant's concern that the advertisement was misleading or deceptive because:

- It excludes methane emissions from the figure provided for gas cooktops
- Emissions data where electricity is supplied by renewable energy is omitted
- Nitrogen oxide emissions and associated health risks are not included
- Emissions associated with induction cooktops are not included.

In particular, the Panel noted the complainant's concern that the advertisement does not provide the source of the emissions data, or how it was calculated and as such is potentially misleading or deceptive as it does not allow the reader to evaluate the claim.

The Panel noted the advertiser's response that:

- The source of the calculations was clearly provided within the central part of the social post.
- The calculations included methane emissions.

- The calculations included renewable energy.
- Potential health risks of gas cooktops in Australia are not proven and it was not necessary or appropriate to refer to such claims.
- Not including an induction cooktop in the comparison meant the results were conservative and not misleading or deceptive in any way.
- The advertisement is factually correct and accurate.

The Panel considered that the substantiation documents linked to by the complainant did not include the exact figures used in the social media post or detail the calculation method used by the advertiser to reach these figures.

The Panel noted that it appeared that there were multiple ways such a figure could be calculated such as using unburnt gas, stand-by electricity, induction cooktops, or whether renewable energy is included. The Panel considered that there was no transparency in the advertisement or in the referenced documents which detailed how this figure was calculated. The Panel considered that the average consumer in the target market would not have the technical knowledge to reproduce these figures, or understand the nuances which could be used to calculate emissions comparisons.

The Panel considered that if an average consumer in the target market could not easily locate the method of calculating this data, then it is like that they would be misled or deceived by the claim.

1 a) Conclusion

The Panel concluded that the advertisement did breach Section 1 a) of the Environmental Code.

Section 2 b) Environmental Claims must…not overstate the claim expressly or by implication

The Panel noted that the Practice Note for this Section includes:

> *"Advertisers and marketers should avoid making claims that expressly or impliedly overstate an environmental benefit. Consideration should be given to whether there is sufficient disclosure of any negative impacts. For example, whether negative impacts have been withheld which, if known, would diminish the positive attribute."*

The Panel noted the complainant's concern that the advertisement does not include NO2 emissions and the associated health risks.

The Panel noted the advertiser's response that not specifically referencing health risks associated with nitric oxide and nitrogen dioxide is not misleading and deceptive.

The Panel considered that both the complainant and the advertiser had provided research supporting their point of view. The Panel considered that the advertiser not including associated health risks with nitric oxide and nitrogen dioxide was not in itself overstating the Environmental Claim.

However, for the reasons provided under Section 1 a) above, the Panel considered that the advertisement could mislead consumers by not being transparent in the way the data was calculated, and that this did have the potential to overstate the claim expressly or by implication.

Section 2 b) conclusion

The Panel determined that the advertisement did breach Section 2 b) of the Environmental Claims Code.

3 a) Environmental Claims in Advertising or Marketing Communication…shall be able to be substantiated and verifiable. Supporting information shall include sufficient detail to allow evaluation of a claim.

The Panel noted that the Practice Note for this Section includes:

> *"Advertisers and marketers should have a reasonable basis for making a claim and therefore should hold appropriate, balanced, comprehensive and credible evidence to substantiate all express and implied claims. Information to support a claim may include, but is not limited to, documentary evidence or data evidencing conformity with an identified standard, research, studies, or an expert independent audit. There is no requirement to use third party verification or certification before an environmental claim is made. An advertiser's own internal procedures may be able to provide the necessary substantiation.*
>
> *In testing the validity of any claim the Community Panel will only rely on information/material provided by the advertiser and the complainant. It is not the intent for the Community Panel to act as an arbiter of scientific fact, or of philosophical approaches to understanding or addressing environmental concerns."*

The Panel noted the complainant's concern that the advertiser did not provide substantiation for the claim that gas cooktops have the lowest average emissions per annum compared with electric coil or plate grid-powered cooktops.

The Panel noted the advertiser's response detailing the method of calculation and the source documents. The Panel considered that the information provided by the advertiser was difficult to understand and required locating values in different source documents to

complete the calculations, which also required understanding the parameters which were used to select these values.

Consistent with the discussion under Section 1a, the Panel considered that the Environmental Claims in the advertisement were not substantiated and verifiable and did not include sufficient detail to allow evaluation of the claim.

3 a) conclusion
The Panel determined that the advertisement did breach Section 3 a) of the Environmental Code.

Conclusion

Finding that the advertisement breached Section 1a, 2b and 3a of the Environmental Code the Panel upheld the complaint.

THE ADVERTISER'S RESPONSE TO DECISION

Thank you for letter dated 17 March 2025 notifying Australian Gas Networks Limited (AGN) of the outcome of the Community Panel's decision.

As identified in our response to the complaint, we do not consider the post to be misleading or deceiving and stand by the accuracy of the information provided.

We note that figures relating to appliances, emissions and costs need to take into account a variety of factors that unfortunately are not available in a single source and often require analysis to provide customers with easily understandable information.

Having said that, we confirm that we have removed the post from the platform. We appreciate the time and effort that went into this review.