28 February 2025

Victorian Building Electrification Regulatory Impact Statement (RIS)

Gas Energy Australia (GEA) represents Australia's liquid gas supply chains including Liquefied Petroleum Gas (LPG) and associated gases. Our members span from producers to retailers and everything in between. The LPG industry safely and securely supplies 43PJpa of energy to industrial, commercial and residential consumers nation-wide, including around 30% of regional households where electricity can be unreliable or unavailable[1].

GEA welcomes the opportunity to comment on the Victorian Department of Energy, Environment and Climate Action (DEECA) Building Electrification Regulatory Impact Statement (the **RIS**).

GEA is encouraged by the Victorian Government recognising that LPG is different to natural gas. LPG plays a vital role supplying energy to Victorian industrial, commercial, residential, transport and recreational energy users today. Through the supply of drop-in renewable forms of LPG, Victorian energy consumers can continue to receive reliable, affordable energy via LPG while supporting emissions reduction targets[2].

General Feedback

Excluding LPG from RIS conversion options risks incorrect conclusions

The RIS does not analyse converting natural gas use to LPG use in cost-benefit analysis. This risks the RIS concluding in favour of electrification where analysis may find better customer outcomes if provided residential and commercial LPG options.

Gas supply crisis solution – there is no shortage of LPG

Victoria produces 3x the LPG it consumes. LPG import is cost effective, and it is simpler to convert existing LPG export terminals to import than create new LNG facilities.

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[1] DCCEEW, 2024, Australian Energy Update 2024, https://www.energy.gov.au/publications/australian-energy-update-2024
Australian Bureau of Statistics, 2014, Environmental Issues: Energy Use and Conservation, https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4602.0.55.001Main+Features1Mar%202014?OpenDocument

[2] Frontier Economics, 2023, *Pathways to Zero Emissions for LPG*, https://www.gasenergyaus.au/get/2016/pathway-zero-emissions-for-lpg-frontier.pdf

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We agree – LPG will be cheaper for some, only option for others

Combined appliance and energy cost analysis shows that on average, residential LPG use is cheaper than electrification. The half of Victorians sitting above upfront average electrification cost would be better off moving from natural gas to LPG. LPG use is also critical for a range of regional Victorians where electricity is unreliable or unavailable.

LPG today, renewable forms of LPG tomorrow

Just like electricity and gas, LPG also has renewable alternatives. Drop-in BioLPG and Renewable LPG (rLPG) require no changes to use in LPG appliances. Minor changes to convert natural gas appliances are readily available and cost less than electrification.

Ban policy is bad policy for customers and economy

Blanket ban policy is being abandoned globally. Bans always leave someone behind and reduce investment confidence across an economy – something the Victorian State budget cannot afford. Policy like Victoria's Renewable Gas Guarantee is more effective at decarbonising fossil fuel customers as proven through the Renewable Energy Target.

Recommendations:

1. Repeat RIS analysis introducing options for lower cost natural gas to LPG transition.
2. Explore redirecting LPG exports to cover potential Victorian gas shortfalls and converting LPG export terminals to LPG import terminals.
3. Move from bad ban policy to 'target' or 'guarantee' policy to incentivise renewable energy investment and purchase by residential and commercial energy consumers.

LPG has the potential to contribute significantly to Victoria's energy landscape, especially in regions where electrification may be impractical or costly. By working together, we can develop policies that support not only emissions reduction but also the energy and economic needs of all Victorians.

The ineffective pursuit of decarbonisation risks losing public support for the energy transition. As genuine supporters of a transition to net zero emissions, GEA implores the Victorian Government to implement effective decarbonisation policy.

Thank you for considering our submission. We look forward to continued discussions on this important matter.

To discuss any of the above feedback further, please contact me on +61 422 057 856 or via jmccollum@gasenergyaus.au.

Yours sincerely,

JORDAN MCCOLLUM
Chief Executive Officer
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The Role of LPG in Victoria's Energy Landscape

Liquefied Petroleum Gas (LPG) plays a vital role in Australia's energy security and net zero transition. As a versatile energy source with drop-in renewable alternatives, LPG provides essential energy services to millions of Australians, particularly in regional and remote areas where it serves over 1 in 5 households[3]. The LPG industry safely and securely supplies 12 petajoules of energy annually across industrial, commercial, and residential sectors[4]. A further 23 petajoules of LPG is exported from Victoria, with the sector contributing almost $1bn of GSP and 5,000 FTE to the State economy as a whole[5].

LPG stands out as a cleaner alternative to many traditional fossil fuels, producing 14% fewer greenhouse gas emissions than diesel[6]. The industry is actively embracing Australia's transition to net zero through the pursuit of renewable forms of LPG[7]. These include bioLPG (a co-product of Sustainable Aviation Fuel) and renewable LPG (rLPG) produced from hydrogen. These alternatives reduce scope 1 emissions by 99% while utilizing existing infrastructure and appliances.

One of LPG's most significant advantages is its superior energy storage capability in cheap, transportable LPG tanks. This is key in regional areas where mains power may be unreliable or unavailable. A standard residential LPG tank installation provides energy storage equivalent to more than 42 Tesla Powerwall 3 home battery systems at around one-tenth the cost[8]. This storage capacity, combined with the portability of LPG tanks, makes it an invaluable resource for energy security and emergency resilience.

The LPG industry is uniquely positioned to support Australia's energy transition without requiring government funding or subsidies. As the nation moves toward net zero emissions, renewable forms of LPG complement renewable electricity, offering a practical decarbonisation pathway for applications where electrification may not be feasible or cost-effective. By recognizing and supporting the development of renewable forms of LPG, Australia can ensure a diverse and resilient energy mix that retains energy security while achieving its climate goals.

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[3] Australian Bureau of Statistics, 2014, *Environmental Issues: Energy Use and Conservation*, https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4602.0.55.001Main+Features1Mar%202014

[4] Australian Federal Department of Climate Change, Energy, the Environment and Water, 2024, *Australian Energy Update 2024*, https://www.energy.gov.au/publications/australian-energy-update-2024

[5] ACIL Allen, 2022, *Economic contribution of the Australian gas economy in 2020-21*, https://www.gasenergyaus.au/get/2123/economic-contribution-of-australian-gas-economy.pdf

[6] Australian Federal Government, *2024, National Greenhouse and Energy Reporting (Measurement) Determination 2008*, https://www.legislation.gov.au/F2008L02309/latest/text

[7] Frontier Economics, 2023, *Pathways to Zero Emissions for LPG*, https://www.gasenergyaus.au/get/2016/pathway-zero-emissions-for-lpg-frontier.pdf

[8] Elgas, 2025, *LPG Gas Bottle Sizes*, https://www.elgas.com.au/elgas-knowledge-hub/residential-lpg/lpg-gas-bottle-sizes-gas-bottle-dimension-measurements/

Detailed feedback

Excluding LPG from RIS conversion options risks incorrect conclusions

Excluding LPG as a potential solution in RIS analysis risks skewed outcomes, potentially leading to an undue preference for electrification by failing to accurately reflect the lowest-cost natural gas replacement pathway – LPG.

The Options Design section of the RIS states:

The focus of the options is on replacing gas appliances connected to reticulated gas. Therefore, the analysis excludes bottled and reticulated LPG usage. – RIS Page 55

Unfortunately, it seems the RIS excludes LPG from the solution space as well. GEA can find no evidence that the RIS analysed conversions from natural gas to LPG appliances as part of cost-benefit analysis. However, there is evidence of potentially lower-cost transitions to LPG not being considered in the assessment, including the choice to electrify barbecues connected to the reticulated gas network

…barbecues connected to the reticulated gas network would be required to electrify – RIS Page 58

As noted in following key points, transitioning from natural gas to LPG is cheaper for many residential and commercial customers, and there is no shortage of LPG in Victoria. Not allowing the RIS to select LPG as an option for natural gas replacement risks the RIS incorrectly concluding that electrification is the best option for the State, its residents and its businesses.

Use LPG supply to reduce gas supply shortfall risk

There is no shortage of LPG. Victoria and Australia both produce three times as much LPG as consumed in State or domestically. Regions of Australia without domestic LPG supply are already supplied through LPG imports today, with NSW a prime example. The option of LPG import is readily available to Victoria as ports already exist for LPG export and are easily converted to facilitate LPG import.

Most natural gas use costs less to convert to LPG use than to electrify. Redirecting Victoria's existing LPG exports internally would help to reduce the States reliance on natural gas supply and coal fired generation. Victorians LPG supply is lower emission than the coal-dependant Victorian grid today. LPG compliments residential and commercial electrification, and as LPG supply decarbonises, can continue to be used by Victorian residential and commercial customers well into a net zero future.

LPG will be cheaper than electrification for many; only choice for some

The Victorian Government has excluded LPG from the gas ban proposed within the RIS:

The exclusion of LPG will allow an alternative where electrification may be more complex or costly, including remote and regional areas. – RIS Page 13

GEA agrees that LPG will be cheaper for a wide range of Victorian residential and commercial gas customers than electrifying their natural gas use. More than just a cheaper choice for some, many regional Victorian households and businesses rely on bottled LPG where electricity supply is unreliable or unavailable.

A case study of combined energy appliance and bill costs for Victorian residential customers shows that converting to LPG would be marginally cheaper than electrification assuming average appliance costs in line with RIS analysis[9]. This indicates that the half of Victorian households experiencing above-average electric appliance costs would be economically better off transitioning to LPG than electrifying natural gas. Similar outcomes are found across a range of commercial natural gas applications.

LPG today, renewable forms of LPG tomorrow

The LPG industry is actively pursuing Victorian and Australian net zero targets through the development and adoption of renewable forms of LPG. BioLPG, a co-product of Sustainable Aviation Fuel (SAF) and Renewable Diesel, and renewable LPG (rLPG), derived from hydrogen, offer the potential to reduce scope 1 emissions by up to 99%. Crucially, these renewable forms of LPG can be seamlessly integrated into existing infrastructure and appliances, minimizing disruption and maximizing efficiency.

One of LPG's defining strengths lies in its exceptional energy storage capabilities. The ability to store energy in cost-effective, transportable LPG tanks is particularly vital for regional areas where grid electricity may be unreliable or unavailable. A standard residential LPG tank installation provides energy storage equivalent to over 42 Tesla Powerwall 3 home battery systems, at approximately one-tenth of the cost. This significant energy storage, coupled with the portability of LPG tanks, positions LPG as a critical asset for energy security and emergency resilience.

By recognizing and supporting the development of renewable forms of LPG, Victoria can ensure a diversified and robust energy portfolio that maintains energy security while achieving its ambitious climate goals. Renewable forms of LPG complement renewable electricity, offering a practical decarbonization pathway for applications where electrification is either technically challenging or economically prohibitive.

Ban policy is bad policy for customers and economy; Targets drive change

Ban policy has been seen to be an ineffective approach to natural gas decarbonisation globally. Several of the first jurisdictions to attempt gas bans in the US have had their bans overturned[10]. More recently, Energy Secretary Ed Miliband changed the United

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[9] Frontier Economics, 2023, *Victorian residential case study*, available at https://www.gasenergyaus.au/get/2059/victorian-residential-case-study-frontier-economics.pdf

[10] Ros et al, 2024, *Natural Gas Restrictions in the U.S.: Examining the State of Play, Policy Objectives, Legal Developments, and Antitrust Implications*, available at https://angle.ankura.com/post/102j0y2/natural-gas-restrictions-in-the-u-s-examining-the-state-of-play-policy-objecti

Kingdom's course confirming there will be no residential gas boiler bans, instead opting for heat pump support[11].

Conversely, Australian target-based policy gas been extremely effective at delivering decarbonisation. Renewable Energy Targets (RETs) in Victoria and other jurisdictions have all delivered real decarbonisation outcomes. Target-based policy is so impactful that Victoria plans to use an Industrial Renewable Gas Guarantee (IRGG) to decarbonise industrial gas use in the state.

Comparing the two options, it quickly becomes clear why bans don't work, and why targets do. Bans take a one-size-fits-all approach to a diverse energy customer base. Targets allow customers to choose to stay on a decarbonising energy source or move to another decarbonising energy source depending on what works for their circumstances. Bans destroy investor value in existing markets while targets create investor value in new markets.

Unsurprisingly, lifting the boiler ban in the UK saw a resurgence in renewable gas production[12]. Less ban policy = more renewable energy production. Similarly, the VRET and RET saw increased investment in new renewable energy markets.

The Victorian Government has already learnt this lesson as is seen with the IRGG. All it needs to do is apply this same approach to all energy supply chains including gas, LPG and liquid fuels. Doing so will allow customers to choose which decarbonising supply chain works best for them while increasing much needed investment in State renewable energy supply.

[11] Speare-Cole, 2025, *Miliband confirms no plans for 2035 ban on gas boilers in homes*, available at https://www.independent.co.uk/business/miliband-confirms-no-plans-for-2035-ban-on-gas-boilers-in-homes-b2680308.html

[12] Northern Energy, 2025, *Great news for the future of gas boilers and renewable gases!*, available at https://www.northernenergy.co.uk/news/great-news-for-the-future-of-gas-boilers-and-renewable-gases/

Consultation Question Responses

Question 1

Cost and Benefits Data: The Victorian Government seeks advice from stakeholders regarding any data related to historical or future forecasted improvements in the energy efficiency and/or cost of electric and gas appliances.

The Victorian Governments cost-benefit analysis (CBA) has not considered all options. Specifically, RIS CBA appears to have not considered converting natural gas to LPG.

Converting natural gas homes and appliances to LPG will in many cases costs less than electrification.[13] Once running on LPG, transitions to drop-in renewable forms of LPG such as BioLPG and rLPG will require no further appliance modifications to decarbonise LPG use[14].

Not considering natural gas to LPG these conversion costs may overlook significant economic benefits for Victorians and hinder effective energy transition strategy.

Question 2

Building Modifications:

Stakeholders are asked about the potential scale of and costs involved in undertaking building modifications when installing an electric appliance.

Most residential natural gas users will be able to switch to LPG with minimal cost. This is because natural gas and LPG appliances tend to be the same appliance with minor componentry changes. Plumbers can transition residential appliances and entire homes from natural gas to LPG as standard practice today.

In regional areas, LPG is often the only option for affordable, reliable energy supply as electricity can be unreliable or unavailable. While LPG appliances tend to require some electricity to operate, providing the small volumes of electricity to start an LPG appliance is very different to supplying the full energy capacity required for space heating or hot water supply.

Just like electricity and gas, renewable forms of LPG must be recognised as part of broader energy decarbonisation strategy. Ensuring that consumers have access to renewable forms of LPG ensure efficient energy decarbonisation without undue financial burden from mandating appliance change.

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[13] Frontier Economics, 2023, *Victorian residential case study*, available at https://www.gasenergyaus.au/get/2059/victorian-residential-case-study-frontier-economics.pdf

[14] Frontier Economics, 2023, *Pathways to Zero Emissions for LPG*, https://www.gasenergyaus.au/get/2016/pathway-zero-emissions-for-lpg-frontier.pdf

Input is requested on any potential exemptions that may be required due to barriers related to physical or regulatory constraints.

Regulatory constraints:

- No comment

Question 3

Maintenance of Appliances: Stakeholders are questioned about the differences in timing and cost of maintenance for electric and gas appliances in both residential and commercial sectors.

A switch from natural gas to LPG entails fewer modifications to existing appliances, hence fewer changes in how appliances are maintained.

Question 4

Energy Usage Data: The Victorian Government seeks information regarding the prevalence and energy usage of gas and electric appliances in commercial sectors, including both uptake in new buildings and usage in existing buildings.

The RIS itself acknowledges that

- *for some businesses, particularly in sectors with high energy demands, electrification may not be immediately viable*, RIS - Page 21,
- and further states that, *Reticulated and bottled LPG is also out of scope for the proposed regulations and will remain an available alternative for businesses wanting to continue to use gas RIS – Page 123.*

LPG is essential in precisely these circumstances—where mains gas is unavailable, and electrification is not a practical solution. Key commercial applications include:

- Space and water heating
- Commercial kitchens (restaurants, cafes, clubs)
- Food service vehicles and catering vans
- Essential services (hospitals, schools)
- Emerging use as shipping fuel

These benefits tend to be due to the following benefits of LPG:

- Superior energy storage capability (equivalent to more than 42 Tesla Powerwall 3 systems at around one-tenth the cost)
- Availability (Victoria produces 3x the LPG it consumes)
- Lower emissions (14% fewer greenhouse gas emissions than diesel)

- Pathway to renewable alternatives (bioLPG and rLPG) that reduce scope 1 emissions by 99% according to federal legislation.
- Ability to provide energy security for areas with unreliable electricity
- No need for government funding or subsidies
- Existing infrastructure that can be maintained rather than replaced

Ensuring continued access to LPG is critical for these sectors to maintain reliable and cost-effective energy solutions.

Question 5

Cost-Benefit Analysis: Stakeholders are also invited to provide additional data on the costs or benefits of electrification of commercial buildings and any technical or other barriers to implementation.

Transitioning to electricity in commercial buildings can come with hefty costs, making it a daunting prospect for many businesses. This is especially true for those in regional areas, where LPG is often favoured for its affordability and efficiency where electricity supply can be unreliable or unavailable. Renewable forms of LPG such as BioLPG and Renewable LPG can be viable sustainable energy solutions without the high cost and disruption of switching to electricity.