

Inquiry Into Sugarcane Bioenergy Opportunities in Queensland

Gas Energy Australia (GEA) represents Australia's liquid gas supply chains including Liquefied Petroleum Gas (LPG) and associated gases. Our members span production to retailing and everything in between. The LPG industry safely and securely supplies 43PJpa to industrial, commercial, residential, leisure and transport energy consumers nationally, including around 30% of regional households where electricity can be unreliable or unavailable¹.

Gas Energy Australia (GEA) welcomes the opportunity to comment on the Inquiry into Sugarcane Bioenergy Opportunities in Queensland. We acknowledge the potential of sugarcane-to-biofuel pathways to strengthen Queensland's renewable energy mix. We respond regarding the opportunity for alcohol-to-fuel (A2F) processes to produce BioLPG – a Renewable Liquid Gas (rLG) co-product of SAF or renewable rDiesel.

BioLPG, renewable LPG (rLPG) and renewable dimethyl ether (rDME) are together referred to as rLG. A drop-in substitute for conventional LPG, BioLPG is able to complement electrification and renewable energy options to support Queensland energy customers decarbonise their energy supply. This is especially true in regional Queensland where access to electricity can be unreliable or unavailable.

Recognising the role rLG can play within Queensland's bioenergy strategy would help avoid rLG getting lost in the energy policy mix. Policy and investment support for BioLPG production from processes like sugarcane-based A2F can support rLG market development, in turn strengthening regional energy security through the transition.

General Feedback

1. Parallel Opportunities – Alcohol-to-Fuel Pathways

BioLPG is produced as a co-product of the A2F biofuel pathway, which uses ethanol derived from sugarcane and other feedstocks. Through this process, sugar-derived ethanol can be upgraded to SAF or rDiesel, generating BioLPG as an rLG co-product.

¹ DCCEE, 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>

This pathway links Queensland's sugar biofuel potential with the development of rLG, creating an additional renewable energy stream that complements and strengthens the state's broader bioenergy goals.

2. Benefits for Queensland

Capturing BioLPG from A2F pathways would deliver a range of benefits aligned with Queensland's bioenergy and regional development goals.

BioLPG can directly replace conventional LPG across industrial, commercial and residential sectors. This offers an immediate way to decarbonise energy use, often at lower total cost than alternatives. This is particularly valuable in regional Queensland where LPG provides reliable energy supply to around 31 percent of households².

Access to BioLPG would provide additional low-emissions energy options for regional communities and industries currently reliant on LPG of higher emissions fuels like coal. An additional low-carbon fuel option would also strengthen fuel security in the region noting Queensland Autogas consumption. A 100 per cent drop-in fuel, BioLPG would leverage existing LPG infrastructure and appliances to diversify the States energy mix.

3. Policy and Investment Considerations

Queensland's growing bioenergy framework presents an opportunity to support rLG alongside emerging renewable fuels such as SAF and rDiesel. Including rLG within Queensland's bioenergy strategy would ensure a balanced, technology-neutral approach that captures all viable fuel pathways advancing emissions reduction and regional economic growth.

Without this inclusion, BioLPG may not be produced where it otherwise could be. BioLPG can be used on-site for heat or hydrogen production, and as a smaller proportion of A2F output may not be a priority. Ensuring the right equipment is installed to enable BioLPG production should be a priority of Queensland's bioenergy strategy. This would include making BioLPG a prerequisite for government financial support.

Beyond financial support, federal emissions policy reform is required to allow LPG customers to have their BioLPG emissions reduction to be accounted. Today, a BioLPG consumer would not have their emissions reduction recorded under national emissions accounting. This prevents BioLPG market formation as customers gain no recordable emissions reduction 'value' when paying the green premium which comes with BioLPG.

² 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>

Recommendations:

GEA recommends that the EPA:

- Recognise BioLPG as a government supported output from the A2F pathway within Queensland bioenergy strategy;
- Make BioLPG production capability a requirement where A2F production receives government financial support; and
- Influence federal emissions accounting reform to ensure BioLPG and all rLGs are included in emissions accounting and certification schemes.

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
Gas Energy Australia

The Role of LPG in Australia'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 approximately 30% of households³. The LPG industry safely and securely supplies 43 petajoules of energy annually across industrial, commercial, and residential applications nationwide⁴. A further 120 petajoules of LPG is exported annually, with the LPG sector as a whole contributing over \$5bn of GDP and 20,500 FTE to the Australian economy⁵.

LPG stands out as a cleaner alternative to many traditional fossil fuels, producing 14% fewer greenhouse gas emissions than diesel⁶. The industry is actively embracing Australia's transition to net zero through the pursuit of renewable forms of LPG⁷. 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 cost⁸. 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.

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/>