

4 February 2022

Mr Sean Sullivan
Deputy Secretary - Energy and Resources
Department of Industry, Science,
Energy and Resources

Via consultation hub: <https://consult.industry.gov.au/>

GEA RESPONSE TO THE LOW EMISSION TECHNOLOGY STATEMENT 2022

Dear Mr Sullivan

Gas Energy Australia (GEA) welcomes the opportunity to respond to the Low Emission Technology Statement (LETS) 2022 consultation.

By way of background, GEA is the national peak body which represents the bulk of the downstream gas fuels industry which covers Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG), Compressed Natural Gas (CNG) and Hydrogen (H₂). The industry comprises major companies and small to medium businesses in the gaseous fuels supply chain, refiners, fuel marketers, equipment manufacturers, gas transporters, consultants and other providers of services to the industry.

GEA members and associates support the Federal Government's technology-led approach to reducing Australia's emissions without imposing new costs on households, businesses or the economy. This approach allows greater scope for a wide range of low emission technologies to play their part in reducing emissions in particular applications.

The LETS 2022 could be bolstered by recognising the more efficient and lower emissions profile of portable gas fuels, and their cost-effective ability to play a significant role in reducing Australia's emissions – both in the short to medium term and in the long term through the development and uptake of renewable and net zero gases.

GEA's responses to the consultation questions are detailed below.

Where can government make the biggest difference and further incentivise investment in low emissions technologies, particularly the priority technologies identified in the Roadmap?

As noted in the LETS 2021, one of Australia's big technology challenges is the delivery of low-cost, clean and reliable energy to households and industry for transportation, heating, lighting and production. Recognising the role low emissions gas can, and must, play today through gas

powered transport and off-grid power generation, can achieve these worthy goals. But it is incumbent on governments and regulators to recognise the full scope of gas decarbonisation.

There are three main areas where the Government can incentivise investment in low emissions technologies that minimise the costs to the Australian economy through the increased use of gas fuels.

Improvements to methods under the Emission Reduction Fund / Climate Solutions Fund

- *Land and Sea Transport Method*

Incentives to reduce emissions, such as those provided by the Emissions Reduction Fund (ERF) and its successor the Climate Solutions Fund, are vital to Australia's commercial, industrial and transport sectors, which will need to play a greater role in helping to meet our international commitments to reduce greenhouse gas (GHG) emissions.

To date, the ERF has not delivered significant volumes of abatement in the industrial and transport sectors. Around 55 per cent of currently contracted abatement is being delivered under vegetation management methods, while only 3 per cent of Australian Carbon Credit Units (ACCUs) issued have been credited under methods relating to transport, industrial fugitives and energy efficiency.

There are significant conceptual and practical problems with the current ERF Land and Sea Transport Methodology's measurement of GHG abatement. For marine applications, this method uses the International Maritime Organisations Energy Efficiency Design Index as a baseline for measuring abatement. But by comparing this theoretical measure of optimal emissions performance with actual real world operating performance using a lower emission fuel, this methodology makes it virtually impossible for the vast majority of vessel owners to identify any significant abatement from fuel switching. The method should measure the actual emissions performance of a ship and provide an estimate of CO₂/ per ton-nautical mile, based on the ship's historical operations, including actual speeds travelled and cargo carried.

Consequently, with no prospect of claiming ACCUs under the ERF, many abatement opportunities are missed. This is despite both Australian and overseas experience demonstrating that fuel switching can deliver significant real emissions abatement.

GEA is encouraged by the recent Federal Government response to the expert panel report examining additional sources of low-cost abatement, which recommended providing industry greater opportunity to support the development of new methods to encourage innovation and new method development. We, therefore, call on the Federal Government to ensure that these recommendations for the ERF to better allow for the crediting of emissions reduced by fuel switching are expedited as a priority.

More detail can be found in GEA's response to the Review of the Carbon Credits (Carbon Farming Initiative - Land and Sea Transport) Methodology Determination 2015.

- *Biomethane Method package*

GEA strongly supports the development of an ERF method for biomethane that allows projects to earn ACCUs for activities that reduce or store emissions. This should be developed as a priority.

Incentives to reduce GHG emissions through the uptake of renewable gases is vital in ensuring Australia's stationary energy and transport sectors can reduce emissions in an affordable manner utilising best practice technology.

There are two main areas where the biomethane method should be improved to allow for the greater utilisation of renewable gases through the ERF. These include:

1. Expansion of the method to credit for the use of bioLNG and bioCNG as a substitute for fossil fuel-based LNG and CNG.
2. Displacement of fossil fuel-based LPG with biomethane.

More detail can be found in GEA's response to the Biomethane Method Package.

Certification scheme for renewable gases

GEA members support the establishment of a certification scheme for renewable gases. We note that the Federal Government is working towards the establishment of a hydrogen Guarantee of Origin (GO), or certification scheme as a priority action under Australia's National Hydrogen Strategy. The GO scheme must be designed to ensure technology and gas options are in no way limited to hydrogen.

It is essential that the full suite of gas options, technologies and the opportunities from future breakthroughs in this area be accommodated by the broader inclusion of other net zero emission gas fuels, such as biomethane and bioLPG.

Biomethane and bioLPG have significant ability to contribute to emissions reductions, while maintaining the use of current downstream gas fuels infrastructure. In the case of the LPG, industry's depots, transport and storage facilities and cylinders, are vital infrastructure for efficient, safe and reliable delivery and is estimated to be worth some \$4.3 billion. The inclusion of other net zero emission gases in a GO scheme would spur industry investment and make them more readily available to Australian homes and businesses. As such, it is critical that the GO's framework accommodates the granting of certificates for the production and injection of biomethane and bioLPG.

Renewable Energy Target for the production of renewable and net zero gases

The establishment of a renewable energy target for the production of renewable gases is another way to further incentivise investment in low emissions technologies and drive the uptake of renewable gas in Australia. Targets and incentives, such as the already established Renewable Energy Target, is an effective way of driving development of low and zero emission technologies.

How does Australia better support consumer and industry demand growth for low emissions technologies both domestically and internationally?

- GEA supports the development of the proposed Voluntary Zero Emissions Gas Market noted in the LETS 2021, as a priority action. This market will help drive early demand for clean hydrogen and, importantly, other zero emissions gases and recognise consumers' voluntary purchase of zero emission gas.
- It is critical to ensure that measures to support low and zero emission technologies embody technology neutrality to ensure consumers and businesses are not restricted in which fuels they can use for particular applications, especially as new lower and zero emissions fuels become available. Some Australian jurisdictions have already begun to pick so-called technology 'winners', such as electrification, on the pathway to net zero. This has the perverse outcome of denying Australian households, businesses and the entire economy with access to new and emerging technologies which may prove to be more effective, efficient and lower emitting.

This can be seen in the Australian Capital Territory with its proposed legislation to eliminate new and existing gas connections after 2025. This ideologically dogmatic approach would deny Canberrans access to lower emitting, cheaper and more reliable gas heating. It is made more perplexing given the single biggest air pollutant in the ACT is smoke from wood heaters.

The upshot of the ACT's position is to deny use of lower emission gas heating systems today, and also deny the capacity to take up zero gas use into the future, while burning wood for heat 24/7 is widespread and growing. Ultimately, it is the environment that loses.

The ACT's knee-jerk response is a case study in what not to do. The technology in this field is evolving, cutting off access to new and emerging opportunities is short-sighted and akin to cutting off one's nose to spite one's face.

Likewise in Victoria, The City of Yarra is the first council to pledge to switch its buildings, including pools and community centres, from gas to renewable electricity by 2030. Over

this timeframe, it is envisaged that renewable, low emitting and zero emissions gas will be an everyday reality. It will be cheaper and it will be more reliable.

The results of a number of studies demonstrate that electrification of energy supply, which would require massive investment in new electricity infrastructure, would be a much more expensive option than decarbonising gas supply and maintaining existing gas infrastructure. This would also limit consumer choice. GEA considers that gas is a fuel of choice, and many individuals choose to opt for the comfort that gas-fuelled cooking appliances, space and water heaters provide. Restricting the use of gas now would restrict the use of renewable and zero emissions gases in the future.

What are the global trends and competitive advantages that should be considered for the priority technologies?

- Internationally the use of bio and renewable gases has been steadily increasing. Companies such as SHV Energy, based in the Netherlands offer customers the ability to switch from traditional high-carbon energy sources to LPG, LNG or bioLPG to reduce their carbon footprint.
- The use of biogas as a transport fuel is also increasing internationally, with countries such as Sweden setting a goal of a fossil-fuel free transport sector by 2030, and biomethane is the key way of achieving this ambition.
- A number of LPG Association's internationally have developed plans to reach net zero emissions for the industry by mid century or earlier.

For example,

- liquid Gas UK's 2040 Vision – <https://www.liquidgasuk.org/policy/2040-vision-1>
- Liquid Gas Europe's Vision 2050 - <https://www.liquidgaseurope.eu/publications/vision-2050>
- New Zealand LPG Association's pathway to 100% renewable LPG – <http://gasenergyaustralia.asn.au/wp-content/uploads/2021/10/2021-0328-LPGANZ-CCC-Submission-%C6%92c.pdf>

What are the industrial sectors (other than steel and aluminium) that require technology innovation?

Gas is used as an industrial feedstock to generate heat. These industrial uses of gas can be significantly harder to decarbonise due to high heating requirements, which are unable to be met by electrifying these applications. For example, particular industrial processes require a

heavy thermal heating load greater than 1,300°C, such as processing chemical feedstock. Electrification cannot facilitate such needs.

In addition, when different sectors' total energy consumption of gas and electricity is compared, it shows that some sectors are heavily weighted towards gas use rather than power (that is, they use more heat than power). It means these sectors cannot simply 'fuel switch' to decarbonise. It's critical that the Government takes into account the different energy needs of sectors and facilitates a just transition through incentives to utilise renewable and net zero gas fuels.

What are the most promising emerging low emissions technologies and why? Do they meet the four filters identified in the Roadmap to elevate to a priority technology?

Innovative applications of existing gas fuels

- **Heavy vehicle transport**

One example is the heavy-duty dual fuel (HDDF) system, which substitutes LPG for diesel. Sixteen Volvo HDDF prime movers operated by national freight and logistics company Rivet Energy have been fitted with modified engines that substitute LPG for diesel by 23%. These HDDF trucks operate across Victoria, NSW, SA and Queensland and deliver LPG on bulk and multi-drop delivery runs to businesses every day of the year. On average, each vehicle saves around 7% in fuel costs and reduces emissions by almost 8,000 kilograms each year.

- **Marine transport**

Compared to diesel, LNG can achieve 100% SOx emissions reductions, 85% Nox emissions reductions for low pressure engines, 40% Nox emissions reductions for high pressure engines (diesel cycle), 95 to 100% particulate reductions and around 25% CO2 reductions, while also being a commercially viable option. The Woodside supply vessel Siem Thiima and the SeaRoad vessel Mersey II are already using LNG in Australia, while TT Line has two LNG-fuelled newbuild ferries on order.

- **Off-grid power generation**

Case studies show that gas and/or gas and solar hybrid generators for off-grid generation provide a lower emitting and more cost-effective solution than more common diesel generation or solar diesel hybrids.

For example, Wesfarmers Evol LNG supplies LNG to power the Carosue Dam, Daisy Milano, Dalgara, Darlot, Deflector and Mt Marion mines in Western Australia, which employ

hundreds of workers. Each year, this reduces their combined diesel fuel consumption by 55 million litres, saving a total of \$7.6 million on their fuel costs and reducing CO2 emissions by 27,000 tonnes.

Blending and hybrid systems

- **Backing up renewables**

Western Water has built an organic food waste facility at Melton Recycled Water Plant in Victoria to generate biogas for renewable energy use on site. LPG is used as a backup fuel at the site to increase the energy content of the biogas so it can be used to generate renewable energy without the need to flare. When the volume of biogas produced is low, the facility can also use the back-up LPG to generate the full capacity of the turbines to participate in the wholesale market when there is a good pricing signal.

- **Blending**

In the medium-term, gas providers will offer blended gas products as part of the transition to lower and then zero emission options. Gas blending is a near-term development that helps to reduce the emissions associated with gas use by blending biomethane, renewable DME and hydrogen into gas tanks and pipeline systems as part of a long-term effort to reduce the GHG emission intensity of producing and consuming gas.

- **Renewable gas**

In the long-term, renewable gases such as biogas, renewable DME and hydrogen will become more readily available. With the same chemical composition as fossil based portable gases, net zero and renewable gases, such as biomethane or biopropane, are able to utilise Australia's vast network of portable gas infrastructure. The continuing use of this infrastructure can contribute to reduced costs for consumers, and when transitioning to renewable, net zero and zero gases enable the continuing use of current worker training, safety standards and the reliable, cost-effective national network.

a. Abatement potential. How big are the potential emissions reductions from this technology?

There are significant emissions reductions to be achieved today through the greater use of the above innovative applications of gas fuels, along with blended and hybrid products. In the future when gas is well along its decarbonisation journey, net zero and renewable gas fuels

which are able to utilise existing infrastructure can significantly contribute to meeting Australia's emission reduction obligations in a way that is cost effective and maintains economic and jobs growth.

b. Economic benefit. What are the potential economic benefits for Australia of deploying this technology at a large scale? Benefits include creating and preserving jobs, especially in regional areas.

The Australian gas industry is an extremely important industry sector and employer in Australia providing \$55 billion in direct economic activity (some 3% of GDP) and over 165,000 full-time jobs. Throughout the economy, the Australian gas industry underpins a further \$470 billion in economic activity and supports more than 23,000 contracting businesses and their employees. Collectively, the thousands of businesses in the supply chain that are providing investment, job creation, regional development, export revenue and over \$18 billion in taxation receipts to government. Furthermore, the economic activity and jobs provided by the gas industry supply chain are based in rural and regional towns, providing a range of benefits including upskilling and educational opportunities as well as creating stronger, more resilient local communities.

c. Australia's comparative advantage. Does this technology play to Australia's strengths? Our strengths include abundant energy and mineral resources, skilled workers, strong institutions and trusted trading relationships with major energy consumers.

As a net exporter of energy and the world's second largest exporter of LNG, Australia is well placed to reap the benefits from increased use of gas fuels domestically. Biomethane and bioLPG offer customers the ability to switch from traditional energy sources to reduce their carbon footprint, while continuing to utilise current gas infrastructure.

Where government can make a difference. Will government investment help develop and deploy this technology? This includes whether government action will help accelerate cost reductions.

GEA asserts that the tax on gas transport fuels should be no more than 50 per cent of that on diesel/petrol on an energy equivalent basis. Both major parties committed to that in 2011. However, since that time the tax on LNG, CNG and LPG used in heavy transport has soared to over 80 per cent and should be reduced to the previously committed level.

As biomethane and biopropane can use existing infrastructure with minimal modification, the increased use of gas fuels for transport will mean individuals and businesses will be reducing

transport-related emissions now, and be well on the way to utilise biogas as it becomes more accessible.

What other enabling technologies will be integral to deployment of low emissions technologies in Australia, and why? What could Government do to support their uptake?

- **Storage technologies**

Portable gas infrastructure provides massive, decentralised energy storage. The existing LPG storage capacity represents 3 billion kilowatt hours and can store the same amount of energy as 300 million Powerwall batteries. This storage infrastructure comprising bottles, tanks, trucks and reticulated networks is already in place and has been designed to meet stringent Australian standards. Utilisation of this gas storage capacity for net zero and renewable energy storage is critical in reaching net zero emissions.

Aside from our established partnerships, how would you like to see Australia working with other international partners on low emissions technologies?

- Develop partnerships to support low and zero emission gas technologies, including: clean hydrogen and ammonia; lower emissions LNG and bio and renewable LPG.

What information would you like to see to demonstrate how progress towards the stretch goals is being made? Does the impact evaluation framework have any gaps?

The portable gas industry is currently undertaking detailed modelling to develop a comprehensive Vision for the industry to decarbonise and make a positive contribution to Australia's low carbon future to 2050 and beyond. This Vision will reflect the ambitions of the downstream gas fuels industry and demonstrate a pathway to net zero emissions, including potential fuel mixes that can see the industry decarbonise.

What were you expecting in LETS 2021 that wasn't there?

Following on from the release of the Bioenergy Roadmap and the Clean Energy Regulators expansion of the Emission Reduction Fund to include biomethane, GEA makes the case that there needs to be greater focus on bioenergy and opportunities for the bioenergy sector to contribute to reducing Australia's emissions.

Was LETS 2021 presented in a way that made it easy to understand and access?

Yes. GEA considers the LETS 2021 to be easy to understand and access.

GEA welcomes the opportunity to discuss these issues in greater detail. If you have any questions regarding this submission, please do not hesitate to contact GEA's Policy Adviser Melissa Dimovski at mdimovski@gasenergyaustralia.asn.au.

For your consideration.

Yours sincerely

A handwritten signature in black ink, appearing to read "Brett Heffernan".

Brett Heffernan
Chief Executive Officer
Gas Energy Australia