

Submissions
Independent Expert Panel
Victorian Department of Environment,
Land, Water and Planning

20 May 2022

Submitted via: Engage Victoria

GEA RESPONSE TO THE CONSULTATION ON VICTORIA'S EMISSIONS REDUCTION TARGET FOR 2035

Dear Panel,

Gas Energy Australia (GEA) welcomes the opportunity to respond to the Independent Expert Panel's consultation on Victoria's emissions reduction target for 2035.

By way of background, GEA is the national peak body representing the bulk of the downstream gas fuels industry, covering 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 gas fuels supply chain, refiners, fuel marketers, equipment manufacturers, gas transporters, consultants and other service providers to the industry.

GEA members are committed to working with the Victorian Government to support efforts to reduce greenhouse gas (GHG) emissions, combat climate change and meet Victoria's emission reduction targets set out in the Victorian Climate Change Strategy.

Indeed, it is becoming increasingly clear that without a vibrant, effective and efficient gas sector, the state is unlikely to achieve its energy needs and emissions goals.

The use of new clean fuels and technologies, such as renewable gas and innovative applications of existing gas fuels - including combining them with renewables and fuel cells – will be pivotal to maintaining consumer choice for Victorians and encourage the development of cost-effective zero emission alternatives.

It is critical when deciding emission reduction targets to ensure that there is an equitable transition to cleaner energy sources. This is particularly evident for regional

communities where there are fewer options to deliver energy affordability, safety, security and reliability for all users.

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

- **What three things do you think will cut Victoria's emissions the most in the period 2031-2035?**

Transition to renewable gases

The gas industry is already on its own decarbonisation journey, low emission fuels, such as LPG and natural gas have the ability to maintain reliability of supply and reduce emissions cost effectively. Meanwhile renewable gases, such as biogas, renewable LPG, renewable dimethyl ether (DME), renewable hydrogen and renewable ammonia will become more readily available in the future. The increasing use of these gases will help Victoria meet its climate and emission targets, while helping to maintain current benefits gas fuels provide as a stationary energy source and in generating electricity to fill the void left by coal.

Gas providers have begun offering blended gas products including the Hyp SA project, run by Australian Gas Infrastructure Group, blending some 5% green hydrogen into its gas distribution network, servicing more than 700 homes.

The Sydney Water/Jemena biomethane-to-gas project, which will see thousands of Sydney homes and businesses using renewable green gas for cooking, heating and hot water, is already well advanced.

Gas blending 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 emission intensity of producing and consuming gas. This is a key factor in the gas sector's transition to net zero emissions.

With the same chemical composition as existing portable gases, net zero and renewable gases will be able to tap into Australia's vast network of portable gas infrastructure. The continuing use of this infrastructure represents a significant cost saving for consumers. In addition, the ability to use this existing infrastructure for renewable and net zero gases provided continuity across the entire system – underpinning lower costs, zero additional carbon footprint and maintaining workforce skills, training regimes, safety and technical standards.

GEA members have already committed to developing a long-term strategy for the industry to reach net zero emissions by 2050, with the ability to meet interim targets such as 2035 and 2045.

Heavy transport fuel switching

With transport accounting for around 22 percent of total emissions in Victoria, there is significant scope for this sector to contribute substantially to the Victorian Government’s objectives to reduce emissions and meet interim climate targets. Gas powered transport solutions utilise proven low emission technologies currently available and offer a number of advantages for operators.

Not least of all:

- superior cost-effectiveness against electrification, resulting in a cheaper fuel source,
- cleaner energy as the inputs and construction of new networks add costs and carbon in the delivery of electrification, which is not required when using the existing gas distribution network, and
- greater fuel security and reliability of supply, reducing the burden on an ever-increasing load of electricity, which is forecast to become unmanageable, especially as gas is in abundance in Australia.

The chart below demonstrates typical emissions reduction from using gas fuels to power heavy transport compared to the most common heavy transport fuel, diesel.

	DIESEL	GAS FUELS
Carbon Dioxide (CO ₂)	✘	23% lower
Nitrogen Dioxide (NO _x)	✘	75% lower
Particulate Emissions	✘	90% lower
Sulfur Oxide (SO _x)	✘	99% lower

Source: Rare Consulting Pty Ltd, National Alternative Transport Fuels Forums – Synopsis, June 2011, <http://www.qgc.com.au/news-media/NewsDetails.aspx?Id=55783>

As our reliance on diesel for heavy vehicles continues to grow, by 2040, heavy vehicle diesel fuel consumption is predicted to grow by 56 per cent on 2016 levels.

Two points are clear. Firstly, heavy transport is one of the most difficult sectors to decarbonise. Secondly, conventional heavy vehicles will continue to be the most popular and widely available means of transporting goods around Australia, certainly for the foreseeable future. Seizing renewable gas fuels as a drop-in solution, adopting gas-powered heavy vehicles can provide real and immediate benefits.

These very real environmental benefits of using gas can be realised now, and will improve over time as renewable, net zero gases become more widespread. Renewable gases, such as biogas and hydrogen, that utilise existing transport infrastructure, offer a clear advantage of affordable, reliable net zero emissions energy for vehicles.

Internationally, there are already numerous examples of bio and renewable gas fuels contributing to large emissions reduction for heavy vehicles.

The use of biogas as a transport fuel is consistently increasing with Sweden setting a goal of a fossil-fuel free transport sector by 2030, with biomethane identified and applied as pivotal to achieving this ambition.

The greater use of decarbonised gases for Victoria's transport sector can contribute to cost-effective emissions reduction in the medium to long term. And, further, the use of biomethane for transport applications is compatible with natural gas-fuelled infrastructure and technologies. Therefore, presenting the capacity to accelerate the reduction of emissions with at a fraction of the additional costs.

Gas backing up renewables

In order to generate zero emission electricity, gas fuels are, and will increasingly, be used as a vital back-up fuel for electricity generators. This is especially that case for hybrid renewable energy systems in remote locations. As the supply of renewable energy (wind and solar) is inherently intermittent, i.e. the sun only shine half of the day, sometimes less, and the wind blows when it will, it is critical that these systems be supported by reliable, affordable, renewable and, ultimately, net zero energy sources – namely, gas.

Victoria's Western Water organic food waste facility at Melton Recycled Water Plant, generates biogas for renewable energy use on-site. LPG is used as a back-up 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 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.

- **What benefits can you see in a low emissions economy for Victoria in 2031-2035?**

Increased fuel security

GEA considers fuel and energy security to be a critical issue and supports initiatives to increase fuel security through fuel diversity. Australia's growing dependence on imported oil for major industries like transport and manufacturing is not sustainable in the long-term and runs contrary to the emerging need for self-sufficiency. As we have seen recently, disruptions to vital shipping routes due to natural disasters or regional conflict quickly impact on major domestic services. A diversification of Victoria's fuel profile to make greater use of domestically-produced fuels, including LPG, LNG and CNG and renewable gases, provides enormous benefits in terms of increasing fuel security and overall energy security.

Air quality improvements

Greater use of low and zero emission gases in both transport and stationary energy applications delivers a cleaner environment, with reduced pollutants and emissions improving air quality. Encouraging the use of cleaner alternatives through fuel switching to gas should be seen as an affordable way to improve Australia's air quality and reduce significant threats to human health posed by stationary and heavy vehicle emissions.

- **What challenges might Victoria face in reducing emissions in the period 2031-2035?**

Regional and remote areas

In pursuing emissions reductions and mechanisms to achieve lower and, ultimately, net zero emissions, many jurisdictions have focused on greater electrification as a way to achieve these objectives. It is clear that electrification is, and will continue, placing extra load on an electricity network already under pressure from increasing reliance on intermittent renewable energy.

This poses specific issues for regional communities. In particular, there needs to be further exploration of the impacts of increased electrical load from greater use of electric appliances and vehicles in edge-of-grid areas (where around 28,000km of Single Wire Earth Return powerlines exist in Victoria¹). This detrimental impact will only be exacerbated on the back of increasing electric vehicle use in regional and remote areas, when implemented in addition to policies that push to electrify households and businesses.

- **How could Victoria overcome potential challenges to reducing emissions in 2031 - 2035?**

GEA considers that regional and rural off-grid areas should be supported in reducing their output of carbon emissions and switching to lower emission solutions. Providing incentives for regional consumers and communities to utilise renewable and net zero gases as they become widely available will help relieve pressure on the electricity grid, while also reducing emissions. This should include expansion of Victoria's Renewable Energy Auction Scheme and financial incentives for regional communities to incorporate renewable gases, to facilitate switching from diesel to lower emissions gases today, and net zero gases in the future, for off-grid power generation.

Much of the electricity for rural and remote applications comes from generators running on imported diesel as a back-up to intermittent renewable sources. Off-grid generators and industrial users can all use LPG and natural gas fuels with current technology, and they are able to provide reliable power generation that backs up that provided by renewable energy sources. Case studies show that gas and solar hybrid generators for off-grid generation provide a lower emitting and more cost-effective solution than more common solar-diesel hybrids.

LNG enables the Carosue Dam, Daisy Milano, Dalgara, Darlot, Deflector and Mt Marion mines in Western Australia, which employ hundreds of workers, to reduce 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 per year.

In the future, through the use of renewable and net zero gases, these communities will be able to reap the benefits of zero emissions, while maintaining all the previous affordability, reliability and fuel security benefits of gas-powered generation.

¹ <https://www.energy.vic.gov.au/safety-and-emergencies/powerline-bushfire-safety-program/reports-and-consultation-papers/swer-workshop-appendix-c>

- **What can be done to make sure the benefits and costs of climate action are fairly shared?**

Technological neutrality

It is critical that the development of mechanisms or utilisation of existing state-based mechanisms to meet emission reduction targets and climate change objectives, does not target greater electrification of buildings and appliances, or pursue one fuel or technology over another.

Seeking to pursue particular fuels or technologies will impose higher costs on households. 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 the existing gas delivery network².

Governments should remain technology and fuel neutral when supporting the development of low and zero emission technologies and associated industries. A technology neutral approach facilitates the take-up of the most cost-effective energy technology for specific applications in specific regions, including buildings that receive minimal sunlight for solar photo voltaic capture. These other forms of low emission technologies, including new renewable technologies, offer consumers a broader suite of opportunities to meet climate objectives.

GEA welcomes the opportunity to discuss these issues in greater detail. Should you have any questions arising from this submission, please do not hesitate to contact GEA's Manager – Policy & Research Melissa Dimovski at: mdimovski@gasenergyaustralia.asn.au.

Kind regards,

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

Brett Heffernan
Chief Executive Officer
Gas Energy Australia

² *Gas Vision 2050: Delivering a Clean Energy Future, 25, 09, 2020, <http://www.cleanercheaperfuels.com/>*