

1 April 2021

Mr David Fredericks PSM
Secretary
Department of Industry, Science,
Energy and Resources
GPO 2013,
Canberra, ACT, 2601

Submitted via consultation hub

GEA RESPONSE TO THE FUTURE FUELS STRATEGY: DISCUSSION PAPER.

Dear Mr Fredericks

Gas Energy Australia (GEA) welcomes the opportunity to respond to the Department of Industry, Science, Energy and Resources' Future Fuels Strategy: Discussion Paper (the Discussion Paper).

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) and Compressed Natural Gas (CNG). The industry comprises major companies and small to medium businesses in the gas fuels supply chain: refiners, fuel marketers, equipment manufacturers, LPG vehicle converters, consultants and other providers of services to the industry.

GEA supports the Government's aims of enabling consumer choice, stimulating industry development and reducing emissions in the road transport sector. GEA considers that the increased use of gas fuels for transport applications in Australia can significantly contribute to the Government's aims. GEA considers that Government action in a number of key areas including, vehicle emission standards, tax and excise burdens, calculation of abatement under the Emissions Reduction Fund (ERF) and the use of decarbonised gas can substantially contribute to reducing Australia's transport emissions cost effectively while maintaining consumer choice.

With transport accounting for around 17 percent of total emissions in Australia, there is significant scope for gas fuels to contribute more to the Government's environmental objectives in the transport sector¹. As noted in the Discussion Paper, the future of road

¹ Climate Council, 'Transport Emissions: Driving Down Car Pollution in Cities', September 2017, <https://www.climatecouncil.org.au/wp-content/uploads/2017/09/FactSheet-Transport.pdf>

transport in Australia will consist of a mix of vehicle technologies and fuels, and in the short to medium term, conventional vehicles that use petrol and diesel will continue to be the most popular and widely available vehicles in Australia. Australian gas fuels have significant ability to contribute to reducing Australia's transport emissions, in the short term through autogas and gas-powered heavy vehicles and in the long term through the use of decarbonised gases such as renewable LPG, biomethane liquefied in the form of renewable LNG or compressed in the form of renewable CNG, and hydrogen.

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

Charging and refuelling infrastructure - Questions

What technical issues remain for rolling out recharging and refuelling in both metropolitan and regional blackspots?

Single wire earth return lines

In addition to the general issue of transport electrification placing extra load on an electricity network already under pressure from increasing reliance on intermittent renewable energy, there are specific issues in regional areas. In particular, there needs to be further exploration of the impacts of increased electrical load from greater use of electric vehicles in edge of grid areas where around 200,000 km of Single Wire Earth Return (SWER) power lines exist in Australia². Further, this impact would be exacerbated in terms of the increase in electric vehicle use in regional and remote areas, when implemented along with State and Territory Governments' push to electrify households and businesses in the pursuit of net zero emissions.

Early focus on commercial fleets – Questions

What are the main barriers to adding new vehicle technology into light and heavy duty vehicle fleets?

GEA considers there to be a number of barriers to the uptake of new emission reduction technologies for light and heavy vehicles and fleets which governments can lower. These include the lack of vehicle emission standards and problems with the Emission Reduction Fund (ERF) methodology for calculating abatement.

² Energy Source and Distribution, 'SWER still going strong', May 2014, Paul Grad, <https://esdnews.com.au/swer-still-going-strong/>

Vehicle emission standards

Australia relies heavily on road freight to move food and essential items across the country. As such, our reliance on diesel for heavy vehicles continues to grow, and by 2040 heavy vehicle diesel fuel consumption is predicted to grow by 56 per cent on 2016 levels. With heavy transport considered to be one of the most difficult transport sectors to decarbonise, conventional heavy vehicles will continue to be the most popular and widely available vehicles in Australia in the short to medium term.

The introduction of more stringent vehicle toxic emission standards and the limiting of carbon emissions through the introduction of heavy vehicle standards would incentivise the use of lower emissions fuels such as LPG and natural gas. This would improve environmental and health outcomes for Australians. More stringent standards would also reduce technical and commercial barriers to the supply of the latest heavy vehicle models fitted with the latest safety and fuel saving technologies as standard and avoid Australia becoming a dumping ground for old and inefficient vehicle technology.

Emissions Reduction Fund

As noted in the Discussion Paper, the expert panel examining additional sources of low-cost abatement (the King Review), identified transport as one of the sectors with untapped potential for reducing emissions, and to date, the ERF has had limited success in incentivising emissions reductions in the sector. GEA considers that incentives to reduce greenhouse gas emissions for land and sea transport such as the ERF to be vital in ensuring Australia's domestic transport fleet is encouraged to reduce emissions and utilise best practice technology to do so. That said, GEA sees significant conceptual and practical problems with the current ERF methodology for land and sea transport and the method of calculating abatement for fuel switching. GEA considers that modifying the current methodology to better allow for the crediting of abatement for fuel switching, would encourage transport operators to look to low emissions fuels as a way of reducing CO₂ emissions from their fleets as well as other harmful emissions.

GEA considers that the Future Fuels Fund could help address these barriers detailed above by:

- The introduction of increased mandatory standards - Euro VI (and equivalent US and Japanese standards) for heavy vehicles under the Road Vehicle Standards Act 2018 (RVSA) and bring Australia into alignment with international standards adopted by major vehicle markets internationally such as the United States and Japan and;
- Improving the current ERF methodologies to better credit emission reductions from fuel switching and drive investment in low emission technologies, through

implementation of the recommendations made in the King Review of setting out mass-based emissions factors for common gas fuels under the method, and to either remove the requirement to improve on the Energy Efficiency Design Index (EEDI) or to exclude vehicles that meet the EEDI from the method.

In what ways (other than direct funding) could the Government assist businesses to increase uptake of new vehicle technologies in their fleets?

Tax burden on gas fuels

A significant barrier to the uptake of low emission gas-powered transport is the growing tax burden on LPG, LNG and CNG used in heavy vehicle transport on an energy equivalent basis. Since 2011, the introduction and increases to fuel excise rates on gas fuels has eroded the price advantage of gas compared to diesel. This growing tax burden contradicts the bipartisan Federal Government commitment to apply energy content-based fuel excise to all transport fuels, with a 50 per cent discount for gas fuels in recognition of the broader benefits of Australian gas as a fuel source. These include environmental - lower carbon monoxide, carbon dioxide, particulate matter and NOx emissions - as well as economic and energy security that flow from it being locally produced rather than imported like most oil-based fuels.

GEA also considers that when determining road expenditure charges recoverable from heavy vehicles, environmental impacts should be taken into account. For example, the advantages gas powered heavy vehicles offer over traditional diesel-powered heavy vehicles in terms of reductions in greenhouse gas emissions, toxic tailpipe emissions dangerous to human health and noise pollution. As such, gas powered vehicles should benefit from lower registration charges compared to diesel-powered heavy vehicles to reflect their significantly lower environmental impact, as is the case with light vehicles in the Australian Capital Territory.

GEA also notes that heavy vehicles powered by other low emission sources such as electricity and hydrogen currently pay no fuel tax in Australia. GEA considers this to be inconsistent with the current tax on gas fuels. This is especially so given electric or hydrogen vehicles can have a bigger carbon footprint than gas vehicles when upstream emissions associated with either the generation of electricity or the production of hydrogen are taken into account.

Truck dimension rules

GEA considers that the Commonwealth Government should work with State and Territory Governments and Regulators to modify current mass and dimension regulations to accommodate alternative fuelled heavy vehicles. This includes, LPG, LNG, CNG heavy vehicles along with vehicles fuelled by hydrogen and electricity.

What specific cost-effective vehicle technologies should be trialled under the Freight Energy Productivity Program?

Low emission fuels such as LPG and natural gas have the ability to reduce emission costs effectively through the use of innovative technologies for heavy vehicles.

Low-emission dual fuel heavy vehicle systems

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 which substitute LPG for diesel by up to 23 per cent. 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 per year, each vehicle saves around 7 per cent in fuel costs and reduces emissions by almost 8 tonnes, which is equivalent to taking four cars off the road.

Dedicated natural gas powered heavy vehicles

Heavy vehicle manufacturers such as Scania and Iveco, currently have available for purchase in Australia, Euro VI gas powered heavy vehicles which help to reduce CO₂ emissions by up to 23% compared to diesel, along with a 60% reduction in NO_x³ and 99% reduction in particulate emissions and 99% reduction in Sulfur Oxides⁴. These viable alternatives to diesel powered heavy vehicles can meet the stringent emissions standards and also contribute to reduced carbon emissions and costs.

Decarbonised gases

In the medium to long term, when gas is well advanced along its decarbonisation journey, renewable gases such as biogas and hydrogen, that utilise existing transport infrastructure, offer the prospect of affordable, reliable net zero emissions energy for vehicles.

Biogas covering gaseous fuels such as biomethane or biopropane recovered from renewable sources have an important role to play in decarbonising Australian energy

³ Scania, Iveco, 2019

⁴ Energies, A Review on Liquefied Natural Gas as Fuels for Dual Fuel Engines: Opportunities, Challenges and Responses, 23 November 2020

applications and improving Australia's energy security. Biomethane can be compressed or liquefied to be used in natural gas or dual fuel vehicles as fuel for cars, buses and trucks.

The use of biogas as a transport fuel is steadily increasing internationally, with countries such as Sweden setting a goal of a fossil-fuel free transport sector by 2030, and biomethane is a key way of achieving this ambition⁵. GEA considers that the greater use of decarbonised gases for Australia's transport sector can contribute to cost effective emissions reduction in the medium to long term. Further, the use of biomethane for transport applications is compatible with natural gas fuelled infrastructures and technologies and therefore have the capability to accelerate the reduction of emissions with limited additional costs⁶.

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

A handwritten signature in black ink, appearing to read "John Griffiths", with a horizontal line drawn through the bottom of the signature.

John Griffiths
Chief Executive Officer
Gas Energy Australia

⁵'Biogas Opportunities for Australia', ENEA Consulting, March 2019, <https://www.energynetworks.com.au/resources/reports/biogas-opportunities-for-australia-enea-consulting/>

⁶ 'Biomethane as alternative fuel for the EU road sector: analysis of existing and planned infrastructure', M.Prussia, A.Juleaa, L.Lonzab, C.Thiela, Energy Strategy Reviews Volume 33, January 2021, 100612