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Bioenergy Australia Submission
Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard—Consultation Impact Analysis

Bioenergy Australia (BA) is the national industry association committed to accelerating Australia's bio economy. Our mission is to foster the bioenergy sector to generate jobs, secure investment, maximise the value of local resources, minimise waste and environmental impact, and develop and promote national bioenergy expertise into international markets.

This submission from Bioenergy Australia is on behalf of the Cleaner Fuels Alliance (CFA). This alliance was founded to accelerate the development and deployment of a renewable liquid fuels industry in Australia as a means to deliver meaningful social, environmental, and economic benefits. Individual members of the alliance will be providing more detailed submissions specific to their business and expertise.

Australia's Bioenergy Roadmap (ARENA, November 2021) outlines how, by the start of the next decade, Australia's bioenergy sector could contribute to around $10 billion in extra GDP per annum and 26,200 new jobs, reduce emissions by about 9 per cent, divert an extra 6 per cent of waste from landfill, and enhance fuel security. Now is the time to capitalise on these opportunities and we urge the Government to support the development of renewable liquid fuels alongside a new vehicle efficiency standard.

We thank the Government for the opportunity to provide feedback on the Cleaner, Cheaper to Run Cars: The Australian *New Vehicle Efficiency Standard* (NVES) consultation. We support an ambitious approach that recognises the need to implement strong measures that support Australia's Net Zero 2050 commitments, while also ensuring Australians have access to affordable clean technology solutions, tailored to their needs.

While the NVES will have an impact on reducing CO2 and noxious emissions across the light vehicle fleet, this policy alone will fall short in achieving significant emission reductions across the transport sector. We submit the standard must be complemented by a suite of policies supporting alternative emission reduction pathways, including the development and deployment of renewable liquid fuels – fuels that play a major role in decarbonising the broader transport sector while promoting consumer choice and supporting existing products.

We recommend the Government considers the immense opportunities offered by renewable liquid fuels and highlight the following benefits:

1. Renewable liquid fuels are a key decarbonisation opportunity

Renewable liquid fuels can act as drop-in replacement fuels, that burn in combustion engines, just like traditional fossil fuels, but cleaner and releases fewer particulate emissions. They have lower carbon intensity as they derive from existing atmospheric carbon meaning they can contribute greatly to decarbonisation when used as a replacement for traditional fuels.

For example, renewable diesel offers an excellent, tested and readily available direct replacement for mineral diesel, and depending on the feedstock diesel can reduce lifecycle emissions by 75-95 per cent[1], and tailpipe emissions by around 4 per cent.[2]

Biodiesel (which differs from renewable diesel[3]) also produces less carbon dioxide emissions than oil-based fuels over the full lifecycle of production and use. Biodiesel can lead to reduced tailpipe emissions, and depending on the feedstock, the replacement of 1 litre of fossil diesel with 1 litre of B100 biodiesel can result in an 86 per cent reduction in carbon dioxide equivalent emissions (or at least 15% for B20).[4]

Ethanol also burns cleanly, lowers emissions, and improves the efficiency of combustion by providing additional oxygen (it is known as both an octane enhancer and oxygenate). Most petrol in the United States is blended with ethanol to produce E10 (10% ethanol, 90% petrol). Over 95 per cent of gasoline sold in the United States is E10.[5]

Furthermore, a California Renewable Transportation Alliance report revealed that, in 2022, 97 per cent of the fuel used in gas vehicles in California consisted of renewable natural gas or biogas. This shift contributed to carbon savings equivalent to removing 965,796 gasoline-powered cars for the year.[6]

Additional benefits of renewable fuels include improved air quality through reduced pollutants and the potential to produce other sustainable products, such as Sustainable Aviation Fuel (SAF), a product that has been recognised as an essential lever to reduce emissions in the aviation sector.[7]

The Transitioning Australia's Liquid Fuel Sector: The Role of Renewable Fuels Report also highlighted the following decarbonisation opportunities:

- Replacing just 6 per cent of petrol with bioethanol, based on targets, would be the equivalent of taking 730,000 vehicles off the road; and

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[1] Industry Letter, 'Open Letter to The Hon Chris Bowen MP - Minister for Climate Change & Energy' (2023).
[2] Transport for NSW, 'Renewable Diesel' Knowledge Hub webpage.
[3] US Department of Energy, Biodiesel and Renewable Diesel
[4] Lifecycles, 'Greenhouse gas and sustainability footprints of current and future biofuels for Queensland' (2016)
[5] Ethanol as Australia's Octane Enhancer - Implementation of the Aromatics Pool Reduction in Australia's Fuel Standards (2021)
[6] California Renewable Transportation Alliance, 'RNG: A Proven Solution for Decarbonizing California's Transportation Sector'.
[7] Department of Infrastructure, Transport, Regional Development and Communications, 'Aviation Green Paper' (2023)

- Replacing just 2 per cent of diesel with biodiesel or renewable diesel, based on current targets, would be the equivalent of taking 29,000 rigid trucks off the road.

The transport sector will largely continue to rely on liquid fuels, as hydrogen and electrification are not yet readily available or economically feasible to fully support this sector in time to help us achieve our net-zero targets. Renewable liquid fuel-powered vehicles allow us to decarbonise combustion engines now, rather than waiting to take action until other alternative solutions are available.

2. Renewable liquid fuels support existing technologies and vehicles

The lifespan for the infrastructure and vehicles used within the transport sector can be quite long and upgrading infrastructure or entire vehicle fleets is impractical, time-consuming and highly expensive. For example, Australian trucks have notably long lifespans and it is estimated that 98 per cent of trucks in 2030 will still be operating on diesel. Therefore, an immediate and easily implementable solution is required to ensure that today's fuel reliant technologies can be decarbonised. That solution is renewable liquid fuels, which are compatible with existing infrastructure, have convenient storage and handling properties and provide a least cost option while also contributing towards emission reductions from a lifecycle and intensity view. Thus, renewable liquid fuels uphold the principle of consumer choice, enabling Australians to purchase the vehicles that suit their preferences, needs, and affordability, while still contributing to emission reduction.

Renewable liquid fuels also offer decarbonisation potential beyond the light vehicle fleet, with applications in heavy transport, construction, maritime, mining, rail, agriculture, and defence. These fuels enable existing vehicles to continue operating throughout their working life and ensure the viability of current refilling infrastructure, eliminating the need for additional investments.

3. Renewable liquid fuels leverage and support Australia's agriculture industry

The development of renewable liquid fuels in Australia has the potential to contribute significantly to the country's economic prosperity in the immediate and long term. It will generate substantial regional employment in feedstock-abundant areas, diversify incomes, foster economic growth through domestic feedstocks, improve regional community resilience, and enhance Australia's fuel security.

Regional Australia stands to both drive and benefit from the development of a domestic renewable liquid fuels industry due to the sustainable utilisation of renewable liquid fuel feedstock including fats and oil feedstocks (oilseeds, tallow and other rendered animal fats, used cooking oil) and lignocellulosic feedstocks (straw, cotton trash, sugarcane bagasse, forestry, urban waste streams, sugarcane, grass, woody biomass and algae).

The capabilities of our agricultural feedstock cannot be overstated, representing an estimated 41 per cent, or 1066PJ per annum, of the nation's bioenergy resource potential by 2030. Thus, by leveraging our agricultural might, Australia could add $10 billion in GDP per annum over the next decade with the development of a mature bioenergy sector, along with 26,200 new jobs, predominantly in

regional Australia (The Australia's Bioenergy Roadmap (Australia's Bioenergy Roadmap, November 2021).

There is a growing global market for renewable liquid fuels and Australia has the opportunity to be a key player. However, despite possessing a diversity of renewable liquid fuels feedstocks, without a viable domestic renewable fuel industry, Australian growers and producers will continue exporting their raw material to foreign refiners, at times locking into long term offtake agreements that sends millions of dollars to the global market to be valued added offshore. As a result, Australia risks becoming a net importer of renewable fuels derived from feedstock abundantly availability on its own soil. This is a real and immediate threat with Australian feedstocks already being exporting, notably:

- There has been over a 30,000 per cent increase in the export of used cooking oil from Australia to the USA from 2020 to 2022.
- Approximately, 60 per cent of the canola exported from Western Australia to Europe is converted into biofuels thanks to the incentives for bioenergy production and use in the EU.
- Australia is already exporting around 72 per cent of the total value of its agricultural, fisheries and forestry production.

It is well past time that we secure this economic opportunity for our domestic market.

4. There is already demand for renewable liquid fuels in Australia

Australia has already witnessed substantial interest in renewable liquid fuels, reflecting a clear demand for these products:

- Bp has committed to transitioning its former oil refinery site into an energy hub that produces sustainable aviation fuel (SAF) and Hydrogenated Vegetable Oil (HVO), also known as renewable diesel.
- Cleanaway have launched their HVO100 demonstration, with two vehicles to be powered by Neste's 'Neste MY Renewable Diesel', HVO100, made exclusively from used cooking oil and that reduces greenhouse gas (GHG) emissions by 91 per cent.
- Ampol has committed to a renewable diesel trial with Hanson, as their first customer partner. This trial will feature a blend comprising 20 per cent renewable diesel and 80 per cent ultra-low sulphur diesel, along with Ampol's Amplify additives.
- Two state-of-the-art buses have been delivered to Queensland's sugar capital, Mackay, in a trial run by Scania, Translink and the Department of State Development. The new buses will be fuelled by a 95 per cent bioethanol blend (E95), which means it will burn more efficiently and produce fewer emissions than traditional petroleum-based diesel or petrol.
- Lendlease has realised the decarbonisation potential of renewable diesel and is extensively using it to substitute mineral diesel both internationally and in Australia with no operational or productivity issues during the full range of construction activities. In Australia, 61,552L of renewable diesel (HVO) has been used on projects including NSW Government Powerhouse Parramatta and New Performing Arts Venue (Queensland Performing Arts Centre), with an

additional estimated use of 86,000L on 2 additional projects commencing from February 2024.

- Renewable diesel also plays a significant role in mining transportation, being a key resource for material transport processes such as the hauling of ore and overburden. bp and BHP have collaborated on a trial to power haul trucks and other mining equipment at their Yandi iron ore operations in Western Australia using renewable diesel. Rio Tinto has also successfully completed the full transition of its heavy machinery from fossil diesel to renewable diesel at its Boron operation in California. There's potential for this transition to extend to their sites in Australia.[8]
- Wilmar Sugar and Renewables, Australia and New Zealand's largest manufacturer and marketer of raw and refined sugar products, has swapped conventional diesel for renewable diesel in a landmark trial aimed at reducing greenhouse gas emissions in its locomotive fleet.[9]

5. Domestic renewable liquid fuel production can promote fuel and supply chain security

The onshore production of renewable liquid fuels increases the resilience and security of Australia's fuel supply chain, reduces reliance on imported fuels, and enhances our sovereign capabilities. The inherent risks of leaving development, processing and deployment of these critical fuels to our global peers will leave Australia at the mercy of foreign markets, geopolitics, and distance.

A domestic renewable liquid fuels industry is critical for Australia to meet its emission reduction targets. This industry not only complements the benefits of the NVES, but also serves as a versatile solution, addressing key issues such as: consumer choice (by allowing consumers the flexibility to continue using vehicles that align with their lifestyle and preferences); supporting the ongoing operability of legacy vehicles, including utes and SUVs (as these fuels can operate within existing vehicles without the need for significant upgrading); and product availability (providing consumers with a broader range of vehicle choices while still reducing emissions).

As a replacement for traditional fuels, renewable liquid fuels will benefit both new and existing vehicles, facilitating a smoother and more inclusive transition toward cleaner energy. Supporting the development of a renewable liquid fuels industry alongside the NVES is integral to achieving a comprehensive and sustainable transformation in Australia's transport sector.

While the NVES is key to reducing emissions in our future fleets, decarbonising our existing fleets is an essential step for Australia in order to meet its emission reduction targets on time.

We strongly recommend the Government supports the development and adoption of renewable liquid fuels in Australia alongside the NVES.

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[8] RioTinto, Rio Tinto Kennecott to fully transition to renewable diesel (2023)
[9] Wilmar Sugar and Renewables, Media release: Trialling Renewable Diesel (2023)

Thank you for the opportunity to provide this submission. Please send any comments or queries to myself at [redacted]

Sincerely,

[redacted]

Shahana McKenzie
CEO Bioenergy Australia

Organisation questionnaire response

Privacy Setting: I agree for my response to be published with my name and position.

What organisation do you represent? (required)	Bioenergy Australia
What is your name? (required)	Georgi York
What is your position at the organisation? (required)	National Policy Officer
Please rank the proposed options in order of preference. (optional)	Option A - 0th, Option B - 0th, Option C - 0th
Briefly, what are your reasons for your choice? (optional, 3000 character limit)	NULL
Do you support the Government's preferred option (Option B)? (optional)	NULL
Do you have any feedback on the analysis approach and key assumptions used? (optional, 3000 character limit)	NULL
Briefly, describe how the NVES might impact your organisation (optional, 3000 character limit)	NULL
Who should the regulated entity be? (optional, 3000 character limit)	NULL