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Department of Infrastructure, Transport, Regional Development, Communications and the Arts

By Email: lclfconsultation@infrastructure.gov.au

Dear Sir/Madam

Re: AgForce Submission to the Future Made in Australia – Low Carbon Liquid Fuels

AgForce is a peak organisation representing Queensland's cane, cattle, grain and sheep, wool & goat producers. The cane, beef, broadacre cropping and sheep, wool & goat industries in Queensland generated around $10.4 billion in on-farm value of production in 2021-22. AgForce's purpose is to advance sustainable agribusiness and strives to ensure the long-term growth, viability, competitiveness and profitability of these industries. Over 6,000 farmers, individuals and businesses provide support to AgForce through membership. Our members own and manage around 55 million hectares, or a third of the state's land area. Queensland producers provide high-quality food and fibre to Australian and overseas consumers, contribute significantly to the social fabric of regional, rural and remote communities, as well as deliver stewardship of the state's natural environment.

AgForce welcomes the opportunity to provide a submission to the Future Made in Australia: Low Carbon Liquid Fuels (LCLF) Consultation.

AGFORCE SUMMARY OF KEY RECOMMENDATIONS:

1. Increase the capacity of our food production systems to meet future demand.
2. Government ensures an adequate feedstock market and supports calls for a National Feedstock Strategy.
3. The government to adopt a long term (50 year) and holistic approach to policy development and investment and we call for a complete Financial Business Strategy for a Low Carbon Liquid Fuel market.
4. Support existing technologies, while developing a range of domestic Low Carbon Liquid Fuel production capabilities, aligned to feedstock source of our nation.
5. Long-term tax-based production incentives that are embedded in regulation.
6. Renewable fuel refineries along the coast and in regions, leveraging existing feedstock locations.

The AgForce membership represents farmers who have supported a renewable fuels market for decades. We represent farmers with a strong focus on sustainable agriculture and seek the opportunity to be part of the renewable energy solution. Farmers can assist the government's energy transition and decarbonization strategies, including renewable fuel pathways toward the achievement of net zero emissions by 2050.

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THE LOW CARBON LIQUID FUELS OPPORTUNITY

AgForce acknowledges Australia is an existing producer and exporter of quality feedstock and that Australia's land mass, favourable climate and advanced farming practices are ideal to support and develop a domestic renewable fuel industry, as highlighted in CSIRO Sustainable Aviation Fuel (SAF) report (2023)[1] and BP response to the Aviation Green Paper (2023)[2]

Population Growth Verses Food Production

Australia's population is projected to climb to over 45 million by 2071 and the United Nations predicts global population growth will reach 9.3 billion by 2050[3]. Australia currently produces enough food to feed 75 million people[4].

To accommodate this population growth beyond 2050, agricultural food production has to increase at an average rate of 0.8% per year to ensure food security[5]. How much more will Australia need to produce to ensure both food security and fuel security for our nation?

Investment into Infrastructure and Feedstock Production to Accelerate LCLF

The government may need to consider a range of investment vehicles, funding models and the impact on Australia, similar to the energy sector's renewable energy zone roll-out, to scale a renewable fuel market.

Technoeconomic modelling[6], suggests a large-scale Sustainable Aviation Fuel (SAF) plant producing 300 Megalitres (ML) is equivalent to only 3% of the domestic SAF market (10,000 ML), (according to CSRIO SAF Roadmap). On the basis of this calculation, the government would need to commission more than 30 (300 ML) bio-refineries to meet domestic SAF Production. It would need another 160 plus bio-refinery plants to meet bio-diesel domestic demand.

One feedstock example; utilising sugarcane production as a feedstock source for bio-refinery plants, the same technoeconomic modelling, suggests a large plant requires approximately 15% of 30 million tonne of sugarcane produced in Australia or $4.5 million tonnes. A 10% drop in renewable fuel supply for SAF and Biodiesel combined (60,000 ML), would require 3 times as much sugarcane be produced in Australia.

There may be an assumption that feedstock supply will naturally be available and flow through to manufacturers. Current red and green tape restrictions on agriculture pose a real threat to agriculture's ability to assist governments meet demand and net zero ambitions. We require a strong framework to promote food production systems and remove those that hinder development. Not doing so will adversely impact agricultural feedstock and food production output.

This poses a lot of questions; does Australia's liquid fuel market have a feedstock supply shortage? Are we going to redirect our current feedstock supply and export food markets to support domestic feedstock consumption? Is Australia prepared to alter its free trade agreements with the European Union and redirect current feedstock exports? What will this do for our international engagement and relationships? Do we become net feedstock importers, despite our clear agricultural advantages?

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[1] Sustainable aviation fuel opportunities for Australia - CSIRO
[2] https://www.infrastructure.gov.au/sites/default/files/documents/agp2023-submission-c202-bp.pdf
[3] Population Projections, Australia, 2022 (base) - 2071 | Australian Bureau of Statistics (abs.gov.au)
[4] Chapter 3 - Food production, consumption and export – Parliament of Australia (aph.gov.au)
[5] Outlook2012FoodDemand2050.pdf (agriculture.gov.au)
[6] Sustainable aviation fuel opportunities for Australia - CSIRO

AgForce Recommends:
The government promotes and increases the capacity of our food production systems by giving it certain 'agricultural permissions' (ie, agricultural land use – land purpose protections[7]), to meet anticipated feedstock and projected global food demand, to ensure ongoing fuel and fuel security.

AgForce Recommends:
The government ensures an adequate feedstock market **and recommends** support for the Australian Sugar Milling Council's (ASMC) call for a **National Feedstock Strategy**[8]:

"*to ensure that feedstock is used for its highest economic value, that food security and fuel security are co-optimised and that land-use planning provisions maximise the availability of feedstock, that enabling freight and logistics infrastructure is available to support LCLF production, and that the physical location of the LCLF maximises returns for those involved in the production of LCLFs, including feedstock providers".*

AgForce Recommends:
As part of the Future Made in Australia initiative, the government to adopt a long term (50 year), holistic approach to agricultural policy development and investment. The government envelop the Australian Food Story; feeding the nation beyond, food security report and 35 recommendations[9], together with Australia's 5 key fuel security measures, within the Fuel Security Act 2021[10], the transport and infrastructure/road action plan[11], the national freight and supply chain strategy (2023), the National farmers Federation – $100 billion agricultural 2030 roadmap[12], to complete an 'Financial Business Strategy' for a low carbon liquid fuel market that aligns to the legislated decarbonisation targets-net zero by 2050.

AUSTRALIAN LOW CARBON LIQUID FUEL PRODUCTION

Net zero targets, population growth and growing global demand for liquid fuel, suggests a market exists for liquid renewable fuels, regardless of the debate between biodiesel (trans-esterification) and renewable diesel (hydrogenation) production or generation 1 and 2 fuel production. The LCLF consultation paper confirms 99% of global commercial scale production of LCLF utilises mature pathways focussed on production of renewable diesel for heavy vehicles.

The LCLF cannot be a one-size fits all solution and we must and should leverage our existing assets, infrastructure, road network, supply chains and align our system to feedstock location supply sources of our nation.

AgForce offers in principle support for purpose built commercial renewable fuel refinery's, capable of adapting to carbon and hydrogen feedstock supply of the area, with capability to switch to generation 2 fuels or future developed nascent LCLF production technologies, which will open up new feedstock sources.

AgForce Recommends:
The government support existing liquid fuel capabilities at purpose built commercial plants, while industry develop a range of domestic LCLF production capabilities, aligned to feedstock source of our nation, to help diversify and secure Australia's liquid fuel security.

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[7] AgForce Land Use Protection Principles · AgForce · Advancing Rural Queensland (agforceqld.org.au)
[8] https://asmc.com.au/policy-advocacy/submissions/
[9] Australian Food Story: Feeding the Nation and Beyond (aph.gov.au)
[10] Australia's fuel security - DCCEEW
[11] https://workspace.internal.dotars.gov.au/sites/EXI/NZPR/Roadmap/Planning/Public Roadmap/Transport and Infrastructure Net Zero Consultation Roadmap
[12] https://nff.org.au/wp-content/uploads/2020/02/NFF_Roadmap_2030_FINAL.pdf

PRODUCTION INCENTIVE

AgForce supports production incentive mechanisms that support a long-term view to infrastructure investment and interactions between supply and demand. We have previously supported 'ethanol' (E10) and biodiesel (B20) mandates and caution the government in following a similar pathway without mechanisms embedded in regulation and suitable market drivers.

AgForce prefers tax-based provisions and incentives embedded in regulation and mechanisms that act as levers to influence price parity ie, fuel excise or tax implications etc, similar to Brazil's ethanol production program (Proálcool)[13] or Brazil's National Biodiesel Production and use programme[14], modified to incentivise both manufacturers and farmers.

We oppose short-term incentives, offset systems[15] or condition-based production incentives eg, grants or contract for difference or accreditation and certification programs which can be manipulated over the long term to create inefficient markets that exposed Australia to cheaper imports[16].

AgForce supports the establishment of a guaranteed renewable fuel market, a suitably designed framework with production incentives, supply and demand mechanisms, enshrined in regulation, that ensures affordable fuel price parity, backed by long-term government policy and investment.

AgForce Recommends:
The government commit to long-term tax-based production incentives that are embedded in regulation over the long-term that prevent institutions from walking away or turning to cheaper imports should the international market be more attractive.

EMISSIONS AND SUSTAINABILITY CRITERIA

AgForce supports the state and federal governments emission reductions targets. Though we oppose sector-imposed emissions reduction thresholds or targets, for unintended consequences to our supply chains and agriculture production systems.

Agriculture, through innovation and resilience, has reduced its net emissions profile by 58% since 2005[17].

AgForce is focused on positive outcomes for the environment and has developed its own Environmental, Social and Governance (ESG) policy principles[18].

Sustainability of Sugarcane Crops
Sugarcane is one of the most versatile and resilient crops on the planet, capable of withstanding extreme weather events and suitable for conversion to many biproducts, including producing its own bioenergy for processing[19].

Globally, sugarcane is a high in-demand feedstock, because of its production efficiency capacities and multi-use properties ie, biomass/hydrogenation while reducing carbon emissions.

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[13] relatorio-asa (www.gov.br
[14] Sustainable aviation fuel opportunities for Australia - CSIRO
[15] Safeguard Mechanism credit units | Clean Energy Regulator (cer.gov.au)
[16] https://www.griffith.edu.au/ data/assets/pdf_file/0040/1645987/No.2019-01-On-CfDs-EPRG.pdf
[17] https://www.dcceew.gov.au/climate-change/emissions-reporting/tracking-reporting-emissions#toc_0
[18] AgForce endorses policy principles developed by the AgForce Sustainability Policy Committee on Environmental, Social and Governance (ESG). · AgForce · Advancing Rural Queensland (agforceqld.org.au)
[19] Industry Roadmap – Sugar Plus - Sugar Research Australia

Sugarcane has one of the highest sequestration rates of any crop (estimated at 66 tonnes per ha Co2). AgForce through its AgCarE program seeks to build sequestration rates into the Sugar Greenhouse Accounting (SGAF) model[20].

Future Investment into the Sugarcane Industry

The sugarcane industry has faced challenges in '*navigating strained relationships between Farmers and Millers'* and we may not reach agreement on commercial terms without regulatory support;[21] a probability of an implication affects other industry relationships too.

Despite the challenges, the government should continue to invest in the sugarcane industry, because of the continual improvement of farming practices and advances in our production systems. For example, our farmers are converting to advanced automated water irrigation practices, showing positive outcomes, reduced water consumption, improved deep drainage and reduced chemical and nitrogen loads impacting water ways[22].

Advances in Sugarcane Genome – good for Renewable Fuels

The sugar cane stick is the last major crop to be *Genome (DNA) Sequenced*[23], due to the fact its polyploid genome architecture is so complex, at 3 times the size of the human genome.

In March 2024, scientists solved the sugar cane genome. The consortium of Sugar Research Australia (SRA), CSIRO and the University of Queensland (UQ) believe this maybe the most significant advancement in sugar cane breeding.

Professor Robert Herny, UQ Professor of Innovation in Agriculture and *ARC (Research Hub for Engineering Plants to Replace Fossil Carbon),* intends to breed sugarcane with a higher carbon proportion to optimise fuel conversion and lower production costs.

AgForce Recommends:

Government investment into the feedstock input technologies, such as sugarcane industry and programs, i.e., expediting development of the sugarcane genome; new breeds, capable of supporting our feedstock supply and demands and need for nascent LCLF technology, toward a cost-effective sustainable renewable fuels market.

Demand-side mechanisms:

We support demand-side and supply-side mechanisms and options that support uptake of an efficient domestic LCLF industry and offer farmers assurance long-term markets exist for their products.

Government must create and provide long term regulatory support to a LCLF market. Without adequate domestic-push-pull demand mechanisms, there will be limited justification for domestic renewable fuel production and investment, inevitably forcing industry to import low carbon fuels (potentially, Australian-grown and exported feedstocks)[24].

Agriculture is heavily dependent on diesel into the foreseeable future[25], like other hard to abate sectors, due to the nature and size of harvesters, tractors, heavy vehicles, and our vast geographical areas. Our intensive agricultural practices are not conducive to electrification in whole, (perhaps in parts of machinery), until technology advances becomes commercial viable, the sector remains reliant on diesel.

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[20] https://planr.gov.au/calculating-greenhouse-gas-emissions https://isa.org.usyd.edu.au/education/Online-Calculator.html

[21] Sustainable aviation fuel opportunities for Australia - CSIRO

[22] Burdekin-Irrigation-Project-Automation-Irrigation-2024.pdf (sugarresearch.com.au)

[23] Complete sugarcane genome sequence opens up new era in breeding - CSIRO

[24] https://www.infrastructure.gov.au/sites/default/files/documents/agp2023-submission-c202-bp.pdf

[25] Enabling supply of renewable diesel in Australia (storage.googleapis.com

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AgForce Recommends:
The government facilitate the development of regional and coastal renewable fuel refineries; fuel hubs and manufacturing plants into modern day bio-circular economies, by leveraging existing feedstock locations[26] (as shown CSIRO SAF Report 2023), with farmers being integral to the feedstock supply and the firm market buyers of the renewable fuel produced, together with transporters, aviation and defence, alleviating pressures on these hard to abate sectors.

AgForce seek greater engagement and collaboration with policy makers to inform industry on the impacts to agriculture of feedstock supply and demand, infrastructure investment, supply chain, road and fuel network development and the impacts on regional, rural, remote communities.

[redacted]

Yours faithfully

Mike Guerin
Chief Executive Officer

[26] Sustainable aviation fuel opportunities for Australia - CSIRO