

SUBMISSION IN RESPONSE TO THE LOW CARBON LIQUID FUELS: A FUTURE MADE IN AUSTRALIA



INTRODUCTION

GrainGrowers welcomes the opportunity to provide a submission to the consultation paper on "Low Carbon Liquid Fuels: A Future Made in Australia: Unlocking Australia's Low Carbon Liquid Fuel Opportunity."

GrainGrowers is a national organisation working to enhance the profitability and sustainability of Australian grain farmers. We achieve this through our focus areas of policy and advocacy, grower engagement, thought leadership and active investment in future focused activities for all growers. Australian growers are at the heart of all that we do and the focus of our work.

The Australian grain industry is poised to play a crucial role in the development of low-carbon liquid fuels, leveraging its expertise in grain and oilseed production to contribute to a more sustainable energy landscape.

By harnessing Australia's abundant feedstock resources and fostering a domestic low carbon liquid fuel industry, we can advance our national efforts in decarbonising critical industries, improving fuel security, and supporting domestic manufacturing and economic growth in regional areas.

Developing a thriving domestic low-carbon liquid fuel industry, however, will require a comprehensive suite of supporting policies. Although Australia has significant potential to be a powerhouse in low-carbon liquid fuel production, the industry is still in its infancy and will require a range of production-side and demand mechanisms such as a National Feedstock Strategy, capital expenditure grants to encourage early-stage industry development, fuel production-side tax incentives, and demand mechanisms such as low carbon fuel standards and mandates, as well as minimum public procurement levels and community education.

THE ROLE OF THE AUSTRALIAN GRAIN INDUSTRY IN LOW-CARBON LIQUID FUELS

As global demand for renewable energy sources grows, the Australian grain industry stands to play a pivotal role in low carbon liquid fuel and fostering a more sustainable energy landscape.

Australia's skills and experience in world leading grain and oilseed production practices offers a reliable and scalable lower carbon feedstock with established supply chains.

Australia is one of the largest grain exporters in the world and grows an abundance of crops that can be used for low carbon liquid fuels such as canola and sorghum

As a net-exporter, increased domestic demand for feedstock will not impact Australian food security with approximately 70% of Australia's grain and oilseeds exported each year.

Indeed, Australia is already a major supplier of canola to the European Union biodiesel market, exporting over 1.8 million tonnes annually.

Similarly, sorghum is the largest summer crop grown in Australia and is typically exported to be used in the production of alcohol. Domestically, its most typical use is as animal feed.

Across Australia there are a number of trials underway on new non-edible oilseed energy crops such as Carinata and Pongamia which can be grown on marginal lands.

As a result of Australia's advanced farming techniques and sustainable land management practices, CSIRO research has demonstrated that Australia ranks in the lowest 15% of all countries for canola GHG emissions, with over 50% less carbon emissions than traditional fossil fuels.

BENEFITS OF DEVELOPING A DOMESTIC LOW CARBON LIQUID FUEL INDUSTRY

Decarbonisation of hard-to-abate industries:

Developing an Australian low-carbon liquid fuel industry is an important step in assisting hard-to-abate industries, such as aviation and the defence forces in their decarbonisation efforts.

The aviation industry, which heavily relies on high-energy-density fuels, faces significant challenges in reducing carbon emissions due to the current limitations of battery and hydrogen technologies for long-haul flights.

Sustainable aviation fuels which can be blended with conventional jet fuel without requiring major modifications to existing aircraft and infrastructure, offer a practical pathway to significant emissions reductions.

Similarly, although the Australian Defence Force has signed up to the Australian Government's commitment to reduce greenhouse gas emissions by 43% by 2030, it operates a range of capabilities such as jets and marine engines which have been identified as highly complex to decarbonise.

By investing in the production and adoption of low carbon liquid fuels, Australia can provide a viable and immediate solution to reducing the carbon footprint of industries such as the aviation and defence industries

Fuel Security:

Supporting a domestic low carbon fuel industry presents the opportunity to improve Australia's fuel security.

Australia is currently highly dependent on imported fuels for nearly 91% of its diesel. Indeed, since 2000 the number of domestic refineries has declined from eight to just two.

As a member country of the International Energy Association, Australia is obliged to hold emergency stocks equivalent to ninety days of net imports and have effective policies to be able to contribute to an IEA collective action. However, Australia has been non-compliant since 2012.

Fuel security remains a critical risk for grain production. From sowing crops to transporting grain to market, fuel is an essential component of the entire grain production supply. As producers of perishable essential goods, security and timeliness of fuel supply is critical. The sowing and harvest periods are especially high risk for growers as even short-term delays can significantly impact grain production.

The breakdown of the Geelong Shell Refinery in 2012 highlighted the vulnerability of the grain industry to potential fuel shortages. During this period, fuel had to be rationed and as farmers are not listed as essential users under the *Liquid Fuel Emergency Act 1984*, many growers in Western Victoria struggled to secure sufficient fuel to complete harvest.

Similarly, the 2023 Defence Strategic Review identified that Australia's reliance on imports exposes Australia to significant national security risks.

As noted in the Australia Strategic Policy Initiative's 2022 report *The Australian Defence Force and its future energy requirements*:

“Australia’s dependence on imports for liquid-fuel security places the ADF at risk. The risk isn’t whether the ADF can get to an area of operations and perform poorly but whether it can get there at all”

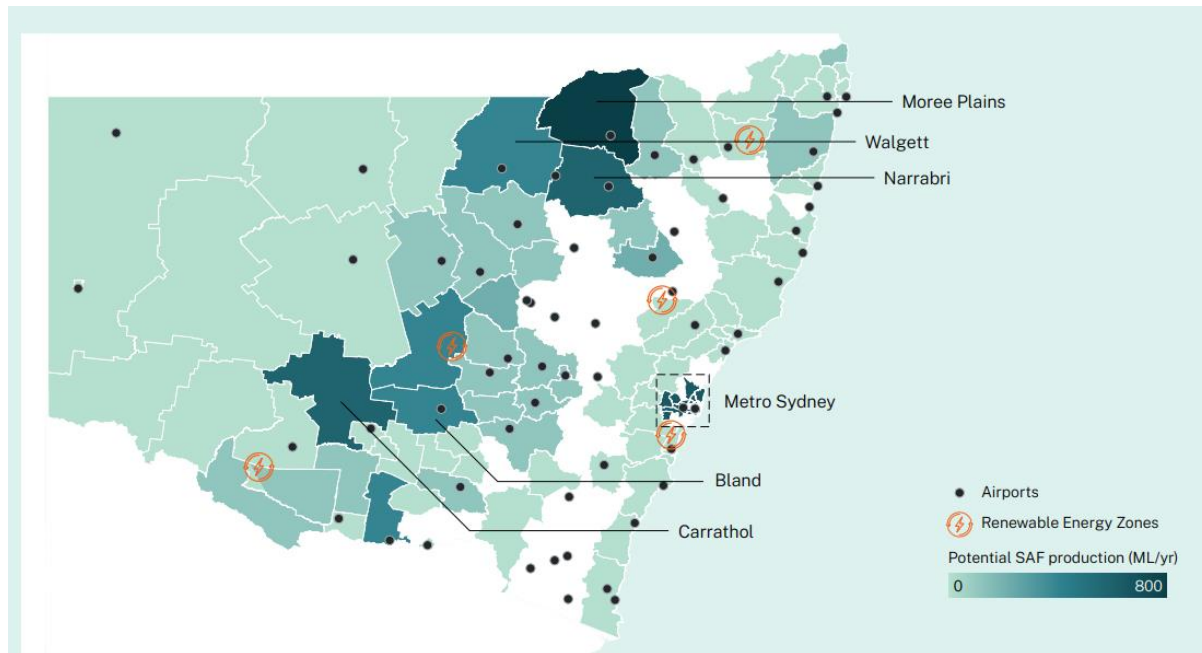
In response to the findings of the strategic review, the Department of Defence is currently exploring converting an air force base to use sustainable aviation fuel and trialling renewable diesel.

Domestically producing low carbon liquid fuels from Australian feedstocks could provide a complete sovereign solution to reduce the risk of fuel shortages or disruptions.

Domestic manufacturing in regional areas

Developing domestic low-carbon liquid fuel production also presents significant opportunities to increase domestic manufacturing in regional areas. The production and collection of feedstocks is typically concentrated in regional areas, presenting opportunities for co-locating refining and processing facilities in regional areas.

For example, the NSW Office of Regional Economic Development has identified the local council areas of Carrathol, Bland, Moree Plains, Walgett and Narrabri as potential domestic sustainable aviation fuel production locations due to their concentration of feedstock production, proximity to renewable energy zones, existing transport networks and access to skilled workers.



Source: <https://cdn.revolutionise.com.au/cups/bioenergy/files/lbtgwldqr2bgc9nw.pdf>

By processing feedstock domestically, rather than exporting, it maximises job creation. According to the 2021 *Bioenergy Roadmap*, by 2030, Australia's bioenergy sector could contribute approximately \$10 billion to the nation's GDP annually and create 26,200 new jobs.

This potential highlights the critical role of regional areas in advancing the domestic bioenergy sector and underscores the importance of nurturing local production to drive both economic and employment growth.

POLICY FRAMEWORK

Developing a thriving low carbon liquid fuel industry in Australia will require a suite of supporting policies.

Australia's low carbon liquid fuel industry is still in its infancy and will struggle to grow without long term policy certainty and significant government support.

It is vital the policy framework also addresses affordability, as low carbon liquid fuels are currently estimated to be between two and five times higher than fossil fuels.

As noted in the joint 2023 report by the Queensland Government and Deloitte, Catalysing sustainable aviation fuel (SAF) in Australia, "there is no single policy which can support a SAF value chain - a range of complementary policies that address both supply and demand are needed to deliver outcomes."

Instead, adopting a 'stackable' policy approach is vital, with production-side and demand-side policies designed in tandem and sequenced to support the industry's maturation.

While demand-side levers are important for providing the industry certainty and attracting investment, it is clear demand-side policy mechanisms alone will not support the development of a domestic low carbon fuel industry.

Without targeted support to increasing domestic production capability, Australia risks inbuilding the same dependence on imported fuels that characterises the diesel industry.

Potential Policy Mechanisms:

National Feedstock Strategy:

To harness Australia's position as a world leading feedstock producer, it is vital the Australian Government establish a joint industry-government working group to develop a National Feedstock Strategy.

As noted in the CSIRO's Sustainable Aviation Fuel Roadmap:

Although some Australian SAF plants have been announced, significant amounts of feedstock remain available for SAF production. By utilising the feedstock and technoeconomic cost modelling from the report's analysis, this opportunity equates to \$10 billion of fuel at production costs in 2025 and \$19 billion by 2050. However, feedstocks are being exported for SAF production in other jurisdictions, attracted by SAF investments and government policies.

It is vital the feedstock industries are consulted in the development of sustainability criteria and quotas for domestically grown feedstocks to ensure criteria reflect Australia's unique conditions while also aligning with similar global criteria to ensure ongoing capacity for exports

A National Feedstock Strategy could ensure Australia is able to provide a sustainable, consistent supply of raw materials necessary for producing low-carbon fuels, reducing dependency on imported feedstocks, and enhancing fuel security.

By optimising the use of Australia's vast agricultural resources, a National Feedstock Strategy would promote the efficient use of feedstocks to support rural economies and create job opportunities, positioning

Australia as a leader in the global low-carbon energy market and contributing significantly to national emission reduction targets.

Capital Expenditure Grants:

Similarly, capital expenditure grants are pivotal for encouraging early-stage industry development of a domestic low carbon liquid fuel industry.

A report by the CEFC and Arena, *Biofuels and Transport: An Australian Opportunity* identified that the investment required by production facilities alone in Australia is estimated at between \$25 billion and \$30 billion.

Although Australia does have some domestic low carbon liquid fuel production capability it is very limited and geographically concentrated.

Grants can address the high cost of acquiring, constructing or upgrading physical assets in Australia which presents a significant barrier to new entrants and adopting new technologies.

Similar grants have been provided in other jurisdictions internationally including the UK's Green Fuels, Green Skies Competition which offered £15 million in grant funding to support early-stage development of SAF plants and in Japan, where its Green Innovation Fund awarded ¥114.5 billion of grants to pilot projects developing e-fuel, SAF and low carbon fuel technologies.

To harness the ability of Australia's leading feedstock production, the grants should be focused not just on refining infrastructure but the downstream supply chain such as expanding domestic oilseed crushing capacity, which is currently only enough to meet domestic demand for vegetable oil.

Production tax incentive/credits:

Production mechanisms such as fuel production tax incentives and credits can play an important role in encouraging increased domestic production of low carbon liquid fuel by de-risking long term investment and providing long term stability and confidence for continuous production.

These measures can assist in addressing the cost premium associated with low carbon liquid fuels supply by addressing operating expenditure and revenue challenges for early mover projects.

By linking incentives to emission intensity, these mechanisms can maximise emission reductions, encouraging fuel producers to adopt the most effective low-carbon technologies.

Furthermore, the relatively simple design of these mechanisms allow for quick implementation, enabling faster transitions towards low-carbon fuel solutions.

Demand-side mechanisms including low carbon fuel standards and mandates

Similarly, demand-side mechanisms such as low carbon fuel standards and mandates can provide a clear market signal, encouraging investment in production technologies and capacity in conjunction with production side policies.

These mechanisms can create certainty regarding the adoption of future fuel types and prevent any competitive disadvantage for early adopters by 'leveling the playing field'.

Without guaranteed domestic demand, domestic producers may be compelled to export fuels to other markets.

Demand side mechanisms have been introduced in many countries in developing their low carbon liquid fuel industries. For example, the California Low-Carbon Fuel Standard requires refineries and fuel distributors to ensure that the mix of fuel sold in the Californian market meets the established targets for greenhouse gas emissions.

Minimum levels of public procurement

Setting minimum levels of public procurement can also assist the development of a domestic low carbon liquid fuel industry by generating early demand to kick start production. For example, a commitment from the Australian Defence Force, which consumes approximately 1% of Australia's total oil production, as an early cornerstone customer of domestically produced low carbon liquid fuel would provide a key market signal and demonstrate the Australian Government's commitment.

Community education:

Similarly, community education is crucial for the long-term success of domestic low carbon liquid fuel production.

CSIRO's *Sustainable Aviation Fuel Roadmap* identified that enhancing literacy levels across the value chain will be vital to the success of an Australian sustainable aviation fuel industry.

Noting the importance of social license for the development and acceptance of these fuels, effective public messaging is important for building trust and ensuring that consumers are well-prepared for the transition to low-carbon liquid fuels.

By investing in community education, stakeholders can promote informed decision-making, support policy initiatives, and ultimately drive the widespread adoption of low-carbon technologies.

CONCLUSION

The development of a robust domestic low-carbon liquid fuel industry offers Australia a practical pathway to decarbonise hard-to-abate sectors such as aviation and defence, enhance our national fuel security, and stimulate economic development in regional areas.

The Australian grain industry is well-positioned to supply the necessary feedstocks, providing a robust foundation for this emerging sector.


Achieving this vision, however, will require a comprehensive long term policy framework that includes production incentives, demand-side mechanisms, and community education.


By working collaboratively with the government, industry stakeholders, and the broader community, we can unlock the full potential of low carbon liquid fuels and ensure a sustainable and prosperous future for Australia.



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