



Aviation Green Paper Submission

27th November 2023

1. About Nufarm

Nufarm (ASX: NUF) is a global agricultural innovator developing solutions for our customers. Since its inception in 2006, Nufarm's seed division Nuseed has been at the forefront of oilseed innovation supporting sustainable food and renewable fuels production in Australia and beyond. Nuseed sells its products in more than 30 countries.

Horsham, in regional Victoria, is home to one of Nuseed's three world-class innovation centres supporting our seeds product development and breeding programs. The 2013 opening of the Nuseed Innovation Centre in Horsham accelerated development of canola varieties tailored to Australian conditions. This investment has supported the expansion of local canola production, the [second-most valuable crop](#) to the Australian grains industry, with one in every two hectares of the crop planted in Australia using our genetics.

Nufarm is developing a bioenergy platform to scale up production of the feedstocks to meet the growing demand for renewable fuel. Our [global partnership](#) with bp will help us meet this demand by processing feedstocks into renewable fuels for end users including the aviation industry.

2. Agriculture's role in sustainably decarbonising aviation

We appreciate the opportunity to make a submission to the Aviation Green Paper consultation. This submission addresses section 5.2 'Sustainable aviation fuel' and outlines the critical role that crop-based feedstocks can play in maximising aviation's contribution to net zero.

Nufarm believes Australia has the natural resources and agricultural capability to produce the crop-based feedstocks essential to sustainably meeting the growing demand for sustainable aviation fuel (SAF). Crop-based feedstocks can meet the SAF sustainability requirements identified in the Green Paper: "...must be sourced in a way that does not deplete natural resources, can be continuously and repeatedly replenished and produce fewer carbon emissions than conventional jet fuel."

Locally produced renewable fuels will help decarbonise hard-to-abate sectors, strengthen Australia's fuel security and support our net-zero transition. The [Sustainable Aviation Fuel Roadmap](#) recently published by CSIRO and Boeing concluded: "Producing liquid fuels from local feedstocks can reduce the reliance on imports, where 90% of liquid fuels are presently sourced for Australia." The roadmap projects that by 2025, Australia will have enough feedstocks to produce 60% of local jet fuel using biogenic feedstocks and is estimated to rise to 90% by 2050.

Australian farmers can both drive and benefit from the energy transition through the sustainable production of biogenic feedstocks including sugar cane, sorghum, agricultural residues, tallow and oilseed crops such as canola.

There are emerging solutions such as Nufarm's Carinata (a brassica similar to canola), that will enable Australian farmers to meet the rapidly rising demand for renewable feedstocks while improving their productivity and sustainability. (Next section provides more detail on Carinata).

Our globally competitive agricultural industry can support the decarbonisation of the economy, strengthen our food and fuel security as well as create jobs for rural and regional Australia. Australia has the natural resources and an agricultural sector with the capabilities and [sustainability credentials](#) to meet the growing demand for renewable feedstocks while minimising or avoiding land use change such as deforestation.

Australia's transition to a SAF producer and consumer will deliver benefits beyond the three identified in the Green Paper. These additional benefits include: a) Providing new income sources and agronomic solutions for Australian farmers; b) Utilising Australian-grown feedstocks exported for use in European renewable fuels to instead support local decarbonisation; c) Accelerating the transition from first generation renewable fuels and feedstocks to more advanced lower carbon feedstocks and fuels.

3. Oilseeds as essential sustainable feedstocks

Australian farmers already provide feedstocks to support the decarbonisation of transportation in Europe. About 60% 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. In September 2023, the [European Commission reapproved](#) the use of Australian canola in European biofuels based on a CSIRO report that demonstrated the local canola industry’s ‘low emissions credentials’.

Without a viable domestic market, Australian farmers will continue to sell their feedstocks to more lucrative international markets.

Sustainably produced oilseeds, both edible and non-edible, will remain critical feedstocks for renewable fuel production. As we scale production to meet demand, it is imperative that we cultivate oilseeds that minimise or avoid the indirect land use change that can result from increased pressure on, and demand for, agricultural lands.

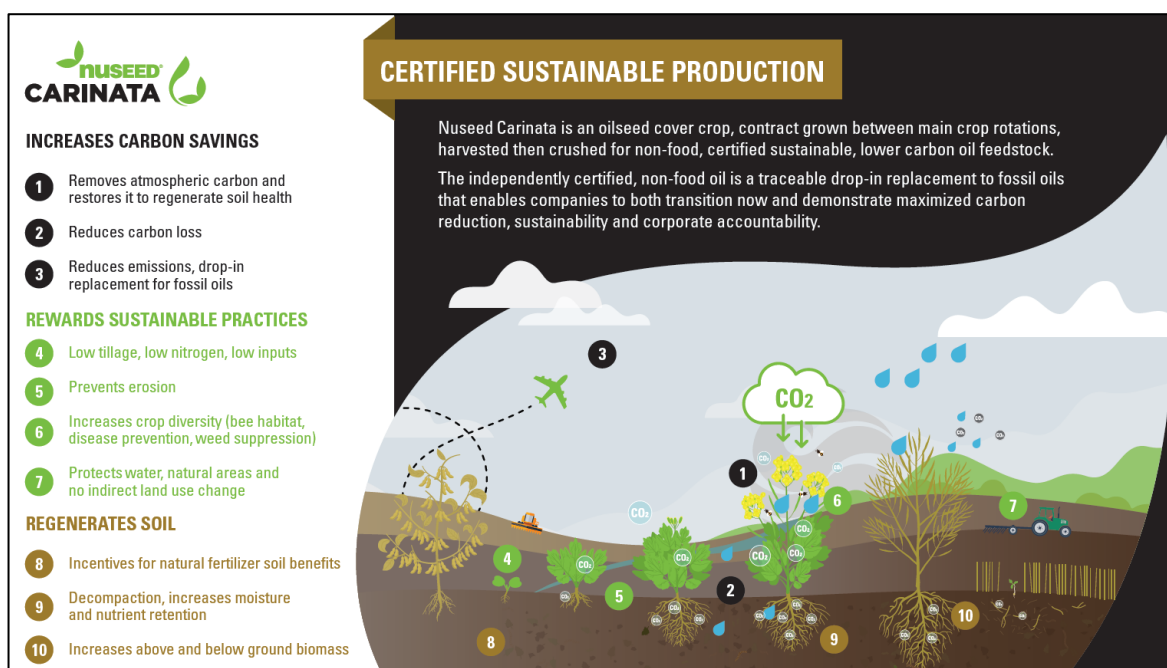
The CSIRO/Boeing SAF Roadmap highlights the potential for non-edible oilseeds such as Carinata to meet bioenergy feedstock demand: **“Non-edible oilseeds offer the opportunity of cultivating and utilising crops that do not have to compete with food markets and can use marginal or degraded land.”**

[Nufarm’s Carinata](#) is a non-food oilseed cover-crop, contract grown between main crop rotations, harvested then crushed into an independently certified sustainable lower carbon oil feedstock. It does not compete with food or contribute to land-use change as it is grown under contract as a cover or secondary crop and can grow on degraded land.

Nufarm’s Carinata removes atmospheric carbon and restores soil carbon as it grows. It also protects soil from erosion and nutrient loss, increases below and above ground biomass to regenerate soil, as well as supports biodiversity through increasing pollinator habitat and crop diversity. **A co-product from the Carinata oilseed crush is a high protein meal which can supply the growing market for high quality animal feeds, supporting our food security.**

Nufarm’s Carinata can help decarbonise the transportation and aviation sectors now. **It is a scalable, lower carbon drop-in replacement for fossil oils that enables transport sectors to decrease carbon without retrofitting existing fleets.**

The development of the Nufarm’s Carinata program in Australia is underway and we are determining the fit for the crop in the local agriculture system. Hybrid trials continue and we are planning to undertake commercial trials in 2024.



4. Policy principles and recommendations

Well-designed policy can generate robust demand for lower carbon liquid fuels such as SAF, driving the development of a local renewable fuels market into which Australian farmers can deliver locally grown feedstocks. Well-designed bioenergy policy will:

- a) Ensure Australia is competitive with other markets with advanced bioenergy industries and provide a level playing field for all industries and technologies.
- b) Foster a market-based and technology-neutral environment to ensure Australia can attract investment to quickly scale sustainable renewable feedstock production and processing.
- c) Encourage innovation to accelerate the transition from first generation biofuels and feedstocks to more advanced lower carbon feedstocks and fuels that demonstrate sustainable carbon mitigation throughout production and over time.
- d) Address energy transition challenges without compromising Australia's food security or environment.

These policy recommendations will drive the rapid development of a responsible, globally competitive renewable fuels industry in Australia and support the decarbonisation of the aviation industry:

1. Establish Globally Aligned Standards and Certification Schemes

- a) Ensure Australia implements globally aligned standards and certification schemes to ensure our international competitiveness. This requires the identification of the biofuels and sustainability criteria to be accepted for use in Australia.
- b) Leverage Australia's existing high standards in supply chain integrity and traceability to underpin the development of a globally credible certification system.

2. Build Domestic Demand for Renewable Fuel to Encourage Local Feedstock Production

- a) Adopt similar policy incentives that are driving demand for biofuels in other markets. For example, Australia should implement a low carbon fuel standard (LCFS) as a broad-based market approach to incentivise the development and demand for technologies to decrease the carbon intensity of fuels. Increased domestic demand will encourage investment to quickly scale local feedstock production.
- b) Maximize incentives for renewable fuels under existing policies such as the Safeguard Mechanism. To achieve this, adopting a market-based accounting approach under the National Greenhouse Energy Reporting Scheme will allow safeguard entities to claim the full emissions reductions for biofuels delivered using shared pipework or tanks. Establish a life-cycle based emissions reporting system to underpin additional policy such as an LCFS.
- c) Commit the Australian Government to procurement targets for Defence and other departments to purchase biofuels to send a clear signal to the market and lock in a baseline of demand.

3. Strengthen Agriculture's Role in Sustainable Feedstock Production

- a) Allocate government funding to research and development, capital grants and concessional loans to support sustainable biogenic feedstock innovation, aggregation and productivity.
- b) Encourage proactive government advocacy to farmers highlighting their crucial role in sustainably producing feedstocks for biofuel production. Policy should also reward the adoption of sustainable farming practices to regenerate soil, improve biodiversity and increase GHG savings.
- c) Collaborate with agricultural industry bodies and diverse thought leaders to communicate to the community the environmental, economic and sovereign capability value of utilising locally grown feedstocks. Reinforce the capability of Australian agriculture to sustainably produce food and fuel.

BIOFUEL BOOSTS TRANSITION

They remain critical for hard-to-abate sectors like aviation



GREG HUNT

Somewhat hidden in the shadow of the intense focus on electrification is the reality that liquid fuels account for a substantial proportion of Australia's total energy usage.

Bioenergy Australia estimates that 45 per cent of Australia's total energy use comes from liquid fuels. Liquid fuels will also remain a critical energy source for sectors such as aviation, where electrification and hydrogen power will not be viable options for long-haul flights for the foreseeable future.

Decarbonising the liquid fuels we will use for decades to come is not a niche solution – it is a scalable, cost-effective way to quickly reduce emissions from hard-to-abate sectors such as transport, marine and aviation. It is also an opportunity to reduce Australia's reliance on imported fuels.

The urgency of the energy transition was reinforced by the

government's recently released aviation green paper, which identified the role of sustainable aviation fuel (SAF) as "one of the main levers to reduce aviation emissions in the immediate and longer term".

Australia's globally competitive agriculture sector is well-placed to both drive and benefit from the energy transition.

Realising this opportunity, though, requires a better understanding of the role Australian farmers can play and the policy settings essential to ensure a viable domestic market into which they can supply their feedstocks.

First, we need to do more to recognise that Australian farmers are already providing feedstocks to support the decarbonisation of transportation in Europe. Most of the canola Australia exports to Europe is converted into biofuels thanks to the incentives for bioenergy production and use in the EU.

Second, there is enormous potential for locally produced renewable fuels to help decarbonise hard-to-abate sectors and strengthen Australia's fuel security, as highlighted in the green paper and the SAF road map recently published by CSIRO and Boeing.

The green paper calls out several benefits of expanding domestic SAF production. These include liquid fuel security and sovereign capability, local options for decarbonisation, jobs and development for the regions and helping Australia become a



Liquid fuels can reduce our reliance on imports

renewable energy superpower.

The CSIRO road map concluded that producing liquid fuels from local feedstocks can reduce our heavy reliance on imports, which currently account for 90 per cent of Australia's liquid fuels. Australia will have enough biogenic feedstocks to produce 60 per cent of local jet fuel by 2025, according to the road map.

Biogenic feedstocks including sugar cane, sorghum, agricultural residues, tallow and oilseed crops will need to do some heavy lifting in the energy transition. According to the International Air Transport Association (IATA), the global aviation sector will require about 450 billion litres of SAF to deliver on net-zero commitments by 2050. The current global SAF market is just 7.5 billion litres.

Third, Australia has the natural resources and the agricultural capability to meet the growing demand for renewable feedstocks without displacing food or contributing to land use change such as deforestation. Addressing our energy transition challenges should not compromise our food security or our environment.

The road map highlights the potential for non-edible oilseeds like Carinata, similar to canola, to meet bioenergy feedstock demand as they offer the opportunity to grow and use crops that do not have to compete with food markets or contribute to land use change. The crop can also help farmers improve farm productivity, regenerate their soil and enhance biodiversity. Seeing the possibility for agriculture to meet

the growing demand for biofuels without displacing food crops motivated Nufarm to partner with BP, which will process our Carinata into a "drop-in" biofuel that replaces fossil fuels for planes and heavy transport without the need to retrofit engines.

Finally, new solutions and markets allow farmers to diversify their income through supplying these sustainable feedstocks to new policy-enabled markets.

Against this backdrop, well-designed policy becomes vital and should address four areas.

The first is that policy settings should foster a market-based and technology-neutral environment to attract investment. This approach will also accelerate the transition from first generation biofuels and feedstocks to more advanced and more sustainable lower-carbon feedstocks.

The second priority is to ensure Australia has globally aligned standards and certification schemes to ensure we remain internationally competitive. This requires the identification of the biofuels and sustainability criteria that will be accepted for use in Australia.

The third priority is to quickly build local demand for renewable fuels so farmers have a well-functioning local market to sell their feedstocks. Without a viable domestic market, Australia will miss out on the opportunity to leverage its own homegrown climate solutions, and farmers will continue to

sell their feedstocks to more lucrative international markets.

Establishing a low-carbon fuel standard as a broad market approach to incentivise the development and demand for technologies will help decrease the carbon intensity of fuels.

Adopting a market-based accounting approach would ensure Safeguard Mechanism entities that purchase biofuels are able to claim their full emissions benefit. This would lower the abatement cost for safeguard entities and support demand for biofuels.

Finally, procurement targets to purchase biofuels for Australian government departments such as Defence would send a strong signal to the market, not to mention locking in a baseline of demand.

Recent bioenergy announcements from federal and state governments are encouraging. We must accelerate this momentum to help Australia catch up with other countries and to locally produce lower-cost renewable fuels.

The intensifying squeeze on feedstock demand will collide with increasing competition for investment from other jurisdictions that have more advanced bioenergy industries.

Acting with a sense of urgency will ensure farmers can meet this demand, strengthen our food and fuel security and create jobs for rural and regional Australia.

Greg Hunt is Nufarm's managing director and CEO.