

Background – SAF and GrainCorp

- Renewable fuels, including Sustainable Aviation Fuel (SAF) presents an enormous environmental, economic and fuel security opportunity for Australia, with decarbonisation-driven demand for liquid fuels growing sharply.
- Demand for SAF is growing offshore via voluntary means, incentive-based supply schemes (such as in the US) and Government mandates (such as in Europe) presenting an opportunity, as well as a threat for development, of an Australian SAF industry.
- GrainCorp submits that there is significant opportunity for Australian-made SAF:
 - SAF is identified as the only plausible decarbonisation tool for the aviation industry over the next 20+ years;
 - HEFA is identified as the leading SAF production pathway on grounds of cost competitiveness, feedstock availability, technology maturity and industry “know how” to invest at scale;
 - Australia has an exportable surplus of HEFA-compatible feedstocks, including tallow, used cooking oil (UCO) and crop oils.
- GrainCorp is a leading supplier of renewable fuel feedstocks in Australia and New Zealand, as the largest oilseed crusher, national UCO collector and tallow exporter. The company also manages an international supply chain underpinned by leading quality assurance standards.
- GrainCorp is eyeing investments in SAF feedstock growth, including conducting feasibility of a greenfield oilseed crush in West Australia (WA).

SAF feedstock overview

- Australia produces an exportable surplus of HEFA-compatible renewable agricultural products each year:
 - 500-600,000 tonnes of tallow and UCO, 80%+ exported to renewable fuel markets in Asia and US;
 - Australia grows on average 4.5 million tonnes of canola each year, 30% processed locally, 70% (average 3.1 million tonnes) exported (including 75% processed offshore into biofuels);
 - Australia grows minimal volumes (less than 100,000 tonnes) of other oilseeds such as soybeans, sunflowers and safflower;
 - Growth potential for canola and novel crops (such as carinata and camelina) to expand SAF feedstocks in a complementary manner with existing food supply chains.
- SAF can also be produced from other agricultural outputs, such as cellulosic (e.g wood, straw) and ethanol-based feedstocks (e.g sorghum, sugarcane), however, these are less accessible and/or available compared with canola for crop oil.
- Australian growers are well placed to lead the way as feedstock suppliers, using arable farming land for low carbon intensity cropping to supply raw commodities for crushing into crop oil for SAF production.

What does an Australian SAF industry look like?

- An Australian SAF industry would “on-shore” an end-to-end value chain from farm to first stage processing such as oilseed crush, to SAF processing, to airports. This requires the development of Australian-based oilseed crushing and HEFA refining facilities.

SAF value chain – **without** Australian crush for renewable fuel



SAF value chain – **with** expanded oilseed crush for renewable fuel



- Growth in Australian tallow and UCO feedstock volume is limited, while growth in local oilseed crushing to first stage value-add Australian oilseeds has significant potential.
- A domestic SAF sector would create another market for farmers to sell their produce into, where they have a comparative advantage by virtue of proximity and diversifying their exposure to global feedstock markets.
- Australian growers already produce a significant exportable surplus of canola seed, incl in WA where 95% (or an average 2.2 million tonnes) of canola production is exported, primarily to Europe for biofuels, generating around \$1.2 billion in income.
- Australian based oilseed crushing will enable viability for the SAF industry through:
 - ✓ Reduced supply chain costs
 - ✓ Reduced GHG emissions from shortened freight legs
 - ✓ Reduced carbon intensity outcomes from Australian canola that is recognised under the CORSIA framework as one of the best (least) CI scores globally
 - ✓ Increased feedstock security for local SAF production
 - ✓ Value add processing contributing to GDP growth

How to grow a successful Australian SAF industry

- The right policy settings are needed if Australia is going to reap the benefits of a local SAF refining capability.
- The following elements are crucial pillars for the success of an Australian end-to-end SAF value chain:
 1. **Feedstock from growers and suppliers**, supported by Australian certification schemes, favouring “home-grown” produce such as canola crop oil, credible markets and “value for money” signals to incentivise production and favourable carbon intensity outcomes
 2. **Expansion of first stage processing capacity** including oilseed crushing, aided by Government through capital support (such as grants and loans), growth incentives, and planning and approval efficiencies
 3. **Establishment of SAF refineries** starting with HEFA facilities, supported by appropriate feedstock policy and low emission fuel standards to underpin SAF value chain investment and local market stability
- Strong demand signals via low emission fuel standards would help the industry enormously – where currently SAF demand is voluntary and developing in an uncertain framework.
- Ensuring public value is essential to establishing a sustainable SAF industry, through favouring Australian-based investment, enhancing competition, being technologically inclusive and pragmatic about implementable projects, and ensuring equitable distribution of efforts and value.
- Australia is an expensive and complex environment for planning and construction of major manufacturing facilities. Government policy and/or mandate support is crucial in the areas of capital funding (such as ARENA, CEFC) and planning and approvals to ensure efficient uptake of investment.
- An agreed Australian process for measuring and reporting GHG emission outcomes along the value chain is important to ensure credible value recognition and transfer.
- Government support and leadership could combine with industry groups such as CSIRO, GRDC and NFF.

Aviation White Paper



- As seen in other markets around the world, a robust policy framework is necessary to support the development of a SAF sector. To best reward and incentivise growth in Australian SAF feedstock such as crop oils, a US-style market based solution is more suitable to encourage end-to-end supply chain investment and value flow (compared with Europe / Canada / Brazil / Japan style mandates applied at specific parts of the SAF value chain).