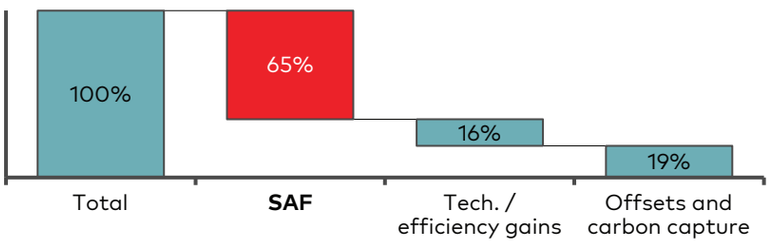
Sustainable Aviation Fuel (SAF) is aviation's key lever to decarbonise by 2050

SAF could contribute up to c.65% of the reduction in aviation emissions by 2050. No other lever has as much potential to help the industry towards net zero

Contribution to aviation emissions reduction by 2050



What is SAF?

SAF is a synthetic or biofuel derived alternative to traditional aviation fuel
It can be produced from a number of feedstocks including waste oil and fats, green and municipal waste and non-food crops. SAF offers up to a 91% reduction in CO2 emissions over the lifecycle of the fuel compared to traditional jet fuels

Analysis by Frontier Economics estimates that a genuine SAF industry would create up to 15,600 jobs by 2050, and contribute $7.6bn per year to GDP by 2050. There would also be benefits for Australia's fuel security, and the cost competitiveness of locally produced SAF versus imported SAFs

Australia requires a more supportive policy environment to encourage domestic SAF production

Australia lags other developed countries on both policy and direct investment to support the development of a local SAF industry

Summary of SAF policy environment in Australia, US, UK, Singapore, and Canada

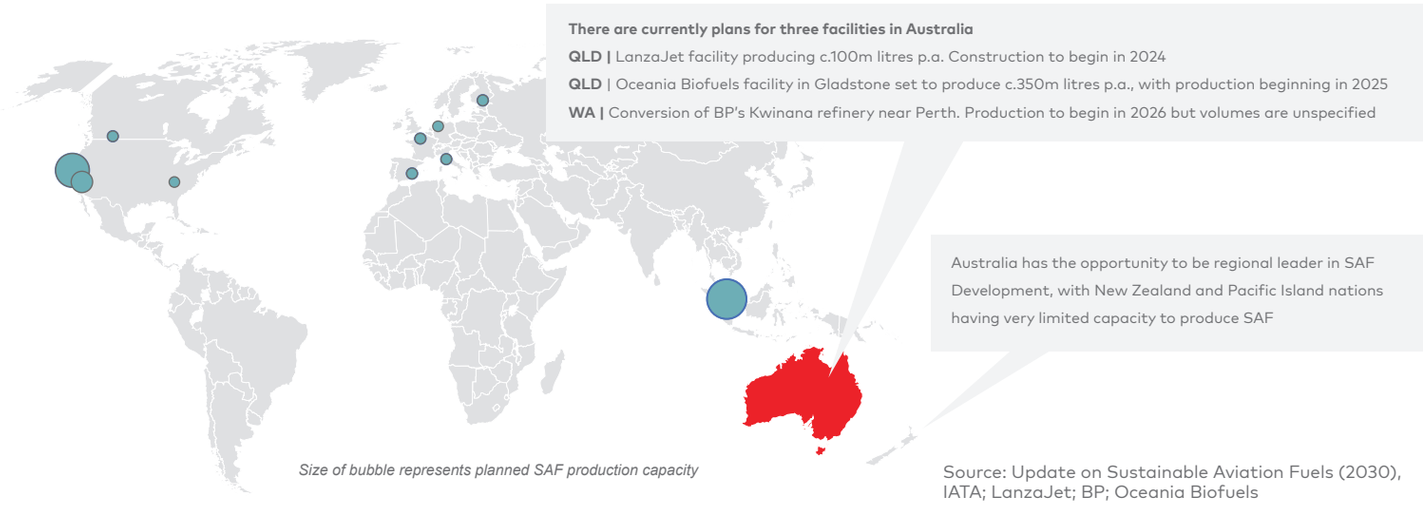
	Australia	United States	United Kingdom	Singapore	Canada
Mandates*	✗	✗	Airlines required to use 10% SAF by 2030	✗	✗
Incentives	✗	Tax credits for airlines and domestic producers California Low Carbon Fuel Standard and US Renewable Fuel Standard	Revenue certainty mechanism for SAF producers	✗	Nascent voluntary credit market under the Clean Fuels Regulation
Direct govt. investment	c.$30m in funding from ARENA (c.$4m per MT of jet fuel used p.a)	c.$7bn as part of the Inflation Reduction Act (c.$87m per MT of jet fuel used p.a.)	c.$320m from the Advanced Fuels Fund (c.$26m per MT of jet fuel used p.a.)	c.$60m fund to support sustainable air transport (c.$10m per MT of jet fuel used p.a.)	c.$550m towards a national sustainable aviation network (c.$65m per MT of jet fuel used p.a.)
Current SAF production capacity MT** p.a.	0	1-2	0	1	0.1
Feedstock availability MT p.a. of SAF produced from available feedstock, 2030 (% of total jet fuel demand)	5 (60%)	170 (>100%)	1.2 (10%)	0 (0%)	8.2 (95%)

Notes: * Japan is expected to begin mandates in 2030; ** MT denotes mega-tonnes (1 million tonnes)
Source: Government websites; L.E.K. research and analysis

No SAF is produced in Australia today

In 2022, c.240k tonnes of SAF was produced from facilities in North America, Europe, and in Singapore. This is expected to rise again in 2024

Planned renewable fuel capacity by 2030



There are currently plans for three facilities in Australia

QLD | LanzaJet facility producing c.100m litres p.a. Construction to begin in 2024

QLD | Oceania Biofuels facility in Gladstone set to produce c.350m litres p.a., with production beginning in 2025

WA | Conversion of BP's Kwinana refinery near Perth. Production to begin in 2026 but volumes are unspecified

Australia has the opportunity to be regional leader in SAF Development, with New Zealand and Pacific Island nations having very limited capacity to produce SAF

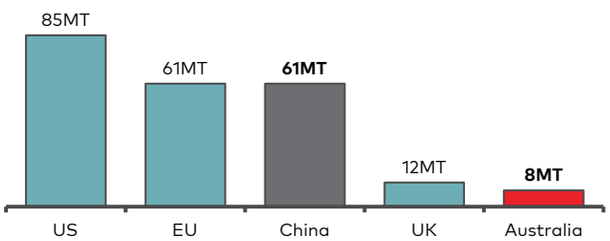
Size of bubble represents planned SAF production capacity

Source: Update on Sustainable Aviation Fuels (2030), IATA; LanzaJet; BP; Oceania Biofuels

While Australia is rich in feedstocks to produce SAF, it may face competition from other countries for those feedstocks

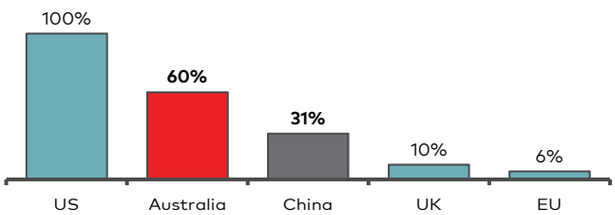
Countries with insufficient feedstocks to meet domestic production needs may look to import feedstocks from Australia, creating a risk to Australia's ability to meet domestic SAF needs

Total jet fuel demand (2030)



Other countries will have a significantly higher demand for SAF than Australia

% of total demand potentially met by locally available feedstock (2030)



Australia has enough feedstock to supply c.60% of national jet fuel demand by 2030. However, other countries will need to import feedstock (or SAF) to meet targets

Source: CSIRO; ICCT; US Office of Energy Efficiency & Renewable Energy; US Department of Energy

Therefore there are five actions Australia must take to develop a local SAF industry

1. **Stimulate demand** by introducing a Low Carbon Fuel Standard and a SAF blending mandate for Australian producers*
2. **Incentivise the private sector** by redirecting fossil fuel subsidies towards SAF uptake, for example by re-purposing the existing Fuel Tax Credit scheme for fossil fuels to redirect subsidies towards the uptake of renewable liquid fuels
3. **'Prime the pump' of the emerging SAF industry** by increasing direct investment in R&D (e.g., ARENA's bioenergy roadmap funding), and project specific funding for new production facilities
4. **Secure local feedstocks for domestic production**, in the context of competition from overseas markets
5. **Prioritise SAF as the primary output of biofuels production**, rather than other sectors which are easier to abate (e.g., using EVs or Hydrogen)

Notes: * If this approach is taken, industry should be adequately consulted and involved in the decision-making process before final positions are formed
Source: An Australian Roadmap for Sustainable Flying, A4ANZ; Qantas Budget Submission 2023; L.E.K. research and analysis