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## **Sustainable Aviation Fuel Alliance of Australia and New Zealand**

### **2023 Aviation Green Paper Submission**

Bioenergy Australia (BA) is the national industry association committed to accelerating Australia's bio economy. Our mission is to foster the bioenergy sector to generate jobs, secure investment, maximise the value of local resources, minimise waste and environmental impact, and develop and promote national bioenergy expertise into international markets.

This submission from Bioenergy Australia is on behalf of the Sustainable Aviation Fuel Alliance Australia and New Zealand (SAFAANZ), the Alliance was founded to fast-track the development, uptake and progression of SAF in the region. The SAFAANZ is a collaboration of more than 80 organisations across Australia, Asia, Europe and the USA. This submission is on behalf of the SAFAANZ and will be supported by individual member submissions relating to their specific expertise.

Australia's Bioenergy Roadmap (ARENA, November 2021) outlines how, by the start of the next decade, Australia's bioenergy sector could contribute to around \$10 billion in extra GDP per annum and 26,200 new jobs, reduce emissions by about 9 per cent, divert an extra 6 per cent of waste from landfill, and enhance fuel security. The development of a Sustainable Aviation Fuel industry in Australia could alone create approx. 8,000 new jobs and an additional 2.8 billion GDP per annum. The Aviation Green Paper acknowledges that SAF is the most advanced solution for helping aviation meet net-zero by 2050. We submit it is well-past time Australia starts capitalising on the immense opportunities SAF offers, and urgent, yet considered, government action is key.

We thank the Department for the opportunity to provide feedback on the Aviation Green Paper. Our submission outlines the aviation decarbonisation landscape including the Australian opportunity, before providing member insights to relevant sections of the Green Paper. This response primarily focusses on section five "Maximising aviation's contribution to net zero" but, we also address other key sections including opportunities in regional areas, role of emerging technologies, future workforce considerations and international aviation.

The response closes with recommendations for policy initiatives which have been informed by the SAFAANZ's work under the Jet Zero Council Workplan item number 6 – Advice on the development of a SAF industry and eco-system in Australia. These recommendations were discussed at length, at a recent workshop which was attended by Jet Zero Council members, SAFAANZ members and government representatives.

### The Australian SAF opportunity

The aviation sector generates approximately 2.5 per cent of the world's carbon emissions which could grow as other sectors continue to decarbonise with mature technologies. The ATAG Waypoint 2050 Report explains that about 70 per cent of global aviation emissions are generated from medium- and long-haul flights.

Decarbonisation of the aviation sector can no longer be a problem for other countries to solve and act on. The inherent risks of leaving development, processing and deployment of critical renewable technology to our global peers will leave Australia at the mercy of foreign markets, geopolitics, and distance. Aviation contributes essential economic and social services for Australians, and with geographical challenges and limited alternative transport modes (such as rail), aviation will remain an important enabler of Australia's economy and global connectivity.

The [CSIRO SAF Roadmap](#) projects Australian jet fuel demand increasing by 75 per cent from 2023 to 2050 and ATAG's analysis predicts that by 2050 air travel will carry over 10 billion passengers a year. For this growth to be sustainable, the sector needs to decouple growth from emissions (CO<sub>2</sub> and non-CO<sub>2</sub>) and increase access for all.

The CSIRO SAF Roadmap also estimates that in 2025, Australia will have enough feedstocks, if liberated, to produce 60 per cent of local jet fuel demand using biogenic feedstocks, growing to 90% by 2050. Today there is sufficient feedstock to supply approximately 5 billion litres of SAF production Australia (this could be enough fuel to power 640,000 Melbourne to Sydney return flights on a Boeing 737).

In a scenario where Australia becomes solely a feedstock provider rather than an integrated local processor and SAF producer, it risks missing out on the abovementioned opportunities such as local job creation for the upgrading and processing feedstocks, renewable by-products such as other biofuels and bioplastics, and broader sustainability benefits of managing a complete value chain of a bioeconomy.

The contribution of decarbonising aviation to Australia's net zero goals is essential. A strong and sustainable aviation sector that supports emissions reduction targets will require a flourishing domestic SAF industry.

### **Section 5. Maximising aviation's contribution to net zero**

The decarbonisation of aviation is intrinsically linked to the wider energy transition in Australia where low carbon energy carriers, such as renewable electricity, green hydrogen and renewable fuels, will be prioritised to meet demand in different sectors. However, it is important to note the hard to abate nature of aviation, with limited access to commercially viable low carbon technologies, when governments consider how to prioritise investment in different energy carriers. Collaborations that

foster a diverse portfolio of technologies that will mature at different times, and be suitable for different aviation segments, will be required and are based around the following four key strategies:

- **Fleet Renewal:** new airplanes provide significant efficiency gains by embedding innovation that can reduce fuel use and emissions by 15-25 per cent.
- **Operational Efficiency:** including incentivising continuous improvements in manufacturing and production, material innovation and end of life custody as well as air traffic management, is also important to decarbonising aviation.
- **Advanced Technologies:** intersecting renewable energy carriers with advanced technology will enable a diverse portfolio of low carbon aviation solutions in the future.
- **Renewable Energy Transition:** the aviation sector needs access to renewable fuels, green hydrogen and abundant renewable energy to make diverse technology options available.
- **Offsets** will play a role in the near-term as other technologies scale and in the long-term to address residual CO<sub>2</sub> emissions. Robust SAF projects that support the SAF and renewable fuels supply chain as well and regenerative and biodiversity outcomes, should be included in Australia's carbon accounting framework.

Under any scenario for the introduction of future advanced aircraft products with new energy carriers, Australia will need vast amounts of SAF, and soon, to meet the civil aviation's commitment to net zero by 2050.

SAF is widely accepted today as a drop-in replacement for fossil jet fuel that works with existing airplanes and offers the largest potential to reduce carbon emissions over the next 20 to 30 years in all aviation segments. Hydrogen and electric flight concepts are in early-stage development and not likely to be commercially available for long distance flights - where 70 per cent of aviation emissions are generated - for decades. SAF is certified technology ready to scale. Under ASTM certification SAF currently provides seven approved feedstock and production pathways to produce a drop-in fuel for use up to a 50 per cent blend. SAF can be refined from waste biomass and hydro-carbon based industrial and household waste as well as used cooking oils and fats. Depending on the pathway, SAF can reduce emissions across the lifecycle by over 80 per cent, compared to fossil jet fuel. Despite this potential, there is currently no viable domestic SAF industry in Australia.

Internationally, SAF costs currently two to four times more than conventional fuel, mostly due to limited economies of scale and feedstock costs. The jurisdictions in which a SAF industry is developing there are clear policy drivers, combinations of incentives, subsidies, and targets, that both provide clear signals to investors and contribute to lower SAF prices in relation to fossil jet fuel.

Many of these countries have established forums for industry and government to work together on decarbonisation. The establishment of the Australian Jet Zero Council which has a focus on developing the best policy framework to accelerate aviation decarbonisation, lower barriers to entry,

encourage investment and to guide and support pathways for SAF research and development, is a welcomed by BA members.

In addition to developing Australia's policy pathways, the Council should be adequately funded to support research and education, to deepen understanding of SAF by the public, farmers and corporates, to help dispel misinformation, avoid perceptions of greenwashing, and showcase the inherent safety of the product and the opportunities available. It is critical that the Council has the resources to educate stakeholders of the span of emissions reduction across different from SAF products, ensuring focus remains on fuels that not only deliver the best outcome on emissions reduction, but contribute to the growth of a domestic SAF industry in Australia.

The Council should also have the resources to encourage and utilise research into SAF to inform future development in Australia, utilising work already underway by a number of SAFAANZ members, that examine future possibilities from a range of new feedstocks and methods of refining, such as those recommended in the CSIRO SAF Roadmap.

There are many opportunities presented by Australian domestic SAF production. Liquid fuel security and sovereign capability is a key opportunity. Producing SAF domestically from Australian feedstocks could assist support Australia's long-term sovereign refining capability and help to mitigate the risk of supply disruptions. Australia imports over **90 per cent of its liquid fuels** through long supply chains exposed to geopolitical and climate change risk. This creates national security challenges, a concern clearly identified in the Defence Strategic Review released in April 2023. Thus, the creation of a domestic SAF industry can ensure that industry development is done in such that prioritises domestic uplift and consumption, increasing the resilience and security of Australia's fuel supply chain, while reducing redundancy. The problem is not limited to core defence tasks but extends to Australia's commercial aviation sector, and the enormous task for the industry to meet its commitment to net zero emissions by 2050. With Australia's liquid fuels consumption projected to grow into the 2030s, domestic production of SAF can help diversify our sources of liquid fuels and decrease our dependence on imported liquid fuels for security and commercial stability. Direct intervention by government by introducing supportive policy instruments is key to establishing a domestic SAF industry to encourage production and affordability.

An effective way to promote a domestic SAF industry, without direct government policy intervention, is through defence fuel procurement. More than two-thirds of fuel consumed by the Australian Defence Force (ADF) is aviation fuel, representing six per cent of total jet fuel consumed in Australia. A commitment from the ADF to be an early cornerstone customer of Australian-produced SAF would signal government support for the development of a domestic SAF industry, acting as a direct market signal, giving industry more certainty that policy levers will follow to support a nascent SAF industry, in time. A number of SAF production pathways also give the opportunity to produce other liquid fuels required by the ADF, e.g., renewable diesel, allowing defence to invest in a supply chain that continues to provide relevant liquid fuels over the long term, support interoperability with defence

allies in operations in region, while contributing to its decarbonisation goals. The recent procurement of SAF for demonstration activities by the ADF, e.g. Newcastle Air Show, is a good sign of what we hope is more meaningful ADF procurement of SAF.

SAF also offers a key contribution to Australian decarbonisation options. Currently, Australian-based airlines without access to international ports where SAF is available, are unable to purchase SAF to contribute to their decarbonisation goals and Safeguard requirements, which contribute to Australia's overall carbon reduction goals.

BA recognises the Safeguard and NGERs reforms as initial steps toward incorporating renewable fuels into Australia's carbon accounting system. A key initiative to support domestic airlines, as well as corporates looking to reduce their GHG Protocol Scope 3 emissions, is to introduce a SAF chain of custody reporting system, creating a robust and transparent system of accounting for the emissions reduction contribution of SAF separately to where the physical SAF molecules are used. An Australian framework should be aligned to international (IATA and RSB) principles and would contribute demand to global SAF production, allowing Australian aviation actors to participate.

SAF production can also produce valuable by-products, including other low-carbon products such as renewable diesel and lighter hydrocarbons, enabling further decarbonisation in other industries. SAF also contributes to the reduction in other, non-CO<sub>2</sub> aviation emission, reducing the overall warming effect of hydrocarbon combustion due to reduced proportion of particulates and soot.

In addition to the above, we include the following responses to the questions posed under section 5.2 of the Green Paper:

- **What are the benefits and risks associated with updating the NGER scheme and/or other policy mechanisms to enable unique claims on SAF sourced through common infrastructure? How can risks be managed?**

We strongly support adoption of a market-based accounting process, as it is a crucial step for successful investment and uptake of SAF. We recommend that consumers who purchase SAF receive the "Scope 1" emissions benefit since they pay a premium to purchase the fuel directly.

Without a market-based approach, influential industry players will not receive the emission benefits, making the industry prohibitively expensive to enter. The success and expansion of our domestic SAF industry depends heavily on the implementation of a market-based approach. Excluding this approach from policy such as the NGER update would seriously impede the progress of SAF and hinder Australia's decarbonisation efforts.

- **What types of arrangements are necessary to support industry confidence in the quality standards and sustainability certification of SAF?**

Foremost, the development of a domestic SAF industry utilising Australian feedstock is key to ensuring better sustainability credentials, as imported renewable fuel poses a risk of lower transparency of quality and sustainability credentials.

Creating robust SAF standards, aligned to existing global systems and supported by a strong sustainability framework is vital for Australia's SAF industry. This system is essential for assuring consumers and the public that SAF produced and used in Australia is effective in reducing emissions as well as meeting environmental and social expectations. A sustainability framework should consider the overall impact of the product and its supply chain, including its carbon intensity, environmental sustainability, and social impact.

The global aviation sector has developed a carbon reduction program for international commercial aviation, Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). CORSIA defines sustainability criteria for CORSIA eligible fuels which includes minimum reduction in carbon intensity across the fuel lifecycle. This internationally accepted SAF framework provides a basis for establishing an Australian SAF standard that can be adapted to reflect the Australian context.

Other international examples of sustainability models and criteria include the International Sustainability & Carbon Certification (ISCC) and Roundtable for Sustainable Biomaterials (RSB) and the US Department of Energy Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model. Australia's certification system should be able to align with CORSIA criteria and other sustainability frameworks, while supporting the growth of local feedstocks and renewable fuel production to meet the needs of the domestic SAF market and the Australian public's expectations.

- **Should policy and regulatory settings be refined to support development of domestic SAF production capability and industry take-up of SAF?**

We strongly support policy and regulatory setting supporting the development of domestic SAF production capability and industry take-up, as this is essential to Australia's decarbonisation strategy.

Developing a domestic SAF industry is a significant opportunity for Australia if we can prioritise its growth and innovation. It would enable the aviation sector to meet its GHG reduction commitments while remaining competitive, and provide a boost to regional areas where most of the SAF industry jobs would be created. We see the need to ensure industry development is done in such a way that facilitates domestic uplift and consumption as a first priority. By capitalising on our domestic SAF potential and fostering a domestic industry through supportive policy and regulatory settings, we can avoid becoming a net importer of SAF, some of which will be derived

from feedstock grown on our soil, while also unlocking significant economic prospects for our industries and securing sovereign capacities and fuel security.

- **What are the current and future challenges in developing an Australian SAF production industry, including challenges associated with growing, refining and consuming feedstocks?**

As highlighted in the CSIRO SAF Roadmap, Australia has abundant locally available feedstock that can be utilised to produce SAF. It's crucial to leverage our desirable feedstock position by collaborating with agricultural leaders to utilise locally grown feedstocks, noting some agricultural products and residues are currently used for other purposes and would need to be repurposed to SAF. Support to research and development of some feedstock supply chains, particularly in aggregation of certain feedstocks and to improve yield is also required.

Australia does have some fuel refining capability and workforce, however growth of a domestic SAF industry will require supporting a pipeline of skilled workers through attracting overseas talent, cooperation and shared learning with allies such as US (US-Aus Compact) and investment in university and vocational places for SAF industry skills.

We support the development of a SAF industry that promotes sustainable solutions that adds value to feedstock that would usually be left to decay in fields, burnt off, used to produce electricity where other options are feasible, or solely exported to international markets, thus, failing to secure this value domestically.

#### **Section 4 Regional and remote aviation services**

Regional airports could benefit from early access to decarbonisation technologies such as SAF due to the complementary nature of industrial processes and growing investment in 'energy transition hubs', e.g., Gladstone in Qld and Kwinana in WA. The investment in renewable energy, production of green hydrogen (required in SAF production), existing distribution infrastructure and existing skilled workforce going through transition, provides an ecosystem conducive to SAF production. Although promising in the medium- to long-term, the challenges (economic and technological) to accelerating green hydrogen and electric aviation infrastructure, especially in remote areas, leaves SAF as the key decarbonisation technology for aviation out to 2050. Ensuring SAF production and supply chain infrastructure is incentivised in these energy transition hubs is an opportunity for Australia's regional areas, adding to economic and workforce development.

The Aviation Green Paper points to modelling in ARENA's Bioenergy Roadmap Report that estimates bioenergy could contribute 35,300 jobs by the 2050s, with at least one in four additional jobs expected to be in regional areas. The diversity of certified SAF feedstocks and energy conversion pathways lends itself to SAF production in regional areas, close to existing industries and potential feedstocks. For example, agricultural residues and waste, such as sugar cane bagasse or tallow from meat processing, could provide feedstocks for an Australian SAF industry. The CSIRO SAF Roadmap



highlighted Australia has the potential to produce 90 per cent of its 2050 jet fuel needs if prioritised for SAF production and with investment in supply chain efficiencies.

Australia has natural resources and an agricultural sector with the capabilities and sustainability to meet the growing demand for renewable feedstocks while minimising or avoiding land use change.

There are also emerging solutions and innovations in agriculture that will enable Australian farmers to meet the rapidly rising demand for renewable feedstocks while improving their productivity and sustainability. Advances in plant science, crop management and rotation changes, along with clearly defined sustainability standards and certification systems will enable increased crop-based feedstock production that supports food and fuel security.

Australia's transition to an SAF producer and consumer will deliver significant benefits beyond those identified in the Aviation Green Paper, including:

- 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; and
- c) Accelerating the transition from first generation renewable fuels and feedstocks to more advanced lower carbon feedstocks and fuels.

BA wishes to underline the risk outlined in the Aviation Green Paper of the 'moment in time' opportunity for Australia. Australian-produced feedstocks are at risk of being locked into long-term supply contracts for export internationally, undermining feedstock use by Australian refiners and operators, resulting in Australia missing out on the economic and sustainability benefits of domestic SAF production. As a result, Australia risks becoming a net importer of a renewable fuel derived from feedstock grown on its soil, and abundantly.

This is a real and immediate threat with Australian feedstocks already being exporting, notably:

- There has been over a 30,000 per cent increase in the export of used cooking oil from Australia to the USA from 2020 to 2022.
- Approximately, 60 per cent 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.
- Australia is already exporting around 72 per cent of the total value of its agricultural, fisheries and forestry production.

With so much exportation, Australia is at risk of not only having a limited supply of feedstock but the sustainability credentials of imported renewable fuel will ultimately be lower through additional transport. Potential limits to transparency of sustainability criteria and feedstocks in other regions could diminish the reputation and trust of SAF in Australia.



Without a viable domestic market, Australian farmers will continue to sell their feedstocks to more lucrative international markets. Leveraging Australia's inherent feedstock strength for domestic production and use, should be considered a key element to our decarbonisation strategy.

Well-designed policy can generate robust demand for renewable 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 policy will:

- a) Ensure Australia is competitive with other markets with advanced bioenergy industries and provide a level playing field.
- b) Foster a market-based environment to ensure Australia can attract investment to quickly scale sustainable renewable feedstock production and processing.
- c) Encourage innovation to accelerate the development and uptake of SAF domestically.
- d) Address energy transition challenges without compromising Australia's food security or environment.

The work of the Regional Investment Framework, which underpins the government's strategic approach to regional investment, alongside the national Net Zero Authority, should include consideration for regionally-focussed investment in aviation decarbonisation technologies, including SAF feedstocks and emerging technologies. Announced national funding programs, e.g. National Reconstruction Fund, will need to work alongside existing state and territory infrastructure funding to support rural and remote decarbonisation. The Transport and Infrastructure Net Zero Roadmap and Action Plan should prioritise SAF infrastructure in the near-term **alongside** renewable energy infrastructure to support medium- and long-term development of emerging technologies in regional areas.

ARENA's Sustainable Aviation Fuel (SAF) Grant Funding Initiative (\$30 million) to support the domestic development of SAF production is welcomed by our members as a helpful start to a much greater funding requirement of this type to accelerate a domestic SAF industry. There is recognition that this type of funding, focussed at supporting projects through complex feasibility assessment processes, is critical to ensure the right projects (considering economic, community and sustainability criteria) progress to financial investment and facility development. We encourage that grant funding is increased and extended to include support for the deployment of pioneering SAF production technologies at scale.

## **Section 9. Emerging aviation technologies**

Emerging aviation technologies, such as alternative energy carriers (green hydrogen and electrification) as well as Advanced Air Mobility (AAM) have the potential to transform the aviation sector in the medium- to long-term. As the Aviation Green Paper acknowledges, this may offer new opportunities to increase the connectivity in cities, regional and remote communities and to grow regional economies. The ability of these technologies to support Australia's transition to net zero is dependent on abundant, cheap renewable energy, which today would need to be liberated from

other industries and from supporting Australia's national electricity grid decarbonisation. BA support is therefore focussed on accelerating affordable renewable liquid fuels and renewable electricity in the immediate-term to begin decarbonisation of aviation now, while developing the ecosystem for emerging technologies in certain aviation segments as they mature.

BA members support the leading use of hydrogen in aviation in the medium-term to be to develop and scale SAF, with a focus on green hydrogen (made possible by abundant sources of renewable energy for the power required in the production process). Hydrogen is required in some SAF pathways, and hydrogen and renewable carbon can be combined into a formation that can be used as a drop-in synthetic fuel.

Australia's ambitious emission reduction commitments are rapidly approaching, posing a significant risk of failure if we delay action while waiting for alternative technologies or overlook immediate decarbonization solutions like SAF.

#### **Section 10. Future industry workforce**

Australia has seen the reduction in fuel refining capability in the last decade and this has led to the reduction in workers' available and the skills needed to build a domestic SAF industry. Alongside investment in the skills needed to drive Australia's energy transition, fuel industry expertise across the fuel supply chain, should be included as essential to success. Growth of a domestic SAF industry will require supporting a pipeline of skilled fuel workers through attracting overseas talent, cooperation and share learning with allies such as US (US-Aus Compact) and investment in university and vocational places for SAF related skills.

Regionally based operators, with smaller workforces and less training capacity, will need assistance in attracting the workforce required as well as building collaboration with other hard to abate sectors (such as agriculture, marine, heavy haulage, mining, manufacturing and construction) located in local energy transition hubs.

#### **Section 11. International aviation**

The international aviation community has recognised the need to decarbonise aviation and is taking steps to implement this. Australia is lagging behind global action in this space but with the technical capabilities to adopt SAF technology, a robust feedstock supply for industry growth, and both domestic and international markets demanding this product, there is no reason this cannot change quickly.

While governments and industry across Europe, the United States, the United Kingdom, New Zealand, Singapore, Japan and Canada progress policy to accelerate the adoption of SAF signalling to the market through ambitious SAF targets, through fuel subsidies, blending mandates, low carbon fuel standards, capital grants and loans, and funding for individual projects, Australia remains at first base, beholden to international competitors and inflated prices that are ultimately borne by the consumer.



SAF is proven technology with clear market readiness, having already powered over 450,000 commercial flights globally.

There is an opportunity for Australia to leverage bilateral and multilateral agreements, such as AUKUS, QUAD, to learn from and find mutually beneficial terms for accelerating a SAF industry with our allies. The inclusion of SAF as a key technology in the US-Australian Clean Energy Compact is a good example of this.

The growth of aviation out to 2050 will be driven by significant economic growth in the Asia-Pacific region. The CSIRO SAF Roadmap - APAC Regional Report outlines the existing fuel refining capabilities, feedstock potential and opportunities for Australia to provide regional leadership in developing a SAF industry in the APAC region, and to expand existing trade of fuel and feedstocks in the region. Supporting the APAC region to grow its SAF industry will be crucial for global SAF production needs. Australia also plays a role in ensuring the Pacific Islands facing many challenges to establishing their own SAF industry and an even greater reliance on aviation, are supported in their aviation decarbonisation goals and access to SAF. Australia taking a leading role in establishing a robust SAF chain of custody reporting system would be a key enabler.

### **SAFAANZ recommendations for SAF policy initiatives**

#### **Jet Zero Council - draft recommendation**

The Jet Zero Council welcomes the industry agreement on key policy drivers required to establish a domestic SAF industry to support aviation decarbonisation.

We recommend the Government review the following industry objectives and policy proposal and consider these as part of the suite of emission reduction policies and programs being formed to achieve net zero such as the Transport and Infrastructure Net Zero Roadmap and Action Plan and the Aviation White Paper.

#### **SAF Policy Workshop overview**

On 30 November Jet Zero Council members and industry representatives came together at the Deloitte offices in Brisbane to address Work Plan Item #6 of the JetZero Council work program. The primary intention of the workshop was to establish broad industry consensus on effective policy options available to develop an Australian SAF industry.

#### **Industry objectives**

The key objective of the workshop was for the industry to reach some level of consensus on an effective short term policy package that would support the development of Australian SAF production to deliver 5-10% of Australia's aviation fuel market by 2035.

A focus on high level strategic policy levers was the ambition of the activity. Specific policy design, timing, range and budget would all need to be considered in the next stage.

In terms of aspiration for the industry, and where focus is required, the following points were agreed:

- Time is of the essence: industry participants identified Australia is lagging globally and action is needed in the next 2 years to maintain any chance of developing local production.
- That a policy package needs to include a key demand and supply side lever, that is supported by initiatives for feedstock development as well as other enablers.
- That government policy would need to ensure a level playing field is achieved for the aviation sector and fuel producers.

### **Recommended policy proposal**

The below policy package has been designed to achieve the objectives of the Jet Zero Council Workplan item 6: Develop advice on the development of a SAF industry and eco-system in Australia, which includes, but is not limited to, end-to-end supply chain development, identification and supply of feedstock, SAF production and domestic demand that can increase market confidence and drive investment.

It is essential to consider this policy suite as a package, with no single policy in isolation as the enabler. It was agreed that it is essential for demand and supply levers co-exist within the package.

In terms of the policy package that was broadly agreed, it can be summarised as follows, with a robust demand and supply-side policy decided as highest priority:

1. **Demand:** There was general agreement that **a regulated demand side lever, tied to carbon intensity**, was required. While different options for design structure were discussed, there was broad acknowledgement that the overriding consideration was the urgent need for a signal, to be complimented with an appropriate supply side response.  
Key considerations for the design process of a demand signal would include:
  - **Scope:** SAF specific or a sub-target of a broader renewable fuels demand mechanism; implemented with a link to carbon intensity or a SAF-qualifying requirement
  - **Magnitude & Timing:** The initial thresholds for the signal, phase-in timings, and ramp up
  - **Australia-appropriate sustainability standards:** The imperative of performance-based LCA criteria grounded in Australian conditions
  - **Compliance & Enforcement:** The need for a trading mechanism to facilitate market development, a strong compliance regime, and multiple means of compliance to ensure decarbonisation outcomes
  - **Mitigation of Unintended Consequences:** Management of asymmetric impacts on competition and customers (e.g. not creating an uneven playing field for lower

cost airlines), and on discontinuities in fuel production incentives (e.g. renewable diesel relative to SAF)

While it was acknowledged that a broad-based approach was preferable, a more targeted approach with less stakeholders, was likely more expedient. The industry accepted that compromises would be required to ensure that a regulated demand signal was committed to within this term of government.

2. **Other demand side measures:** It was accepted that other demand-side levers such as **government procurement** would be beneficial support for the industry. However, it was noted this alone would be unlikely to sustain the industry at scale needed and should only be used to complement a more broad-based & regulated demand signal.
3. **Supply:** On supply, two levers were prioritised including **development grants to support project development** (important for new entrants & therefore competition) and **contracts for difference (CfD) for commercial scale facilities**.

A development grant is typically paid out against development milestones of a project (to cover feasibility, FEED expenses etc) and support facilities in deployment/entrance to market. Key considerations during the design process would include:

- Size of the funding pool
- Conditionalities for funding (sustainability criteria, knowledge sharing etc)

A CfD would involve government underwriting the development of a SAF market by bridging part of the green premium that exists between SAF and conventional jet fuel through a medium-long-term contract. In effect, a CfD acts as a certainty mechanism for projects. Key considerations during the design process would include:

- Scale, noting that impact would likely require a Hydrogen Headstart-sized intervention
- Price discovery (establishing reference prices accepted by the market).
- Price reductions over time in line with SAF costs decreasing.
- How to administer? Competitive auction process?

4. **Feedstocks:** The two priority levers were the development of a **sustainability standard** to address broad social license issues (not limited to water, food security, emissions, biodiversity) and **capital grants to support feedstock expansion**. In terms of these capital grants, it was acknowledged that these should give preference to aggregation or increasing the overall feedstock supply, with an emphasis on reducing the carbon intensity and increasing the diversity of Australian feedstock.
5. In terms of **enabling policy**, the industry was conflicted on the mechanism for delivery but did agree, that while the industry was developing, that a system for allowing the separation of

the carbon benefit from the molecule of fuel to support a **tradeable market system** was an important feature of a policy package. Industry also agreed that support was required through streamlining and achieving **national harmony on planning and approvals** and **education of the broader public, fuel/feedstock and aviation sector** on the benefits of a transition to SAF.

### Conclusion

The industry's appetite to take on the immediate opportunities presented by SAF is clear, particularly given that SAF remains the primary tool (indeed, within the technological roadmap available, the only tool now) for emissions reductions in aviation.

ICAO technical analysis done shows that SAF has the greatest potential to reduce carbon emissions over the next 20 to 30 years in all aviation segments (ICAO, Report on the feasibility of a long-term aspirational goal (LTAG) for international civil aviation CO2 emission reductions). International Air Transport Association (IATA) estimates that SAF also has the capacity to contribute around 65 per cent of the reduction in emissions needed by aviation to reach net-zero in 2050.

However, industry cannot tackle this task alone. It is imperative government create policy frameworks that encourage investment, innovation and deployment, so that these opportunities can be fully realised, just as they are being realised in Europe and North America. Given our vast agricultural might, our refining capabilities and our renowned ingenuity, Australia has the opportunity to be a leading player in the SAF industry globally. It is there for the taking.

Thank you for the opportunity to provide this submission. Please send any comments or queries to myself at [shahana@bioenergaustralia.org.au](mailto:shahana@bioenergaustralia.org.au) or 0439 555 764.

Sincerely,



Shahana McKenzie,  
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