December 19, 2025

Submitted Via Email to lclfconsultation@infrastructure.gov.au

Australian Government
Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts

Re: Cleaner Fuels Program Policy Design and Engagement Paper

Dear Sir / Madam:

Infinium Operations, LLC ("Infinium") submits these comments in response to Australia's Cleaner Fuels Program Consultation.

Infinium is a world leading provider of innovative energy solutions and developer of power-to-liquids (PtL) projects. Infinium's proprietary technology utilizes waste carbon dioxide (CO_2) and renewable power to produce transportation fuels (e.g. eSAF, eDiesel and eNaphtha), with substantial reductions in lifecycle GHG carbon emissions as compared to fossil-based alternatives. Infinium PtL fuels are drop-in replacements for use in planes, ships and motor vehicles, seamlessly integrating with existing engines, infrastructure, and manufacturing processes, without the need for costly infrastructure changes. Infinium is financially and strategically supported by its investors, including affiliates of Amazon, Brookfield Asset Management, Mitsubishi Heavy Industries, SK Ventures, NextEra Energy, and AP Ventures.

PtL fuels (also known as eFuels or renewable fuels of non-biological origin (RFNBOs)) are rapidly scaling up. Since 2023, Infinium has operated the first commercial scale PtL fuels facility in the world at Project Pathfinder in Corpus Christi, Texas. A second, larger facility known as Project Roadrunner is under construction in West Texas and will focus primarily on the production of eSAF for air transportation. Project Roadrunner is the world's first PtL SAF project to reach final investment decision (FID), with major investments from Brookfield Asset Management and Breakthrough Energy Catalyst. Industry leaders including Amazon, American Airlines, Borealis and IAG are customers of Infinium.

Question 1.1: *Which LCLF should be eligible under the program and why?*
Question 1.2: *Should certain types of LCLF be prioritised over others?*

a. *Should LCLF suitable for particular sectors or uses be prioritised? For example, should sustainable aviation fuel be prioritised over renewable diesel?*
b. *Should LCLF for certain sectors or uses be de-prioritised due to other viable decarbonisation pathways?*
c. *What market impacts are anticipated by influencing prioritisation of particular fuel types?*

To target funding where it is most needed and impactful, eligibility under the Cleaner Fuels Program should be reserved for SAF, and in particular, including an allocation for PtL SAF. As noted in the consultation document, road transport has multiple decarbonization levers to pull, whereas today aviation has just one: SAF. The Australian aviation sector has set ambitious decarbonization goals and has been a key stakeholder engaged in the development of LCLF policy, so it is essential to design the Program to enable them to meet their goals.

Without SAF-specific policy, the Australian market will see little supply come online. For fuel producers, SAF is typically more expensive and complex to make and distribute than road fuels. It requires additional upgrading compared to road fuels production processes and subsequently requires blending and transport to a small number of airports (as opposed to road fuels' distributed filling stations). It is thus important for a policy program to recognize this inherent aspect and at least aim to level the production-cost playing field.

The UK offers one example of the need for SAF-specific policy. Under the UK Renewable Transport Fuel Obligation (RTFO), SAF became eligible to receive tradeable certificates along with renewable road fuels in 2019, but the supply of SAF into the market was negligible until the approval of the separate and targeted SAF Mandate in 2024 (in effect from Jan 2025).[1] The UK SAF Mandate sets a much higher maximum incentive ("buy-out price") per litre of SAF than the RTFO does per litre of road fuels. The UK is not alone; jurisdictions around the world have recognized and responded to the need for SAF-specific policy: the EU and South Korea also have set SAF-specific mandates, Singapore has established a levy to create a fund for the purchase of SAF, and several US states have SAF-specific tax credits.

In addition to broadly supporting SAF, the Cleaner Fuels Program should set aside an allocation of funds specifically for PTL SAF. Climate think tanks, policy makers and the aviation industry have widely recognized PtL SAF as holding enormous potential to enable achievement of ambitious but essential policy goals. Recognizing this, jurisdictions have explicitly included target policies for PtL: for example, the European Union and the UK established sub-mandates for PtL within their overarching SAF mandates. This is providing an important market signal and drive for commercial scale-up currently underway.

Within Australia, the potential for PtL SAF to achieve policy goals is especially great. CSIRO's 2025 study on LCLF opportunities in Australia highlights a natural competitive advantage and

[1] UK Department for Transport, "Renewable Transport Fuel Obligation (RTFO) statistics 2024: Final report," (2024) *available at* https://www.gov.uk/government/statistics/renewable-transport-fuel-obligation-rtfo-statistics-2024-final-report

major export opportunity for Australian-produced PtL fuels in a future net zero global economy.[2] A recent study by the Roundtable on Sustainable Biomaterials (RSB)—a global, multi-stakeholder organization that leads the industry in developing certification systems for alternative fuels—similarly found that Australia has among the "strongest industrial and energy foundations" in the Asia Pacific region for PtL fuels.[3] Australia unique strengths include abundant CO2 sources, high renewable electricity resource potential and grid readiness, and a frontrunner position on planned electrolyzer projects. The opportunity is also well distributed across Australian communities: CSIRO's 2023 SAF Roadmap identified feedstock advantages for PtL fuels in five out of six Australian states as well as the Northern Territory.[4]

On policy readiness, however, Australia risks falling behind. The same RSB study ranked Australia as an "Early-stage country" on policy support for PtL SAF—in contrast with leaders in the region including Singapore and South Korea, and mid-range countries like Japan, China, and India. The Cleaner Fuels Program offers an opportunity to change that trajectory. With careful program design, the Program can position Australia as an early world leader in PtL SAF production.

Question 2.1: *Should the production credit be a fixed amount per litre of production, or a variable amount that depends on the market price of LCLF?*

a. *Are there any potential benefits, risks or constraints considering the two different production credit options?*
b. *What outcomes do you think can be delivered with the available funding?*
c. *What type of mechanism provides the greatest investment certainty or level of bankability to projects?*
d. *How can this support be structured to prevent substantial upside to producers?*
e. *How do you consider pricing for LCLF will be set over the short-medium term and longer term? Will pricing be matched to a premium on equivalent fossil fuel or price of imported LCLF or be on a carbon abatement basis?*

Given the nascency of the LCLF industry in Australia and the Asia-Pacific region, first movers will need to overcome high perceptions of risk in order to reach FID and bring product to market. The production credits must create a predictable, bankable revenue stream for qualifying projects.

While a Contract for Difference mechanism accomplishes this goal in theory, in practice they are very complex to implement effectively, particularly in nascent industries like SAF with little price transparency and uneven market conditions. As just one example, the consultation proposes to base funding on an "international LCLF price," but determining a single such reference price will prove difficult. Even for HEFA SAF, the only production pathway currently represented by price reporting agencies, Argus and S&P Global Platts, prices vary significantly by geography due to

[2] CSIRO, "Opportunities and Priorities for a Low Carbon Liquid Fuel Industry in Australia," (Feb 2025), *available at* https://research.csiro.au/tnz/lclf-industry-in-australia/.
[3] Roundtable on Sustainable Biomaterials, "PtX and Sustainable Aviation," (Nov 2025), *available at* https://rsb.org/wp-content/uploads/2025/11/ptx-and-sustainable-aviation_rsb_november-2025_digital.pdf
[4] CSIRO, "Sustainable Aviation Fuel Roadmap," (2023), *at* pg. 32, *available at* https://www.csiro.au/-/media/Energy/Sustainable-Aviation-Fuel/Sustainable-Aviation-Fuel-Roadmap.pdf

widely varying policy environments that impact market dynamics. For other pathways, the challenge is even greater. The UK has been working since 2023 to design a Contracts for Difference scheme for domestic SAF projects (the Revenue Certainty Mechanism), but after over two years of work, most essential design elements remain undecided, including how the reference price will be set and how contracts will be allocated. There is currently no proven model anywhere in the world for how to effectively implement CfDs in emerging markets such as SAF.

Rather than a CfD scheme, we encourage Australia to establish a simple production credit per litre, with enhancements for deep carbon intensity reductions. If funding is limited, an application process can be considered to identify and select eligible projects, based on factors such as probability of reaching commercial operations, decarbonization goals, and other relevant policy factors. (A production incentive open to all producers but constrained by a fixed budget creates uncertainty due to the risk of the funding running out early.) Such a design is straightforward to implement, while providing the bankablility producers need to reach FID.

Question 2.2: *To deliver the policy intent of the Program while maximising the value for taxpayers, do you agree that projects with the lowest cost should be prioritised under the Program, with the cost being measured either as per unit of LCLF produced or as per unit of carbon emissions abated?*

Question 3.1: *Considering this objective, what production pathways should be focused on or prioritised?*

a. *Should priority be given to projects that use more-established production pathways (e.g. HEFA and HVO) than nascent production pathways that may present a higher level of technology risk?*
b. *How can nascent production pathways compete with more-established production pathways (e.g. HEFA and HVO)?*

While cost is one important consideration, relying solely on today's production costs as a factor for awarding support risks building a one-dimensional LCLF industry that excludes key stakeholders and leaves significant taxpayer value on the table.

LCLF can be produced via a variety of production pathways, each of which utilizes a different category of feedstock. The lowest cost pathway today (HEFA) can utilize only a fraction of Australia's total feedstock production potential—CSIRO estimates ~14%[5]—and competition for oil-based HEFA feedstocks is continually increasing, threatening to drive up prices even while other pathways, especially PtL, are expected to decline significantly in cost over time.[6] Supporting additional pathways would better leverage Australia's vast resource potential, deliver greater diversity and security of liquid fuel supply, and spread the economic opportunities generated by LCLF production to a wider set of stakeholders and regions.

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[5] Normalized for pathway conversion efficiency. *See* CSIRO, Feb 2025 *at* pg. 9.

[6] *See* CSIRO, 2023, pg. 54. *See also* Gunawan, D. et al, "Opportunity for Developing an e-SAF Value Chain in NSW," (2025), at pg. 30, *available at* https://www.decarbhub.au/wp-content/uploads/2025/05/NSW-SAF-Industry-Pre-Feasibility-Study_WEB.pdf. *See also* Clean Energy Finance Corporation, "Refined Ambitions: Exploring Australia's Low Carbon Liquid Fuel Potential," (July 2025), *at* pg. 58, *available at* https://www.cefc.com.au/media/jh3gvm14/refined-ambitions-exploring-australia-s-low-carbon-liquid-fuel-potential.pdf

Question 2.10: *What lessons can Australia learn from other jurisdictions that have already implemented LCLF production support measures?*

Building an enduring SAF industry can be achieved with a variety of supply and demand side policy support instruments—including production credits and mandates.

On the supply side, Australia should look to US production tax credits such as the 45V Clean Hydrogen Production Tax Credit and the 45Z Clean Fuels Production Tax Credit. The credit amount is based on carbon intensity reduction achieved, with deeper decarbonization receiving a higher credit value. The credits also have well defined eligibility requirements, so that once compliance is confirmed, the credit is firmly bankable and guaranteed by the government.

On the demand side, Australia should continue working toward its own SAF Mandate. For this, Australia should look to the UK SAF Mandate and Renewable Transport Fuel Obligation (RTFO) as good examples. Some key design elements to note—which could be implemented in supply side policy as well—include:

1. Built in caps to prevent the most mature pathways and feedstocks today from crowding out high-growth-potential alternatives. For example, the RTFO caps contributions from fuels derived from certain crop-based feedstocks and the SAF Mandate caps participation from HEFA-based SAF. Australia could likewise make a portion of the Cleaner Fuels Program funding available to SAF produced via any pathway, but reserve another portion specifically for earlier-stage, but still commercially ready technologies such as PtL.

2. Support levels calibrated to different fuel types, feedstocks, production pathways, and carbon intensity to encourage project diversity. For example, under the UK RTFO, most road fuels made from wastes and residues are eligible for double support, and certain less mature fuels (including PtL) are categorized as "development fuels" with a higher maximum incentive value ("buy-out price"). Similarly, the SAF Mandate sets a specific sub-mandate with a higher buy-out price for PtL SAF. The result is that while lowest cost pathways and feedstocks occupy most of the UK market space today, the door is open to growing participation from other pathways over time.

Infinium applauds the Australian Government for its efforts to catalyse a domestic LCLF industry and for the careful consideration of policy design that has been undertaken in the process. Given the strong recognized potential for PtL fuels to contribute to Australia's LCLF industry and achieve the policy goals of the Cleaner Fuels Program, we respectfully recommend that the Program support the development PtL projects in Australia.

Thank you for the opportunity to provide comments. Should you have any questions or would like additional information, please feel free to contact me [redacted].

With kind regards,

Emily Carlton

Senior Government Affairs and Policy Specialist