

TOPSOE

Re: Cleaner Fuels Program

Topsoe commends the Government of Australia for establishing the Cleaner Fuels Program (the Program) and welcomes the opportunity to provide input on its policy design.

Topsoe is a global provider of technology and solutions for the energy transition. We are one of the very few companies to offer end-to-end solutions in renewable fuels produced from sustainable feedstocks; synthetic e-fuels produced from renewable electricity; and low-carbon hydrogen, ammonia and methanol produced from natural gas. Our company's technology leadership directly results from nearly 8% of annual revenue being dedicated to R&D. Headquartered in Denmark, we now have over 2,800 employees serving customers around the world.

We have seen active interest in the Australian market for our offerings. As a global player, we also bring extensive knowledge of how policies and programs have been designed and implemented in other regions. This allows us to share best practices and lessons learned from jurisdictions that are scaling up LCLF production.

Accordingly, we make the following submissions on the issues and questions raised in the Policy Design and Engagement Paper:

1. Eligible Fuels

Topsoe supports prioritising renewable diesel (HVO) and SAF for production incentives. As drop-in fuels, their domestic uptake can drive significant emissions reductions in the near- to medium-term without changes to existing infrastructure. Some segments of heavy road transport are also expected to eventually transition from LCLFs to electric power. Both HEFA and Fischer-Tropsch processes can pivot from producing renewable diesel to SAF with no or modest adjustments. This flexibility would ensure Australia can continue to meet LCLF demand as market needs evolve. SAF is widely expected to play a long-term role in decarbonising the aviation sector due to the limitations of other decarbonisation solutions.

Notwithstanding the Program's focus on projects advanced in development, Topsoe encourages the Australian Government to dedicate a portion of funding to emerging LCLF pathways, including non-HEFA SAF (e.g., Fischer-Tropsch and Alcohol-to-Jet) and e-fuels. These pathways offer great potential to strengthen fuel security by leveraging Australia's natural resources. We note that first-of-a-kind projects for e-SAF and maritime e-fuels (e.g., e-ammonia and e-methanol) are unlikely to be competitive for support under the Hydrogen Headstart Program, as other sectors are structurally better positioned to adopt renewable hydrogen at scale in the near term.

2. Program Structure

A fixed production support scheme is generally easier for applicants to navigate and less complex to administer, while contracts for differences (CfDs) offer better revenue certainty for projects. Competitive funding processes tend to favour larger developers with better access to financing and more resources to support bid preparation. Therefore, to advance the Program's secondary objective of economic development in regional and First Nations communities, the Australian Government may wish to implement measures to facilitate participation by smaller projects and projects featuring earlier-stage technologies.

A technology- and fuel-agnostic support scheme is likely to favour biodiesel over LCLFs that are more expensive to produce, including SAF. Most SAF business cases currently rely on a combination of supply-side incentives, long-term offtake agreements underpinned by airline decarbonisation goals, and demand-side mandates. Experiences in the United States are illustrative. Volumetric obligations under the Renewable Fuel Standard, together with stackable federal and state-level production tax credits, have made SAF production attractive in states like Illinois and Minnesota. In the absence of a demand-side mandate, schemes that provide better revenue certainty – such as CfDs – will likely be required to bring SAF projects to final investment decision in Australia.

Regardless of whether the scheme provides fixed production support or is delivered through CfDs, Topsoe believes the Program should promote lower GHG emissions intensity LCLFs. One way to achieve this is to structure support as a sliding-scale incentive tied to lifecycle emissions intensity. For example, the US 45Z Clean Fuel Production Tax Credit is designed as a sliding-scale tax credit for fuels meeting a threshold lifecycle GHG emissions rate. Drawing on best

practices, the Australian Government can ensure that the Program is designed so that each additional unit of verified emissions reduction is rewarded.

To maximise benefits for Australians, we recommend the Program focus on supporting domestic fuel supply. We stress that demand-side mandates will be critical to enabling LCLF production for domestic use. Until Australia introduces such mandates, Program funding will likely need to include a local premium to compete with jurisdictions that combine supply-side incentives with demand-side measures. Experiences elsewhere suggest that even with program support, producers may remain hesitant to invest in projects without clear, long-term demand signals. In the European Union, delays with implementing renewable hydrogen targets at the Member State level have contributed to a slowdown in hydrogen offtake agreements and stalled growth in the EU hydrogen sector.

3. Fuel Production and Sustainability

Topsoe submits LCLFs should be required to meet a minimum lifecycle emissions intensity threshold to qualify for Program support. We agree that a 50% lifecycle emissions reduction threshold compared to a fossil equivalent provides a reasonable starting point, and that a minimum threshold is needed even if the incentive is tied to emissions reductions rather than volumes produced. To advance the Program's secondary objective of accelerating decarbonisation in hard-to-electrify sectors, the Australian Government could apply more stringent minimum GHG emissions intensity thresholds for fuels used in sectors where alternative decarbonisation options exist, such as road transport.

We also encourage the Australian Government to draw on existing sustainability schemes when defining eligible fuels. For SAF, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) includes sustainability criteria as well as a standardised lifecycle GHG accounting methodology. A Program design that aligns with CORSIA would help ensure that SAF produced from funded projects can be used by airlines to meet their international obligations. A number of jurisdictions, such as Brazil and Japan, explicitly reference CORSIA obligations in their SAF policies and frameworks.

Thank you for the opportunity to share this input. We would be pleased to answer any questions on the information provided.

Sincerely,

A handwritten signature in black ink, appearing to read "Jessica Olson". The signature is fluid and cursive, with the first name "Jessica" and the last name "Olson" clearly distinguishable.

Jessica Olson
Head of Global Affairs, Americas & Indo-Pacific
Topsoe