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Tamarack Consulting submission: Cleaner Fuels Program – Policy Design and Engagement Paper

Tamarack is an independent Australian consultancy focused on supporting its clients in furthering their sustainability goals. Tamarack has specific experience in Low Carbon Liquid Fuels (LCLF) having worked on policy development, project development, sustainability and carbon accounting for sustainable aviation fuel (SAF) in Australia and internationally. This submission is made in the hope that significant progress can be made in the short term to expedite the scale up of the LCLF industry in Australia.

1. Eligible fuels

Question 1.1: *Which LCLF should be eligible under the program and why?*

Any LCLF that meets appropriate sustainability criteria, and a minimum lifecycle carbon reduction threshold should be eligible in the program. Noting that certain feedstocks can be used to produce multiple LCLF and that these feedstocks aren't limitless, the program should also be designed to incentivise LCLF that are produced to decarbonise hard to abate sectors such as aviation and shipping.

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?*

   If Australia's aviation and shipping industries are to remain competitive globally, having access to LCLF will be critical. The use of high value feedstocks to produce fuel for industries that have alternative, cost effective, decarbonisation opportunities (such as electrification) would be sub optimal.

b. *Should LCLF for certain sectors or uses be de-prioritised due to other viable decarbonisation pathways?*

   LCLF for passenger transportation such as passenger vehicles (ethanol) is an example of an industry sector that has viable, cost-effective alternatives for decarbonisation and should be deprioritised. This is not to say that ethanol should be deprioritised, when used as a SAF feedstock it can make an important contribution.

c. *What market impacts are anticipated by influencing prioritisation of particular fuel types?*

Any policy framework that seeks to prioritise particular fuels will have implications on market development. However, it should be noted that many of the feedstocks and

fuels relevant to this program already have global markets and are being influenced by policies in other jurisdictions. A successful policy approach for this program should be focused on ensuring it is attractive and viable to produce these fuels in Australia and, ideally, that they are utilised to assist in decarbonising Australian industries.

2. Type of production support

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?*

   Both production credit options have pros and cons. In terms of simplicity, a fixed amount per litre provides a degree of investment certainty that removes some of the variability pricing risk associated with contracts for difference in terms securing private sector investment.

   Importantly, in both production credit scenarios, there still needs to be a demand for the fuels produced. Ideally, prior to commencing production, a facility would have secured a series of off-take agreements for the fuel(s) produced to reduce the risks associated with investment and ultimately the cost of securing finance. In addition to looking at ways to stimulate domestic production of LCLF, the Government should also be considering creating complimentary domestic demand signals for the use of the fuels. In the absence of policies, such as a domestic blending mandate for SAF, there is a high likelihood that a majority of domestically produced SAF may end up being sold into jurisdictions with demand side schemes in place.

b. *What outcomes do you think can be delivered with the available funding?*

   The Government is to be congratulated on the announced funding; it is a useful start to assist in creating a domestic LCLF industry. Noting the potential scale of domestic production that is possible with Australia's feedstock resources; to secure the maximum level of LCLF investment and production, additional funds will be required along with additional policy support. A commercial scale production facility for SAF is likely to require many hundreds of millions of dollars of capital investment prior to commencing operations. The levels of LCLF production necessary to materially decarbonise hard to abate sectors such as aviation, and to provide a level of fuel security, are significant (billions of litres of production). To stimulate this level of investment would require significant additional Government commitment and demand side policy.

c. *What type of mechanism provides the greatest investment certainty or level of bankability to projects?*

   A long term (~10 years) production credit scheme along with long term (aligned) demand side policy stimulus would provide the greatest level of investment certainty.

d. *How can this support be structured to prevent substantial upside to producers?*

   Investment certainty is important, so the prospect of policy support changing creates investment risks. Notwithstanding, taxpayer funds must be deployed in an efficient manner. With this in mind there could be periodic reviews to ensure that producers are not making unreasonable returns for the subsidised LCLF. The ACCC could be tasked with reviewing the prices that producers are charging for any taxpayer subsidised LCLF.

   The greatest risk of irregular profits would come from the scarcity of certain LCLF availability where there is a poorly designed demand side policy scheme that creates scarcity. A key design feature of any such demand side policy should also include periodic reviews of the availability of LCLF to ensure scarcity does not drive an unreasonable premium for these fuels.

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?*

   The dynamics of supply and demand globally for both feedstock and LCLF will be the driving forces for price for these fuels (particularly SAF and renewable diesel) in the short to medium term. Given the global demand for feedstock and the finished fuels created by regional blending mandates this creates a default market price while these fuels remain supply constrained. The cost of production and these supply challenges are more relevant to this price in the short to medium term than the default fossil fuel price or the carbon abatement benefits.

   Hopefully, in the longer term, this corrects as production rises and as fossil derived fuels are more appropriately priced to account for their carbon and sustainability impacts.

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?*

No. Some of the most promising feedstocks and conversion technologies are those that are currently less progressed technologically and need the greatest level of support. Processes like HEFA based SAF are technologically ready and their challenge is scaling beyond the limitations of available feedstocks. They are likely to be the lowest cost production methodologies in the short term but are also the most bankable as a result. Depending on the feedstock they may also be significantly challenged on an LCA basis which reduces the rationale for taxpayer funds.

The potential for e-fuels and other advancing technologies to help achieve both the environmental benefits and scale that industries require is significant. In the SAF space

alcohol-to-jet also has considerable potential to scale in Australia as do other conversion technologies that broaden available feedstocks.

For this reason, careful consideration must be given not just to lowest cost production in the short term but considerations such as the ability to scale production with diversification of feedstocks and LCA/ sustainability considerations.

Question 2.3: *Should the production credit be linked to the quantum of LCLF produced, or the carbon emissions saving potential of the fuel?*

Ultimately the benefit of these fuels is their ability to reduce carbon emissions and other environmental impacts. LCLF that isn't significantly better than its fossil fuel derived equivalent fuel on an LCA basis may have limited utility in terms of regional investment, jobs and fuel security but it is going to make little contribution to achieving a net zero world.

Question 2.4: *What are your views on the cost to deploy LCLF domestically compared to internationally? Is there a local premium for domestic production?*

Yes. Construction and manufacturing costs in Australia are high and significantly more so than in other competing jurisdictions. This is particularly the case for investment in industrial scale facilities in regional Australian communities where many of these LCLF facilities may be located. Supporting infrastructure availability (LPG connections, water, electricity, road/rail connections) can also be challenging and add to costs in Australia compared to other jurisdictions.

Question 2.5: *Should the total value of production credits be capped for each project? If yes, what should the capped amount be and why?*

No.

Question 2.6: *Should production be focused on domestic supply only or should export also be permitted? What impact could restriction have for projects or the market?*

The answer to this question depends on Government priorities. There is a global market for products such as SAF and artificially reducing the opportunity for LCLF producers may be a concern for investors wanting to ensure they have a diversity of markets to sell their products into.

The counterpoint is that there are benefits to domestic use of these products and so incentivising their use in Australia is beneficial for local decarbonisation opportunities and to maintain global competitiveness. The balance is complex but would seem to favour creating sufficient local demand to underpin the investment in the production

of these fuels but not to artificially limit international market access for these fuels. This is particularly the case noting that many of the benefits for Australia in the production of these LCLF occur regardless of where the ultimate carbon benefits are utilised.

Question 2.7: *Is there a role for combined production support with capital grants for first-of-a-kind facilities?*

Yes. De-risking some of the engineering and investment challenges of first of kind facilities is critical.

Question 2.8: *What other types of funding or concessional finance could support LCLF projects (e.g. funding from CEFC and NRF)?*

This is an area where Government can play a significant role in helping to expedite and secure investment in these production facilities. We would encourage the Government to consider options for concessional finance and underwriting or sharing risk (through the CEFC or otherwise). It seems common sense that support would be given to establish these promising new domestic manufacturing opportunities when the Government is currently spending billions of dollars annually propping up legacy manufacturing and industry such as coal fired power generation, ageing refineries, steel manufacturing etc.

Government procurement of LCLF is also a prudent way to help secure domestic production of LCLF and help de-risk investment.

Question 2.9: *Is any other support required across the supply chain to enable domestic production of LCLF?*

Yes. The supporting infrastructure to sustain LCLF production in regional Australia is vital. Having worked on a range of potential LCLF feasibility studies and projects, the availability of natural gas, HV power, water/ waste treatment, zoning and transportation links for both feedstock aggregation and LCLF are often limiting factors in project feasibility and economics. For this reason, many LCLF producers look to co-locate their facilities with existing regional industries such as sugar refineries or pulp mills. Whilst there are benefits to such cooperation, they may create other scaling and commercial challenges for LCLF producers.

State, Federal and local Governments all have opportunities to assist in addressing some of these hinderances to the scale up of LCLF production.

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

A focus on incentivising genuine environmental and sustainability benefits for the LCLF is critical to maintain social licence and consumer confidence. This should be coupled with a very carefully designed and periodically reviewed demand side policy framework to ensure that the cost of these fuels is not driven by scarcity as opposed to production cost/ carbon benefits.

We would also encourage the Government to strive for simplicity and interoperability with existing international LCLF schemes and frameworks (noting appropriate adjustments for Australian specific environmental factors). For example, the default LCA values for SAF under the CORSIA could be adopted in NGERS to provide consistency and investment certainty for LCLF producers and customers to avoid LCA forum shopping or a loss of credibility in the LCA calculations.

3. Fuel Production

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?*

   No. The scheme should ideally be technology agnostic but also specifically consider the potential benefits of less established pathways to open up feedstock use and increase production.

b. *How can nascent production pathways compete with more-established production pathways (e.g. HEFA and HVO)?*

   That may be difficult in the very short term without Government support. However, the feedstock limitations for HEFA/ HVO will mean that domestic production of these fuels reaches a natural cap (particularly noting the international demand for Australia's feedstock).

   If the Government wants to see a material scale up of LCLF production, a broader set of conversion technologies and feedstocks will be required to be utilised necessitating support for these promising pathways.

c. *What minimum stage of project development (and evidence) should be expected by projects under the program?*

   Given what is being proposed is a production incentive, this may not be broadly relevant other than for other ARENA/CEFC early grant funding considerations.

Question 3.2: *Should there be a minimum facility size to be eligible?*

Scale is relevant both to the economics of producing LCLF and addressing the decarbonisation challenges of industries needing these fuels. For that reason, commercial scale facilities (tens of millions of litres annually) should be the focus of the program. Special consideration may be given to smaller scale facilities if they can demonstrate economic viability (such as smaller scale municipal solid waste-based Fischer-Tropsch facilities).

Question 3.3: *Should LCLF be required to meet a carbon intensity threshold (% carbon intensity reduction compared to fossil equivalent) to be eligible for the program? If yes, what would be a reasonable threshold, and how should that threshold be calculated and verified? If not, why not?*

Yes. The threshold should be at least 50% better on a lifecycle basis than the fossil baseline.

a. *If the production incentive is based on carbon emissions reduced, rather than volume of LCLF produced (see Question 2.3), is a minimum carbon intensity threshold still needed as part of the eligibility criteria?*

   Yes. For both international and domestic credibility and to ensure Government funds are flowing to projects with the ability to materially reduce emissions a minimum threshold and associated sustainability criteria are required.

b. *Should Indirect Land Use Change be included in the method for determining carbon intensity, for the purpose of the Program?*

   Yes. ILUC is a global challenge that needs to be considered in the context of LCLF. ILUC is incorporated in existing global frameworks such as the CORSIA which is part of why we would encourage the Australian Government to consider interoperability with such schemes.

   We would encourage the Government to consider the specific opportunities and considerations of feedstock production on degraded and arable lands. Australia's unique historic farming practices and environment present the opportunity to support such feedstock production in a sustainable and beneficial manner that may not currently be recognised in some global ILUC models.

c. *Should any feedstocks be prioritised or otherwise considered out of scope?*

   The scheme should be feedstock agnostic but should contain a minimum lifecycle carbon reduction of 50% and certification of the fuels from an internationally recognised sustainability scheme such as RSB or ISCC. This ensures fuel produced from non-sustainable feedstocks will not be eligible in the scheme.

Question 3.4: *Other than carbon intensity, should any other sustainability criteria be included?*

Yes. LCLF should meet a range of environmental and social criteria. Adopting the RSB and ISCC would be a prudent way to provide consistency and credibility domestically and internationally.

Question 3.5: *Which international and domestic sustainability schemes should be allowed to verify sustainability claims?*

RSB and ISCC. Any other emerging schemes where the framework criteria and governance can be assessed as equivalent, credible and sound.

4. Other Policy Considerations

Question 4.1: *What are your views on the aforementioned factors affecting the merit of a proposal?*

Without understanding how they would be weighted and assessed it is difficult to comment. Individually they all seem like sensible and reasonable considerations.

Question 4.2: *Recipients under the Program will need to deliver benefits according to the Community Benefit Principles under the Future Made in Australia Act (see Appendix D). How do you consider the Community Benefit Principles in relation to LCLF projects? Are there specific Community Benefit Principles that are more or less relevant?*

Principles A, B, C & E will support the delivery of the scale up of domestic production of LCLF. Special consideration should be given to how first nations employment and economic benefits could be practically incorporated into program design.

Question 4.3: *How will overseas policy developments interact with domestic policy settings to support projects reaching final investment decisions? For example, LCLF demand-side targets or mandates, and international frameworks such as the International Civil Aviation Organisation long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050.*

Overseas policy developments are already influencing the investment in LCLF in Australia. Specifically, this can be seen in the export of Australian feedstocks for use in LCLF in other jurisdictions with production incentives and in the use of these fuels where demand signals exist. In designing its LCLF policy the Australian Government must be cognisant that these global and regional frameworks are established and have already altered investment decisions and supply chains.

The fact there are demand signals for these fuels internationally also means that in the absence of demand signals in Australia fuels produced domestically will be exported. If

domestic use of these fuels is an aspiration of the Government, supply side and demand side policies must be carefully designed and work together.

Given Australia is looking to implement policy to support local production of LCLF subsequent to other jurisdictions, ensuring a level of consistency with international LCA frameworks such as GREET, RED II and CORSIA will be important. To maintain credibility of Australia's LCA calculations and to avoid compliance burdens, Australia's Guarantee of Origin Scheme should align as much as possible with these frameworks.

Question 4.4: *In addition to production support, what other measures are considered critical to achieve final investment decisions for projects? What are their key features?*

In addition to production incentives, demand side policy, infrastructure and logistics investment and adopting internationally recognised sustainability and certification schemes will all be important.

Question 4.5: *What are the intersecting policies you expect need to be considered to unlock a domestic LCLF production industry?*

There are a variety of policies that will need to work together and be considered in policy design to maximise the opportunity to expedite the production of the LCLF in Australia. These include the:

- design and implementation of demand-side measures
- Guarantee of Origin (GO) Scheme
- National Bioenergy Feedstock Strategy
- National Greenhouse and Energy Reporting Scheme
- Defence Future Energy Strategy
- fuel-quality standards
- Australian Infrastructure Plan; and
- State-level LCLF strategies.

Question 4.6: *Is there any other feedback you would like to provide that isn't covered by questions above?*

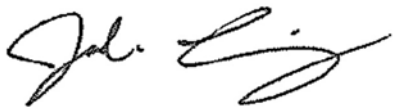
We thank the Department for the opportunity to participate in this consultation. Having worked on the scale up of the LCLF industry since 2008 it is exciting to see the Federal Government focused on domestic production incentives. As many studies have consistently demonstrated Australia has the opportunity to be a leader globally in this space. However, other jurisdictions have moved faster than Australia in terms of deploying the necessary policy frameworks on both the supply and demand sides to expedite the production of these fuels in their jurisdictions.

What is needed now is sensible, ambitious, expeditious and sustainable policy design to ensure Australia seizes this opportunity. We do not need further feedstock or technology studies – the industry needs policy direction and certainty for investment to begin. Australia should also avoid going back to first principles on all details of policy design in areas such as LCA, sustainability and GHG accounting frameworks. Where good credible work has been undertaken (including with Australian input and expertise – such as the CORSIA), draw heavily on this work and adapt it, if necessary over time. This practical approach can save years in design and implementation and provide industry with the certainty needed to invest in projects in the short term.

No significant LCLF facility will be built in Australia in the absence of clear demand side policy and clarity on sustainability and LCA criteria.

Thank you for taking the time to consider our submission. If you have any questions, please contact Jodi Litzenberger, [redacted]

Best regards,



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