18 July 2024

Department of Infrastructure, Transport, Regional Development, Communications and the Arts
GPO Box 594
CANBERRA ACT 2601

Dear Low Carbon Liquid Fuels team,

We thank you for the opportunity to provide a submission for the Low Carbon Liquid Fuels (LCLF), A Future Made in Australia: Unlocking Australia's low carbon liquid fuel opportunity Consultation Paper.

Zero Carbon Hydrogen Australia (ZCHA) is the peak body for the green hydrogen sector in Australia and a division of the Smart Energy Council. We represent 200+ domestic and international renewable hydrogen members, making us the largest peak body in the Asia-Pacific region.

The Smart Energy Council (SEC) is the peak independent body for Australia's smart energy industry, representing over 1,300 residential, commercial, and large-scale renewable generation and storage companies, smart transport firms, as well as the renewable hydrogen and ammonia industry.

Our core recommendations on the consultation paper are:

- LCLF fuelled vehicles are likely to predominate sectors where battery electric and renewable hydrogen fuel cell vehicles may be impractical (e.g., agriculture, road and rail heavy freight, maritime and aviation).

- LCLF grants must rely on a Carbon Intensity (CI) assessment framework.

- Grant funding could draw resources from fossil fuel subsidies to support the development of LCLFs and correct the market in terms of real production costs of legacy fossil fuels from a 'well to tailpipe' perspective.

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The Smart Energy Council is also pleased to support the overall Future Made in Australia plan and its potential to strengthen Australia's renewable energy position intentionally. The LCLF industry provides a singular opportunity for the Australian government to invest in an industry which will contribute to economic and fuel security, regional job opportunities and facilitate broader transport sector decarbonisation.

Liquid fuels at present make up over half of Australia's final energy consumption[1] and spans Australia's heavily emitting transport sector in the form of petrol, diesel and jet fuel. Transport is forecast to lead Australian emissions sources by 2030[2] and present demand for diesel is climbing with mining and agricultural sector growth and increased diesel vehicle use[3].

LCLF fuelled vehicles are likely to predominate in sectors where battery EV and renewable hydrogen powered vehicles could potentially be impractical, such as aviation, road and rail heavy haulage, long duty commercial vehicles and maritime transport.

In sectors such as light transport and passenger vehicles, EV and renewable hydrogen solutions are likely to be more cost effective and will support more rapid reduction in emissions. As such, the following submission applies to those use cases where EV or renewable hydrogen solutions may not be economically logical and LCLFs provide a better option than fossil fuels.

[redacted]

[1] https://www.dcceew.gov.au/energy/security/australias-fuel-security
[2] https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2022
[3] https://www.bitre.gov.au/sites/default/files/documents/BITRE-Road-Vehicles-Australia-January-2023.pdf

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What do you think are Australia's comparative advantages as an LCLF producer? Where does Australia face international competition?

Australian LCLF production would benefit from advantages including extensive land mass, a large volume of agricultural residues which could be repurposed into the LCLF production pipeline and an ability to develop this industry at a large scale with low cost power. The potential to produce LCLFs is complemented by a large domestic demand for liquid fuels across mining, heavy freight (road and rail), agriculture, and aviation sectors[4].

International competition in the Asia Pacific would come from the emerging economies of SouthEast Asia with extensive residues from palm oil, for example, which could be utilised in the production of LCLFs[5].

Based on the current policy and market environment, to what extent will Australia rely on imports of LCLF, as opposed to domestic production?

The current policy and market environments necessitate 100% importation of LCLFs as the current market settings make it prohibitively difficult for domestic production to be stood up or compete with the broader regional or international market.

What mechanism do you think would best support a production credit scheme – through the tax system, contract for difference or grant based funding?

To effectively support a LCLF industry domestically, all available levers will be required with grant funding to support project development being essential. This funding and support must prioritise fewer applicant projects and commit material investments to ensure their success. Grant funding should be applied to the projects that have the highest order of industrial logic, and not necessarily have lead proponents who are large organisations.

[4] https://australiainstitute.org.au/wp-content/uploads/2022/04/P1036-Over-a-barrel_liquid-fuel-security

[5] https://www.researchgate.net/publication/350069830_The_Utilisation_of_Palm_Oil_and_Oil_Palm_Residues_and_the_Related_Challenges_as_a_Sustainable_Alternative_in_Biofuel_Bioenergy_and_Transportation_Sector_A_Review

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Are there other mechanisms the Government could consider to deliver production support, other than a production tax incentive or competitive grant-based payment? What do you think is the highest priority form of support?

Support to LCLF production also needs consideration of actual costs on the current status quo; namely, the removal of subsidies on fossil liquid fuels and a process to evaluate / impose fuel duty (for example) based on life cycle CI (ie. lower carbon gets higher incentive). Production support funding and incentives could be drawn from the $14.5billion governmental subsidies provided to fossil fuel producers and users between 2023-24[6].

What are expected production costs of LCLF in Australia? How would you design production incentives to make production competitive in Australia?

Production costs will vary based on technology maturity, location and feedstock availability as well as power costs. It is worth noting that Biodiesel and Bioethanol are widely considered the most cost-effective LCLF due to their utilisation of feedstocks from agricultural crops, waste materials and algae, and technology being mature. However, labour costs and government incentives among the factors listed mean LCLF production cost is radically variable.

Production incentives should be comparable with Hydrogen Headstart, with a component relating to CI to reduce production costs/raise prices and consequently 'even the playing field' for LCLFs in comparison with fossil fuels. A production incentive for LCLFs must work to rival the economies of scale and well-entrenched infrastructure fossil fuels benefit from in Australia currently, much of which has been supported by government investment either directly or indirectly. CI mechanisms align policy conditions with environmental goals, encouraging investment and development in sustainable alternatives to traditional fossil fuels, and is consistent with the approach being taken by other jurisdictions.

[6] https://australiainstitute.org.au/report/fossil-fuel-subsidies-in-australia-2024/

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What would an expected rate of support be under a competitive grant-based production scheme (contract for difference or fixed grant amount per production unit)?

Current market pricing indicates that LCLFs trade at a premium of 2-3 times fossil fuels. A Contract for Difference (CFD) model, in conjunction with a CI model that flexes tax rates on legacy fuels, could work to balance the discrepancy between these liquid fuel economies and encourage uptake of the more environmentally sustainable option: LCLFs.

Grants are needed to support project development and offset the high capital costs of Australian projects and ensure long term success through enduring government investment and support.

How many producers would you expect a production incentive scheme to support in Australia?

This estimate varies, however it is important to support projects that have industrial logic, regardless of whether the proponent is a well-established 'brand'. The LCLF sector needs innovation to succeed, which may be best delivered by emerging organisations rather than existing incumbents. Projects should be assessed on the basis of industrial and commercial logic, not the perceived strength of the proponent at the point of application assessment.

How could the introduction of a production incentive scheme affect competition in fuel production and supply markets, and also amongst fuel users?

The sector needs competition in order to maintain commercial tension and lower costs across LCLFs and legacy fuels. Incentive structures need to support LCLFs and 'penalise' legacy fossil fuels based on CI. Carbon offsets from fossil fuels should be regarded as a first step but not a long term solution.

What are the expected timeframes for when an industry would be sustainable without support from the Government?

When the size of the Australian market in global terms and the cost of delivering projects domestically is considered, it could be argued that LCLFs will never be competitive in Australia without support. This reality can be seen in the limited vehicle manufacturing capacity in Australia today. The vehicle manufacturing

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industry suffered from little to no government support, high operating costs, competition from larger and more efficient production in the APAC region which were strengthened by existing economies of scale (ie. Japan). These challenges were compounded by Australia's geographic isolation, relatively small overall market when compared to global markets. This debilitating combination can likewise hinder the LCLF industry, if the Australian government does not intervene[7].

How should production support be funded, and how could this best be aligned with the beneficiaries of the production support?

Production credit should be based on CI to support operations. This could be effectively funded by the removal of existing fossil fuel subsidies ($14.bn in FY24[8]) and tax credits.

Would production support need to offer a different rate of incentive for SAF and renewable diesel?

A production support model based on CI that captures all fuels (LCLFs and legacy) should equalise the support across all LCLF production and application avenues.

Would a potential production support program need to prescribe certain proportions of production volumes towards SAF or renewable diesel?

There should be a minimum scale for projects to support capital costs and offset fixed development costs. Grant funding should not be focussed solely on small projects where the fixed development costs hinder overall cost competitiveness. Scale is needed to support economics.

Would production support need to provide different levels of support for emerging and established production pathways? What are some of the design considerations the Government should consider?

It is important that any support mechanism recognises current and future technological developments, but also recognise that technology needs to be bankable at Final Investment Decision. The LCLF sector cannot afford to inject

[7] https://www.researchgate.net/publication/293044552_Who_Killed_the_Australian_Automotive_Industry_The_Employers_Government_or_Trade_Unions
[8] https://australiainstitute.org.au/report/fossil-fuel-subsidies-in-australia-2024/

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significant grant funding into technologies that won't function in a commercial manner. Projects that are supported by the Government should be well structured including tangible progress on feedstock, delivery solution and offtake arrangements.

What policy approaches are technology agnostic, applying efficiently to new technologies as they emerge?

Policies based on CI are inherently technology agnostic as they focus the incentives on carbon intensity of fuels rather than prescribing specific technologies for achieving reductions. By not mandating specific technologies, CI schemes encourage innovation and competition among different technologies and fuel types. This can promote development of a diverse range of low carbon fuel options (ie. biofuels, renewable hydrogen, synthetic fuels) while ensuring future fuel efforts don't hinder emissions reduction targets or hold-back sector decarbonisation.

Do you support an emissions reduction threshold being included as part of eligibility criteria for fuels to receive support under a production incentive program? What threshold would you seek be included in eligibility criteria (for example 50 per cent emissions reduction relative to conventional fuels, or another emissions reduction ratio)?

Policies based on CI would inherently introduce a sliding scale of support, but there could also be a minimum CI threshold to qualify for Government support.

Do you think any threshold should increase over time?

Yes, aligned with emission targets – but material to start with to build momentum in the LCLF industry and when established, these thresholds would come into play.

Do you think incentives should be included to encourage emissions reduction in addition to a minimum eligibility threshold?

Yes; a CI-based mechanism would achieve this as it encourages lower carbon fuels to be more cost-viable in production and dissuades legacy fossil fuels (high emission liquid fuels) to be produced or used.

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Do you have views on the sustainability criteria under consideration as part of the criteria? What additional or alternative criteria would you want to see form part of the criteria?

'Food vs fuel' considerations are important – the EU RED II mechanism provides a useful reference. This Renewable Energy Directive ensures that LCLF producers in the biofuel economy source feedstocks sustainably (recognised by a sustainability standard scheme), as those producers who do not source their feedstock sustainably lose eligibility for government support[9]. Mechanisms such as this also work to limit the usage of LCLFs with high indirect land-use change (iLUC) or that come from land with high carbon stock and track biodiversity[10].

What are the community benefits associated with LCLF production in Australia?

Given the location of biogenic carbon feedstock, many of LCLFs projects will be located in regional areas, and would ideally be located within or adjacent to a Renewable Energy Zone. Projects in these locations would also support workforce transition from mining and give other industry jobs the opportunity for necessity (ie. engineering, refining, research). LCLF production can aso reduce waste form agricultural residues and organic waste materials typically added to landfill (eg. include corn stover (stalks, leaves, and cobs)). Use of agricultural residues as feedstocks also represents a new revenue stream for the agricultural sector where these residues are largely waste streams currently.

What options should the Government consider in its regulatory impact analysis, such as a mandate introduced over time, low carbon fuel standard connected with a trading scheme, a non-binding target or other demand options?

The Government should carefully consider a mandate or low carbon fuel standard which is initiated with a modest but immediate mandate which increases over time. This mandate could also be connected to a tradable book and claim approach, aligning to global markets.

[9] https://joint-research-centre.ec.europa.eu/welcome-jec-website/reference-regulatory-framework/renewable-energy-recast-2030-red-ii_en
[10] https://drive.google.com/file/d/1cJb662WmCPu2toTGilewS-O_yZtTODW2/view

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