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Submission form: Consultation on the Sustainable Biofuels Mandate

The Ministry of Business, Innovation and Employment (MBIE) and the Ministry of Transport (MoT) would like your feedback on a proposal to increase the use of sustainable liquid biofuels in New Zealand to reduce greenhouse gas (GHG) emissions from transport. Please provide your feedback by **5pm, 26 July 2021**.

When completing this submission form, please provide comments and supporting explanations for your reasoning where relevant. Your feedback provides valuable information and informs decisions about the proposals.

We appreciate your time and effort taken to respond to this consultation.

Instructions

To make a submission you will need to:

1. Fill out your name, email address, phone number and organisation. If you are representing an organisation, please provide a brief description of your organisation and its aims, and ensure you have the authority to represent its views.
2. Fill out your responses to the discussion document questions. You can answer any or all of these questions in the [discussion document](#). Where possible, please provide us with evidence to support your views. Examples can include references to independent research or facts and figures.
3. If your submission has any confidential information:
 - i. Please state this in the email accompanying your submission, and set out clearly which parts you consider should be withheld and the grounds under the Official Information Act 1982 (Official Information Act) that you believe apply. MBIE and MoT will take such declarations into account and will consult with submitters when responding to requests under the Official Information Act.
 - ii. Indicate this on the front of your submission (e.g. the first page header may state "In Confidence"). Any confidential information should be clearly marked within the text of your submission (preferably as Microsoft Word comments).
 - iii. Note that submissions are subject to the Official Information Act and may, therefore, be released in part or full. The Privacy Act 1993 also applies.

How to submit this form

4. Submit your feedback:

i. As a Microsoft Word document by email to energymarkets@mbie.govt.nz with the subject line: *Consultation: Sustainable Biofuels Mandate*

ii. By mailing your submission to:

Consultation: Sustainable Biofuels Mandate
Energy Markets Policy
Building, Resources and Markets
Ministry of Business, Innovation and Employment
PO Box 1473, Wellington 6140
New Zealand

Submitter information

Submitter information

MBIE and MoT would appreciate if you would provide some information about yourself. If you choose to provide information in the section below, it will be used to help MBIE and MoT understand how different sectors view the Sustainable Biofuels Mandate proposal. Any information you provide will be stored securely.

Your name, email address, phone number and organisation

Name: Ian Suckling

Email address:

[REDACTED]

Withheld under section 9(2)(a)

Phone number:

[REDACTED]

Organisation:

Retired

- The Privacy Act 1993 applies to submissions. Please tick the box if you do **not** wish your name or other personal information to be included in any information about submissions that MBIE and MoT may publish.
- MBIE and MoT may upload submissions and potentially a summary of submissions to the website(s), www.mbie.govt.nz and/or www.transport.govt.nz. If you do **not** want your submission or a summary of your submission to be placed on either of these websites, please tick the box and type an explanation below:

I do not want my submission placed on MBIE's website and/or MoT's website because... [insert reasoning here]

Please check if your submission contains confidential information

- I would like my submission (or identifiable parts of my submission) to be kept confidential, and **have stated** my reasons and ground under section 9 of the Official Information Act that I believe apply, for consideration by MBIE and MoT.

Sustainable Biofuels Mandate

How the Sustainable Biofuels Mandate would work

1. Do you support having a GHG emissions reduction mandate?

Yes Yes, with changes No Not sure/No preference

Please explain your views.

I strongly support the implementation of a GHG reductions mandate as proposed here for New Zealand. Such a mandate will facilitate reducing GHG emissions from the existing ICE vehicles in the shorter term, and potentially longer-term decarbonisation of transport.

A GHG emissions reduction mandate such as this aligns directly with the desired outcome, i.e. reduced transport GHG emissions, but leaves the nation, companies and individuals free to work out how to deliver the specified GHG reduction in the best and most cost-effective way. Furthermore, it recognises that how much biofuel substitution reduces emissions depends on both the level of substitution and the emissions due to the particular biofuel being added.

A very important advantage of a GHG emissions reduction mandate, as opposed to policies which promote particular low-carbon solutions, is that it provides NZ options in the face of an uncertain future. We really don't know quite what the country will be facing in the 2040s and 2050s. As one particularly relevant example of this, all new low-carbon fossil fuel replacements require significant technical advances to occur for large-scale implementation (e.g. better EV batteries which store more energy and cost less, or viable drop-in biofuel production processes). History has shown it is almost impossible to predict if and how quickly these developments will occur. This is particularly relevant for the heavy duty transport sector where the best low-carbon fossil fuel replacement is still unclear¹.

I would also support this mandate being extended in future to include other low-carbon fuels such as electricity and green hydrogen. In doing this it will be important that, as with biofuels, emissions incurred during the production of these other alternative low-carbon fuels are taken into account. This will much better reflect their true impact on reducing New Zealand's GHG emissions (the Hikina te Kohupara report² considers only in-use emissions).

2. Do you support the proposal to require certification of lifecycle emissions of biofuels sold in New Zealand using international standards?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Please explain your views.

Yes, a well-designed credible lifecycle certification scheme is an essential part of a GHG emissions reduction mandate.

The suggested approach to doing this looks sound, but I would suggest that a single GHG assessment standard be selected, rather than allowing certification against (a list of) different standards. This is because different LCA models currently in use in different parts of the world give significantly different answers. For example, a study by international experts carried out within IEA Bioenergy compared calculated emissions for the production of ethanol from three different feedstocks using 3 public LCA tools, BioGrace (EU), GHGenius (Canada), and GREET (U.S.), and a research-oriented Brazilian LCA tool.³

¹ Ministry of Transport, Green freight. Strategic working paper (2020). https://www.transport.govt.nz/assets/Uploads/Paper/Green-Freight-Strategic-Working-Paper_FINAL-May-2020.pdf

² Ministry of Transport, Transport Emissions: Pathways to Net Zero by 2050 (2021) <https://www.transport.govt.nz/assets/Uploads/Discussion/DiscussiondocumentHikinakeKohuparaKiamaurioraaitewiTransportEmissionsPathwaystoNetZero2050.pdf>

³ L.G. Pereira, O. Cavalett, A. Bonomi, Y. Zhang, E. Warner, H.L. Chum, Comparison of biofuel life-cycle GHG emissions assessment tools: The case studies of ethanol produced from sugarcane, corn, and wheat, Renewable and Sustainable Energy Reviews, 110: 1-12 (2019)

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The calculated emissions across models ranged from 16-45 for sugarcane ethanol, 43-62 for corn ethanol, and 45-68 g CO₂eq MJ⁻¹ for wheat ethanol.

Consequently, which LCA tool is used to calculate the lifecycle emissions would have a major impact on how much ethanol is required to blend into petrol to meet a GHG reduction target. For example, with sugarcane ethanol this would mean a variation in the level of ethanol substitution between 10% and 6.5% by volume depending on the LCA tool used. Specifying a single LCA tool would, for example, prevent cherry-picking from amongst different standards to give least amount of ethanol that needs to be added.

Is it intended that transport of the biofuel from where it is produced to New Zealand also be included in the lifecycle emissions of the fuel? This should be specified.

3. Do you support applying the Sustainable Biofuels Mandate to all liquid transport fuel?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Please explain your views.

Yes, particularly given the apparent intent to grow this mandate in future and extend it to include other low-carbon fuels including electricity and green hydrogen.

I would also support the extension of the mandate to include off-road uses of liquid fossil fuels, particularly the estimated 30% of diesel used in off-road applications such as in agriculture, forestry, construction and mining. This will help decarbonise these activities and may well simplify fuel distribution and compliance monitoring by avoiding the need for a second (lower-cost) biofuel-free diesel grade.

4. Are the proposed initial emission reduction percentages for 2023–2025 appropriate for New Zealand? If not, what should they be?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

As can be seen below, incorporating 10% bioethanol into all petrol and 7% biodiesel in all diesel used for domestic transport (the maximum levels currently allowed for general sale in the NZ fuel regulations) could only reduce our domestic transport emissions by between 2.4 and 3.1%. This highlights two key points:

- The % reduction in emissions vs fossil fuel number is very important – and therefore it will be vital that how this is calculated is robust, well-specified and audited.
- The suggested 2025 fuel emissions reduction level is unlikely to be met only with conventional biofuels.⁴

⁴ GHG reduction numbers from a recent report prepared for EECA: C Comendant, T Stevenson, Biofuel insights (2021) <https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/Liquid-Biofuel-Research-Report-March-2021.pdf>

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	Blend		Biofuel feedstock	GHG reduction % vs petrol/diesel	GHG reduction at blend limit	
	% by volume	% by energy			% of fuel used	% of total domestic consumption
Ethanol	10	6.7	Sugarcane	54	3.6	1.7
			Corn	30	2.0	0.9
Diesel	7	6.51	Animal fat	48	3.1	1.5
					Maximum reduction	3.1
					Minimum reduction	2.4

Notes:

1 litre of bioethanol contains the same amount of energy as 0.67 litres of fossil petrol, while 1

litre of biodiesel has the same energy content of 0.93 litres of fossil diesel.

Of the 212 PJ of fossil fuels used for domestic transport in 2020, 46% was petrol and 47% as diesel.

I believe our mandated emission reduction percentages should be ambitious, but also practically achievable (albeit with a lot of sweat). Unfortunately, I fear the proposed 2025 mandate (3.5%) requiring biofuel substitutions up to or above blendwall limits is highly unlikely to be practically achievable in 3 years, particularly given it is coming off a base of essentially zero biofuels. Has any other country ever increased biofuel use so rapidly? I suspect not. This will require getting all the necessary fuel distribution infrastructure in place and securing supplies of the required volumes of biofuels. I would recommend that the mandates be set at lower levels in the initial phases of this mandate, so that they are practically achievable with a bit of stretch. Input from the likes of fuel importers, fuel distributors and car importers should provide you a good understanding of what it will take to deliver different levels of biofuels and therefore what practically-achievable levels of GHG reduction would be. Furthermore, a critical success factor in these early phases of introducing biofuel blends will be gaining consumer acceptance of the need for, and use of, biofuels in their transport fuels - vital for the larger GHG reductions to come. The mandated levels must recognise this.

Quite how close to the proposed 2025 mandate blendwall limits for conventional biofuels could get, clearly depends on the emission reduction numbers for the different biofuels. In the above, I used numbers from the recent EECA report,⁵ but note that some of the numbers given in Appendix 1 of the consultation discussion document would allow the 3.5% mandate to be met, while others will make it even more challenging. There are clearly other options to help meet the mandate, including incorporating some renewable diesel or SAF into our transport fuel (at what cost?), or using levels of biodiesel above B7 in certain applications. On the other hand, there are still vehicles on the road which cannot run B7 or E10 blends and colder parts of the country where B7 blends might not be appropriate.

The discussion document talks about domestic production. Being realistic, and with the possible exception of recommissioning of the Z biodiesel plant, we should not expect significant additional domestic biofuel production by 2025. Ex-colleagues from the pulp and paper sector suggest that for a major industrial facility such as a biofuel plant, full-scale production will typically take 10 years from the time a resource consent is started.

5. Do you support having single GHG emissions reduction percentages across all fuel types, or do you favour separate reduction percentages? Why and how many separate percentages would you suggest we have?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

⁵ C Comendant, T Stevenson, Biofuel insights (2021) <https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/Liquid-Biofuel-Research-Report-March-2021.pdf>.

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At this early stage of a New Zealand mandate I believe a single GHG emissions reduction percentage across all fuels is appropriate, particularly if the mandated levels are near to or above the current blend wall limits for conventional biofuels. To me, reducing emissions in whatever is the easiest/lowest cost way possible is the best way to start reducing transport emissions.

However, separate reduction targets might be appropriate and beneficial in the longer term, particularly if they would help encourage domestic production of biofuels, or facilitate decarbonisation of otherwise difficult-to-decarbonise sectors.

I suggest this question be re-visited when levels of the provisional percentages in the future are finalised in 2024, particularly if the Sustainable Biofuels Mandate is expanded beyond biofuels to include other low-carbon fuels such as electricity or green hydrogen. Biofuels provide more flexibility than other low-carbon fuels and, for the longer term, ought to be targeted at difficult-to-decarbonise sectors such as heavy duty transport and aviation where there are few other options. EVs do currently seem the best long-term option in NZ to decarbonise our light vehicle fleet, so it would not make sense to allow biofuels to be used in the longer term for decarbonising light vehicles.

6. Do you support provisional emission reduction percentages being set for 2026–2030 and 2031–2035 with the percentages being finalised in 2024 and 2029 respectively?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

As you recognise, long-term policy certainty, as indicated with such provisional emission reduction percentages, will be vital to encourage investment in the production, distribution and use of low-carbon transport fuels.

If the intent is to expand this mandate beyond biofuels, provisional emission reduction levels need to include these fuels as well. For example, potential investors in domestic biofuel production will need to understand what their future market might be before committing to any investment.

7. Do you support the proposal that biofuel producers must be certified against an established sustainability standard to count towards achievement of the emissions reduction percentage?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

While I certainly support biofuel producers being certified against a sustainability standard, it will be very important to carefully think through how such sustainability criteria might be applied to a domestic biofuel producer and NZ feedstocks. We certainly do not want these sustainability criteria, which are often developed in response to issues in other parts of the world, becoming a barrier to domestic production of biofuels. What does “compete with food production” and “not grown on land of high value for food production” actually mean in a New Zealand context? I remember when involved in Scion’s Biofuel Roadmap, that this was a matter of much discussion and debate, both within the project team and with stakeholders. As shown in the report from this project, how these questions are answered can lead to quite different outcomes in terms of what biofuels are produced, where they are produced, and their costs.⁶

⁶ Scion. New Zealand Biofuels Roadmap Summary Report (2018).

https://www.scionresearch.com/_data/assets/pdf_file/0005/63293/Biofuels_summary_report.pdf

Sustainable Biofuels Mandate

8. Do you support having a joint fuel industry/government information campaign to inform New Zealanders about biofuels and the Sustainable Biofuels Mandate?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

Yes. Public acceptance of biofuels and their use will be vital to the success of this mandate.

9. Do you support the labelling proposal that informs consumers about specific biofuels at the point of sale?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

It will be important, particularly for retail sales, that point of sale labels provide current information on which biofuel is added and how much biofuel is added. There will likely be situations/vehicles where biofuel blends or high blend levels are not suitable. A vague statement like "May contain up to 10% bioethanol" on petrol pumps not going to be appropriate in such situations.

I am much less convinced of the value of the other suggested label information. Do most consumers know or care where their fossil fuel or electricity comes from, or even understand why this information is provided? Could not fuel retailers be required to maintain a website (referenced on the label) giving information to the few that are interested? A website would be a much better option than a label for current information, particularly as it may well be frequently changing and may vary by location within the country.

10. Should New Zealand try to overcome the challenges that domestic biofuel producers face in maintaining access to affordable supplies of domestically produced feedstocks? Do you have any suggestions for how this challenge could be overcome?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

First, I strongly support the establishment of a domestic biofuel production sector. I believe that such domestic production should be focussed on the production of advanced fuels targeted at sectors like heavy duty transport and aviation which are otherwise difficult to decarbonise.

This question presumably relates back to Z mothballing its biodiesel plant, citing high tallow export prices making it difficult to compete with fossil diesel. Is this still going to be the case with a mandate in place and NZ needing to import large volumes of biofuels (possibly including some renewable diesel) to meet the mandates? Is this high tallow price likely to continue in for the next 3-5 years? I don't know. As a general principle I do not support Government dictating where an agricultural producer must sell its product.

I believe there is a bigger question that should really be being asked: If New Zealand wants to encourage a domestic biofuels industry - and the cabinet paper certainly suggests this - how should this best be encouraged? Access to a sustained supply of a suitable feedstock and its price is but one (albeit important) consideration for a potential investor in such a plant/industry. There are many other options to encourage domestic biofuel production, which could include (but are certainly not limited to) mandated levels of domestic biofuels, capital support and tax incentives. The time taken to consent, finance, build and commission a biofuel plant (typically 5-10 yrs) needs to be recognised when considering the role domestically-produced biofuels could play in meeting biofuel mandates.

Sustainable Biofuels Mandate**How could the Sustainable Transport Biofuels Mandate be implemented?**

11. Do you think the minimum threshold for compliance of 10 million litres of transport fuel in a calendar year in New Zealand is appropriate? If not, what level would you change it to?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

12. Do you agree with the method for calculating a supplier's GHG emission reduction?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

13. Do you think the annual reporting regime, including its offences and fines, is practical and appropriate?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

14. Do you support the performance of fuel suppliers being published to enable consumers to reward the industry leaders in reducing GHG emissions?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

15. Will the proposed penalties encourage fuel suppliers to achieve the required emission reductions? If not, would level should they be?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

16. Do you support the proposal for fuel suppliers to defer achieving their emissions reductions for years 1 and/or 2, in full or in part, to the following year?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Sustainable Biofuels Mandate

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

17. Do you support fuel suppliers banking any surplus emissions reductions in a year and using it to reduce the percentage needed to be achieved the following year?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

18. Do you support fuel suppliers borrowing for shortfalls in emissions reductions in a year, and making the shortfall up the following year?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]

19. Do you agree with the proposal to allow trading through the use of entitlement agreements?

Yes, I agree I agree in part No, I don't agree Not sure/no preference

Is there anything you would like to tell us about the reason(s) for your choice?

[insert response here]