

## How to submit this form

# 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](mailto: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:

Dr Ian J. Miller

Email address:

[REDACTED]

Phone number:

[REDACTED]

Withheld under Section 9(2)(a)

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](http://www.mbie.govt.nz) and/or [www.transport.govt.nz](http://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.

[insert response here]The biggest single problem with biofuels is we do not know for sure what are the optimal ways of going about it. There is the problem that the easiest ways to reach the early targets may close out better options later. I have been working in this area on and off since about 1973 (then at Chemistry Division, DSIR) and since then I have seen various options tried, and I have worked in the field myself. The early efforts were largely for security reasons, and it was never possible to compete with Saudi crude, so when the OPEC cartel broke down, the projects were shelved and forgotten. However, I know that it is possible to make biofuels that are equivalent to hydrocarbon fuels currently used, and in some of my own research I could make fuel compounds that meet all the requirements for jet fuel. Other components made high octane petrol and high cetane rated diesel materials. It can be done, but none of this has left the lab stage, and there are serious engineering problems. On the other hand, there have been projects in the US that seem to address these issues. In short, my recommendation is for more scientific research to be sure the right options are chosen.

My biggest concern here is that the entire focus is on existing technology. You will set up a raft of small producers whose only goal is to help avoid various fines, etc, but there is no ambition to find technology to replace all fossil fuel and yet run liquid fuel cars/aircraft/ships. You cannot convert everything to electric: there is not enough mineral resources, and anyway, we cannot throw away the existing stock. As an example, during my time at DSIR I established that the municipal refuse from a family of four, if used to make hydrocarbon fuel following a process that was to be built in Worcester Mass.at, from memory, the 50t/d scale would, if implemented properly, lead to every family of four providing about 32 l/week of fuel. It can be done. That plant was never built because the Saudis flooded the market with cheap oil, but it fitted all the engineering requirements for a multinational chemical company to at least consider building it. There is a lot of potential technology that is not quite properly developed.

Further, as I show in my ebook "Biofuels", there is a wide range of possible raw materials, and New Zealand is in a rather unusual position of having a relatively small population and it has forestry and agricultural industries. However, as I also show, there are a variety of "easy" options that, in the long run, will be to our disadvantage if we choose poorly. We have the opportunity, but we also need research and development before diving in.

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.

[insert response here]I am unaware that there are suitable standards at present because we don't know yet what the fuels will be exactly, however we have to try to use what at least some other countries use.

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

## Sustainable Biofuels Mandate

Please explain your views.

[insert response here] In my opinion, the first focus on biofuels should be on using wastes as raw materials. I am far from happy with assessing "life cycle emissions" because a lot depends on aspects that involve a lot of assumptions. For example, just about all organic wastes will end up either as methane, carbon dioxide, or just maybe a little carbon, and we will make little progress if we spend too much time arguing about numbers that depend on assumptions that cannot be validated.

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?

[insert response here] 2023 -2025 is too short a time because it encourages adopting exercises like making ethanol, and that is really a bad move. We need to know what is optimal before we start making changes to cars, such as fuel lines, that will be unsuitable for other biofuels.

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?

[insert response here] The object of the exercise should be to make biofuels equivalent to current fuels, or sufficiently so that their use can be mandated by ability to produce. Anything else will simply leave problems and much wastage and economic trouble

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?

[insert response here] We should go for as much as we can make that is equivalent to our current fuel, ASAP. The setting of targets like that is a waste of time. Either we can make the fuels or we cannot, and if we cannot, it really is a waste of time. As an aside, the term biofuel should be carefully thought out. It is possible to make perfectly good hydrocarbon fuel out of waste plastics, and given we have a plastic waste problem, why punish that route?

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?

## Sustainable Biofuels Mandate

[insert response here] Who writes the standard? My view is first go for wastes, and make as much fuel as possible. This sort of approach does not fit well with a sustainability standard, which more or less requires cultivation of raw material. For forestry wastes, for example, depend on the amount of forest cut down, so it is not sustainable in that sense, but once they are cut down, why not use the wastes?

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?

[insert response here] This depends on who writes the information. I think it is important that the public be informed, BUT the information has to be complete, and not slanted to one particular direction

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?

[insert response here] Consumers should know what they are getting.

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?

[insert response here] If you choose the correct raw materials, I believe New Zealand could power its liquid fuels from resources that do not compete with agriculture, although there obviously will be competition for some area usage. I wrote an ebook "Biofuels" that outlines a number of these issues. Again, it is how you go about it that affects the outcome. Thus cultivating marine algae is an option, and this, if done properly, encourages fish and shellfish. If done wrongly, it is a mess.

## 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] We don't have the production. This simply forces people to go down unproductive routes to meet a mandate that has seemingly come out of nowhere, and has no good economic or scientific reasoning behind it. Of course we should do as much as we can, but what we try

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to do should not be governed by pulling numbers out of a hat. We need a feasibility study that will show what can be done, when, and what the long-term effects will be

### 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] What is missing is the emissions used in making the biofuel. You need some means of calculating that. As an aside, the example of using biodiesel shows a couple of points that I have been concerned with. The assumption is made that biodiesel is equivalent to diesel. On what ground? Mass, volume? The second one is that biodiesel itself, if it means the methyl esters of fatty acids, could be replaced simply by flash pyrolysis of the fat, which makes real diesel, or even better, throw the lot into a hydrothermal processor and get real diesel, and some petrol. If you build a large biodiesel plant, you simply waste money OR prevent yourself from ever reaching the zero carbon goal because the fatty acids will not make a proper diesel suitable for most motors with an adequate temperature range.

### 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] Again, taking your fatty acid for biodiesel example, who files the return? Whoever blends the diesel? If it is someone simply filing that they blended x% of biofuel of the type A into standard fuel, that would be good, but that should be a simple return.

### 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] There has to be allowance for the inability to supply. Returning to you fatty acid biodiesel example, in the deep south during winter such fatty esters would precipitate out unless they were very dilute, in which case why bother. Further, if there is not enough fat available, what then? If

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you want to make this work, encouragement, not fines for not doing the paperwork properly is more likely to work

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

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

[insert response here] I would be more generous with the time, and I would hope that the more advanced technology would be encouraged, and that might take more than two years to get going. Think about how long it takes to get permits to build a factory in NZ. You waste most of the two years arguing resource consents and location permits, and when it gets built, it does take some time for the engineering to bed down.

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] Why do they need to bank it? Better to give a reward so they continue to try to produce more next year. This whole scheme seems to be based around punitive measures – do it or else? A better approach would be to increase tax on fossil fuels and exempt biofuels. Do this properly, and the more biofuel produced, the bigger the reward.

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] No. see the next response.

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] No. I think the rewards should be financial, e.g. through the tax system. That way there is no need to trade. You sell and make more. If you want to sell to a competitor, that is fine, but it has nothing to do with the regulator.