

Call for evidence

Interim
Climate
Change
Committee

We are calling for evidence on options available to reduce greenhouse gas emissions over the period 2022 to 2035.

Why are we doing this?

The Interim Climate Change Committee is the precursor to the proposed Climate Change Commission, expected to be established in late 2019 under the Zero Carbon Bill¹. The Bill provides a framework to help New Zealand deliver on the objectives of the Paris Agreement.

A key part of the proposed Commission's work will be to advise the Government on emissions budgets.

Emissions budgets set the total emissions of all greenhouse gases permitted in the relevant budget period. The Government will set emissions budgets based on the proposed Commission's advice.

Why are we doing this now?

We are running this call for evidence now as foundation work for the proposed Climate Change Commission to enable it to start work immediately as soon as it is set up.

It will help identify relevant information for developing these emissions budgets, and to maintain a broad, robust and transparent approach in developing the proposed Commission's evidence base.

We have been asked to do this through our [Terms of Reference](#). This work is also outlined in our letter to the Minister for Climate Change on 7 May 2019 [here](#).

What are we looking for?

We are looking for high-quality, credible, evidence that will support the proposed Commission's work on emissions budgets. This is likely to include knowledge and evidence of technologies and options to reduce emissions, and the economic, environmental, cultural and social impacts of them. We are not looking for personal views or opinions.

What if I have already made submissions on similar topics?

If you have already submitted evidence as part of consultation run by Government agencies, such as the Zero Carbon Bill or the Ministry of Transport's Clean Car Standard and Discount, then we are happy for you to point us to those submissions, noting the key information or material that relates to our call for evidence.

¹ Climate Change Response (Zero Carbon) Amendment Bill:
<http://www.legislation.govt.nz/bill/government/2019/0136/latest/LMS183736.html>.

What will we do with the evidence we gather?

We will use this information to inform our initial work on emissions budgets and add to the evidence base the proposed Commission will draw upon.

Confidentiality and data protection

All or part of any written response (including the names of respondents) may be published on our website www.iccc.mfe.govt.nz. Unless you clearly specify otherwise, we will consider that you have consented to both your name and response being published.

Please be aware that any responses may be captured by the Official Information Act 1982. Please advise us if you have any objection to the release of any information contained in your response, including commercially sensitive information, and in particular which part(s) you consider should be withheld, together with the reason(s) for withholding the information. We will take into account all such objections when responding to requests for copies of, and information on, responses to this document under the Official Information Act.

The Privacy Act 1993 applies certain principles about the collection, use and disclosure of information about individuals by various agencies, including the Interim Climate Change Committee. It governs access by individuals to information about themselves held by agencies. Any personal information you supply to the Committee in the course of making a response will be used by the Committee only in relation to the matters covered by this document. Please clearly indicate in your response if you do not wish your name to be included in any summary of responses that the Committee may publish.

Call for evidence: response form

We are looking for responses that are evidence-based, with data and references included where possible. Please limit your response to each question to a maximum of 400 words, plus links to supporting evidence, using the template provided. Please answer only those questions where you have particular expertise or experience.

We recommend that you refer to the Climate Change Response (Zero Carbon) Amendment Bill when considering your answers, which can be found [here](#).

If you have any questions about completing the call for evidence, please contact us via feedback@ICCC.mfe.govt.nz. Please include a contact number in case we need to talk to you about your query.

Please email your completed form by **12 noon, Friday 15 November 2019** to feedback@ICCC.mfe.govt.nz. We may follow up for more detail where appropriate.

Contact details

Name and/or organisation	New Zealand Forest Research Institute LTD trading as Scion
Postal Address	
Telephone number	
Email address	

Submissions on similar topics

Please indicate any other submissions you have made on relevant topics, noting the particular material or information you think we should be aware of.

We have attached a range of supporting documentation that provides evidence (or references to evidence) for the points made in this submission.

The primary document is Scion's submission to the Productivity Commission's Low Emissions inquiry. Most of that submission is relevant to the ICCC's work. It contains chapters on land use, transport, industrial energy and process heat and the built environment that are particularly relevant.

As additional supporting evidence we have included:

- Four reports on bioenergy (solid and liquid fuels)

- Biofuels Roadmap
- New Zealand solid fuels market analysis
- Residual biomass fuel projections for New Zealand - Indicative availability by region and source
- Mapping of primary industrial processing heat demand and forestry resources to allow identification of Wood Energy Industrial Symbiosis opportunities
- Additional references on land use change (in addition to those contained in the submission to the Productivity Commission
- WBCSD - CEO-Guide-to-the-circular-bioeconomy
(<https://www.wbcsd.org/Programs/Circular-Economy/Factor-10/Resources/CEO-Guide-to-the-circular-bioeconomy>)
- Scion's 2030 strategy transitioning NZ to a circular bioeconomy: targets by 2030.
- World Scientists' Warning of a Climate Emergency published in Bioscience November 2019
- A copy of the submission jointly with the Biojet Consortium

A lot of the New Zealand specific research work around biomaterials and distributed manufacturing is still nascent with further evidence likely to be produced in the coming years. For example, Scion is currently undertaking a project developing a national plastics roadmap to guide the entire plastics sector move to a new plastics economy based on the circular bioeconomy model. The roadmap will be following the footsteps of The Ellen MacArthur Foundation by developing a New Zealand strategy and recommendations towards a 'New Plastics Economy' incorporating our country's specific challenges and opportunities. This is funded by MfE's Waste Minimisation Fund.

We also refer the Commission to the about-to-be released "Rethink Plastics" documentation which includes LCA analysis and targets and recommendations for the NZ Govt. (Dept Primer Ministers Office: Chief Science Advisor: Prof Juliet Gerrard)

Providing more detail on the evidence around biomaterial the opportunities for New Zealand around biomaterials and distributed manufacturing might best be done at this stage through interviews with experts rather than reference to published reports.

We are also happy to help source the references referred to in our attachments if that would be helpful to the ICCC.

Commercially sensitive information

Do you have any objection to the release of any information contained in your response, including commercially sensitive information?

If yes, which part(s) do you consider should be withheld, together with the reason(s) for withholding this information.

No objection.

Questions for consideration:

Section A The first three emissions budgets

Under the proposed Zero Carbon Bill, the proposed Commission will have to provide advice to government on the levels of emissions budgets over the coming decades.

Currently, the Zero Carbon Bill requires budgets to be set from 2022-2035 (three separate budgets covering 2022-2025, 2026-2030, and 2031-2035). When preparing this advice the proposed Commission will have to consider the implications of those budgets for meeting the 2050 target. The Commission will also need to consider the likely economic effects (positive and negative) of its advice.

Question 1:

In your area of expertise or experience, what are the specific proven and emerging options to reduce emissions to 2035? What are the likely costs, benefits and wider impacts of these options? Please provide evidence and/or data to support your assessment.

Options to reduce gross emissions to 2035 (see additional documentation):

1. Increasing use of solid bioenergy for industrial purposes
2. Increased use of liquid biofuels and other sustainable fuels (hydrogen and renewable electricity) coupled with vehicle fleet emissions restrictions, renewing of fleet, electric vehicles. Development of manufacturing of marine and biojet biofuels for transport systems in and out and around New Zealand. Marine transport handles ~80% of NZ import/export trade, and is required to improve emissions according to the IMO from 2020.
3. Substitution of concrete and metals in the built environment with wood to embed carbon.
4. Usage of waste and embedding plastic and waste carbon in new products.

Options to reduce net emissions to 2035:

1. Increased Afforestation – both commercial plantation or cropping and urban forests and permanent forests

Question 2:

In your areas of expertise or experience, what actions or interventions may be required by 2035 to prepare for meeting the 2050 target set out in the Bill? Please provide evidence and/or data to support your assessment.

Answer:

1. Afforestation: Depends on accounting method used for the target, but plantations planted before 2035 won't contribute to emissions reductions by 2050 under averaging accounting approach. Indigenous forest regeneration will contribute, but at a low level. Initiation of urban forests including embedding in new builds and redesign of urban environments. Planting after 2035 likely to have to be fast-growing plantations to have any impact – need much wider understanding of the environmental services provided by different types of forests. Include options for very short rotation cropping forests (~5 years) as feedstock for biorefineries.
2. Increased research into production of bioplastics, biochemicals and bio-based packaging as substitutes for fossil-fuel based counterparts in New Zealand manufacturing
3. Increased research into distributed manufacturing techniques and options to manufacture products and convert biomass close to source at smaller industrial scales. This has potential to provide regional development and reduce transport emissions of moving large bulk materials to more centralised processing facilities or for export.

Question 3:

In your areas of expertise or experience, what potential is there for changes in consumer, individual or household behaviour to deliver emissions reductions to 2035? Please provide evidence and/or data to support your assessment.

Answer:

1. *Land-use change and integration of land uses:* Extensive grazing is an inefficient way of converting the sun's energy into food and has significant adverse environmental impacts. Many farmers have successfully integrated trees into their farming operations but others resist for various reasons [refs – rural decision-makers literature]. There is certainly scope for farming individuals/households to reduce net emissions by increasing tree planting on their land. This could include short rotation cropping forests.
2. *Increasing use of wood:* There is scope for urban consumers/individuals/households to increase demand for wood products (and reduce demand for more environmentally-damaging products). The biggest

potential lies in moving to greater use of wood in structural applications for medium- to high-rise residential and most types of commercial buildings.

3. *Recycle/reuse urban waste through redesign of waste water systems:* eg use of anaerobic digestion and/or hydrothermal processing or fast pyrolysis to jointly process plastics and food waste together. Design of circular cities, redesign of urban environments.

Question 4:

When advising on the first three emissions budgets and how to achieve the 2050 target, what do you think the proposed Commission should take into account when considering the balance between reducing greenhouse gas emissions and removing carbon dioxide from the atmosphere (including via forestry)?

Answer: Urban redesign and circular cities and communities, and legislative change supporting this. NZ is 87% urban living, 0.4% of land is urban but GDP driven by urban areas; this is predicted to increase in the next 30 years.

Question 5:

What circumstances and/or reasons do you think would justify permitting the use of offshore mitigation for meeting each of the first three emissions budgets? And if so, how could the proposed Commission determine an appropriate limit on their use?

Answer:

Section B Emissions reduction policies and interventions

The proposed Commission will also need to consider the types of policies required to achieve the budgets it proposes. This consideration should include:

- sector-specific policies (for example in transport or industrial heat) to reduce emissions and increase removals, and
- the interactions between sectors and the capability of those sectors to adapt to the effects of climate change.

Question 6:

What sector-specific policies do you think the proposed Commission should consider to help meet the first emissions budgets from 2022-35? What evidence is there to suggest they would be effective?

Answer:

1. **Incentivise planting trees on farms.**
2. **Incentivise domestic wood products** - domestic processing of longer-lived products for both domestic consumption and export.
3. **Incentivise afforestation and wood to energy**
4. **Incentivise cropping forests and development of biorefineries**
5. **Incentivise a nationally integrated plastics and waste management system.**

Question 7:

What cross-sector policies do you think the proposed Commission should consider to help meet the first emissions budgets from 2022-35? What evidence is there to suggest they would be effective?

Answer:

1. Integrated land-use and primary sector policies
2. Industry transformation policies that focus on innovation in greater use of biomass and bio-based alternatives to fossil-fuel based materials and distributed manufacturing
3. An overarching circular bioeconomy policy coupled with research and implementation programmes
4. Ensure urban redesign is a sector, and ensure incorporation of urban forestry as well.
5. Ensure a national manufacturing strategy and export/tourism set of targets with climate change requirements.
6. Align with global initiatives
7. Ensure the RMA review is effective and all-encompassing requiring national actions that result in climate change mitigation and adaptation.

Question 8:

What policies (sector-specific or cross-sector) do you think are needed now to prepare for meeting budgets beyond 2035? What evidence supports your answer?

Answer:

1. Same as Question 7

Section C Impacts of emissions budgets

The proposed Commission will need to consider the potential social, cultural, economic and environmental impacts of emission budgets on New Zealanders, including how any impacts may fall across regions and communities, and from generation to generation. Potential impacts may be either positive or negative.

Question 9:

What evidence do you think the proposed Commission should draw upon to assess the impacts of emissions budgets?

Answer: Access international analyses and adapt to NZ (eg FAO, OECD, EU, Japan, Australia)

Question 10:

What policies do you think the proposed Commission should consider to manage any impacts of meeting emissions budgets? Please provide evidence and/or data to support your assessment.

Answer:

1. Greater focus on regional economic development, including through distributed manufacturing to allow economic diversification of those regions to low-emissions jobs and industries

Section D Other considerations, evidence or experience**Question 11:**

Do you have any further evidence which you believe would support the future Commission's work on emissions budgets and emissions reduction policies and interventions?

Answer:

One of the best approaches New Zealand could take to reducing emissions would be to adopt a circular bioeconomy approach. This will entail policies across the economy. A good starting point would be to formally initiate a government work programme on circular bioeconomy (which draws together and coordinates all of the work government is currently doing on circular bioeconomy) and ensure there is adequate provision for research and science to support New Zealand's transition to a circular bioeconomy.

We recommend the ICCC investigate more about circular bioeconomy approaches. The World Business Council for Sustainable Development's CEO's guide to the Circular Bioeconomy is a good starting point. (<https://www.wbcsd.org/Programs/Circular-Economy/Factor-10/Resources/CEO-Guide-to-the-circular-bioeconomy>)

Transitioning to a circular bioeconomy is the central theme of Scion 2030 Strategy (see attached document).

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