**Call for evidence**

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 Bill[[1]](#footnote-1). 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](https://www.iccc.mfe.govt.nz/assets/PDF_Library/57c3716753/AMENDED-Terms-of-Reference-for-the-Interim-Climate-Change-Committee-May-Dec-2019.pdf). This work is also outlined in our letter to the Minister for Climate Change on 7 May 2019 [here](https://www.iccc.mfe.govt.nz/our-news/updates-from-the-chair/iccc-work-programme-from-1-may-2019/).

**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.

**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](http://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.

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**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](http://www.legislation.govt.nz/bill/government/2019/0136/latest/LMS183736.html).

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**

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| *Name and/or organisation* | *Ivan M. Johnstone PhD**Member of Seniors Climate Action Network (SCAN)**https://www.facebook.com/groups/964056880274284/**Author of www.insearchofsteadystate.org* |
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| *Telephone number* | *(03) 4884602* |
| *Email address* | *Ivan.johnstone@ivanjohnstone.com* |

**Submissions on similar topics**

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| *Please indicate any other submissions you have made on relevant topics, noting the particular material or information you think we should be aware of.*  |
| *Answer:* New Zealand Productivity Commission Report:  *Low-emission economy NZ* 1. I recommended that New Zealand adopts a Hybrid Emissions Pricing Scheme with a cap on emissions and a minimum cap on carbon pricing with full Government control over the auction process.
2. I recommended that the Final Report addresses issues of peak oil and allied contingency planning.
3. I recommended that Government invests revenue generated by an adopted Emissions Pricing Scheme in renewable energy projects.
4. I recommended that Government electrifies the city-to-city New Zealand railway network.
5. I recommended that Government carries out a study of the impact of the Tiwai Point aluminium smelter continuing its current consumption of electricity when additional electricity will be needed by electric vehicles and electrification of a city-to-city New Zealand railway network.

Ministry for the Environment: *Zero Carbon Bill*, Reference Number 53021. I recommended adding Climate Change Commissioners who have the following expertise: An Ecological Economist with experience in dynamic stock-flow modelling of material and energy flows through an economy. A Monetary Economist with experience in the banking sector and use of dynamic stock-flow monetary modelling using Minsky which makes use of double entry book-keeping Godley Tables.
2. I recommended the Carbon Bill should include the requirement that climate change targets and policies are set and changed only when there is a 75% of all Members of Parliament endorsement vote to ensure stability of political purpose and cross-party representation.
3. I advocated that all countries, including New Zealand, need to reduce GHG emissions as soon as possible in order to reduce the risk of runaway methane emissions from thawing tundra. Most methods of reducing GHG emissions take time, including planting saplings to absorb carbon dioxide while, in the meantime, continued methane emissions by ruminants in New Zealand form a major proportion of New Zealand’s greenhouse gas emissions. A 10% reduction in methane emissions could be implemented within weeks by Government decree to reduce herd numbers. Farmers around the world have been paid not to grow crops. New Zealand can and should likewise pay its farmers to reduce their herds of ruminants and assist transition to alternative food production.
4. I pointed out that the economic models developed by Vivid Economics (Vivid) and the New Zealand Institute of Economic Research (NZIER) to gain insights into the economy-wide impacts of reaching different emissions reductions targets are both seriously flawed because their models are based on projections of GDP which is not an indicator of wellbeing nor an indicator of progress towards sustainable development.

Dunedin City Council 10 Year Plan1. I recommended initiation of a transition of Dunedin’s urban form with 100 km of safe bikeways and pedestrian zones and served by public transport as described in the *Peak Oil Vulnerability: Assessment for Dunedin Report* prepared by Dr Susan Krumdieck.
2. I recommended initiation of an electric trolley bus system using efficient modern technology made in New Zealand as described in the *Peak Oil Vulnerability: Assessment for Dunedin Report* prepared by Dr Susan Krumdieck
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**Commercially sensitive information**

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| *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.* |
| *Answer: NO* |

**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.

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| *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.* |
| *Answer: No reply* |

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| *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:* If the Emission Trading Scheme (ETS) should fail to meet greenhouse gas emission targets by 2035 or earlier targets, then a more efficient carbon tax on fossil fuel energy should be implemented (Nordhaus, 2007; Pearse & Bohm, 2014). The carbon tax should ramp up to a level as recommended in United Nations publications. Carbon taxes are more acceptable to the public if the revenue is invested for the public good (Klenert et al., 2018). Carbon tax revenue could be invested in electric public transport and electrification of the national railway network. Sources:Klenert, D., L. Mattauch, E. Combet, O. Edenhofer, C. Hepburn, R. Rafaty, and N. Stern. ‘Making Carbon Pricing Work for Citizens’, *Nature Climate Change*, vol. 8, pp. 669-677, 2018:<https://www.nature.com/articles/s41558-018-0201-2>Nordhaus, W. ‘To Tax or Not to Tax: Alternative Approaches to Slowing Global Warming’, *Review of* <https://www.researchgate.net/publication/253300606_To_Tax_or_Not_to_Tax_Alternative_Approaches_to_Slowing_Global_Warming>Pearse, R. and S. Bohm. ‘Ten Reasons Why Carbon Markets Will Not Bring About Radical Emissions Reductions’, *Carbon Management*, 2014, 13 pp:<https://www.researchgate.net/publication/272786779_Ten_reasons_why_carbon_markets_will_not_bring_about_radical_emissions_reduction> |
| *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:* There is great potential for changes in consumer, individual or household behaviour to deliver emissions reductions before and beyond 2035. To realise this potential, the general public needs education as to why they need to take action at a personal level to reduce greenhouse gas emissions and the most effective ways they can do so. Educational publications and government recommendations frequently miss the most effective individual actions (Wynes and Nicholas, 2017). The book by Berners-Lee (2010) is one example of a comprehensive publication that compares the carbon footprints of household purchases and activities. Research by Sköld et al. (2018) on four European cities has found that the greater the greenhouse gas reduction potential of a mitigation action, the less willing a household was to implement that action. Sköld et al. (2018) concluded that “policies need to specifically focus at making households—by means of facilitating collective actions—reduce their consumption volume of private flights, car usage, and meat consumption in order to reach EUs 1.5, and 2 C-target, while at the same time keep supporting households with policies that increases incentives to improve the efficiency of their everyday consumption.”The ICCC should recommend to government that resources are required for education and promotion of the most effective ways that individuals and households can reduce their greenhouse gas emissions. Sources:Berners-Lee, M. *How Bad Are Bananas: The Carbon Footprint of Everything.* London, Profile Books, 2010, 233 pp. Sköld, B., M. Baltruszewicz, C. Aall, C. Andersson, A. Herrmann, D. Amelung, C. Barbier, M. Nilsson, S. Bruyère, and R. Sauerborn. ‘Household Preferences to Reduce Their Greenhouse Gas Footprint: A Comparative Study from Four European Cities’, *Sustainability*, 10(11):4044, 2018: <https://www.researchgate.net/publication/328752113_Household_Preferences_to_Reduce_Their_Greenhouse_Gas_Footprint_A_Comparative_Study_from_Four_European_Cities>Wynes, S. and K.A. Nicholas. ‘The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions’, *Environmental Research Letters*, vol. 12, No. 7, 2017: <https://iopscience.iop.org/article/10.1088/1748-9326/aa7541> |

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| *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: No reply* |

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| *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:* Recommendation: Use of offshore mitigation for meeting each of the first three emission budgets should not be permitted under any pretext. Basis of recommendation: A 2018 IPCC report states on page 262: “Widespread thawing of permafrost potentially makes a large carbon store (estimated to be twice the size of the atmospheric store; Dolman et al., 2010) vulnerable to decomposition, which could lead to further increases in atmospheric carbon dioxide and methane and hence to further global warming. This feedback loop between warming and the release of greenhouse gas from thawing tundra represents a potential tipping point.”Runaway methane emissions from tundra constitutes an existential threat. The risk of runaway methane emissions from thawing tundra needs to be ameliorated as quickly as possible by all countries, especially developed countries, by reducing their own greenhouse gas emissions without resorting to offshore mitigation to meet their targets. Use of offshore mitigation between nations slows down the potential rate of reductions in greenhouse gas emissions and increases the risk of reaching tipping points. A large proportion of New Zealand’s trade economy is based on food exports (Stats NZ website) and there are many countries which are reliant on food imports (index mundi website). This reliance is unlikely to change regardless of changes in the food products that New Zealand exports. Substantial reductions in global greenhouse gases can and should be made by a global reduction in meat consumption (IPCC, 2019). There are alternative sources of protein other than ruminant based meat. New Zealand should transition to alternative food production and agricultural practices such as permaculture which does not rely on fossil fuel based fertilisers. The need for New Zealand to protect its agricultural sector which currently generates almost 50% of our greenhouse gas emissions is not a legitimate argument or excuse to permit use of offshore mitigation. Mitigation of greenhouse gas emissions requires a transition away from previous and current business practices and consumption patterns. Sources: Index mundi website: <https://www.indexmundi.com> IPCC. *SR15 Chapter 3: Impacts of 1.5°C of Global Warming on Natural and Human Systems,* 2018:<https://www.ipcc.ch/sr15/chapter/chapter-3/> IPCC. *Climate Change and Land,* 2019: <https://www.ipcc.ch/report/srccl/>See *The Guardian* newspaper 4 August 2019 for a simplified summary: <https://www.theguardian.com/environment/2019/aug/03/ipcc-land-use-food-production-key-to-climate-crisis-leaked-report>Stats NZ website: <https://www.stats.govt.nz/topics/economy> |

**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.

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| *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: No reply* |

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| *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: No reply* |

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| *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: No reply* |

**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.

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| *Question 9:* *What evidence do you think the proposed Commission should draw upon to assess the impacts of emissions budgets?*  |
| *Answer:* Recommended Evidence: Evidence of the impact of emission budgets should be based on Indicators of Wellbeing and not GDP. Basis of Recommended Evidence: GDP is a measure of economic activity, both good and bad, does not measure negative externalities, and is not a measure of wellbeing. Increases in the rate of growth of GDP is not a true measure of progress or development because increases in GDP per capita in the developed countries such as New Zealand do not necessarily result in greater wellbeing. There are many countries with substantially lower GDP per capita which enjoy similar and even greater levels of wellbeing than much richer countries due to diminishing returns with increasing real GDP per capita (Costanza et al., 2009). Beyond a certain income level, happiness does not increase significantly, or necessarily at all, with additional income. Higher levels of energy use per capita which accompany higher levels of GDP do not necessarily result in a higher Human Development Index (Lambert et al., 2014). There are well-established indicators of wellbeing that can and should be used to measure true progress instead of GDP (United Nations, 2007). Sources:Costanza, R., M. Hart, S. Posner, and J. Talberth. ‘Beyond GDP: New Measures of Progress’, The Pardee Papers No. 4, 2009, 46 pp.:<https://www.researchgate.net/publication/241454355_Beyond_GDP_The_Need_for_New_Measures_of_Progress> Lambert, J.G., C.A.S. Hall, S. Balogh, A. Gupta, and M. Arnold. ‘Energy, EROI, and Quality of Life’, Energy Policy vol. 64, 2014, pp. 153-167: <https://www.semanticscholar.org/paper/Energy%2C-EROI-and-quality-of-life-Lambert-Hall/09522fe373ba57a798e5c511e9df5e7568876fa1> United Nations. *Indicators of Sustainable Development: Guidelines and Methodologies*. New York, United Nations, 2007, 99 pp: <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=107&menu=1515> |

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| *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:* Policy #1: All current permits for offshore drilling for oil and gas should be immediately rescinded. In order to avoid an existential threat to humankind, the vast bulk of existing fossil fuel reserves needs to be kept in the ground. Globally, we already have more than sufficient proven fossil fuels reserves to eliminate the Antarctic ice sheet with a resulting 58 metre global sea-level rise (Winkelmann et al., 2015). Globally, a third of oil reserves, half of gas reserves and over 80 % of current coal reserves should remain unused from 2010 to 2050 in order to meet the IPCC target of 2 °C (McGlade & Ekins, 2015). Within the context of mitigation of climate change, new offshore drilling for oil and gas unnecessarily increases the risk of environmental damage. Investment in exploration for new fossil fuels sources should be diverted to development of renewable energy infrastructure. Policy #2: Licenses to import fossil-fuel based vehicles should be limited and be subject to public auction bid over a transition period culminating in a total ban. In 2017 petroleum and diesel cars generated 11.6% of New Zealand’s gross greenhouse gas emissions (NZ Emissions Tracker website). Continued additions to fleets of fossil-fuel based vehicles needs to be discouraged and ultimately banned in order to ensure reductions in greenhouse gas emissions. Policy #3: Low-speed 30 kph limits should be mandatory alongside primary cycleway networks within city boundaries where physical separation of bicycles and cars is economically prohibitive. Bicycles and low-speed electric scooters etc. are among the most effective private transport methods of reducing greenhouse gas emissions (Berners-Lee, 2010, p. 105; truecostblog.com website). Cycling as an alternative to using a car should be encouraged and facilitated, but a fear of cycling unprotected within one metre from much higher-speed vehicles discourages potential cyclists. This applies especially to older potential cyclists who no longer feel bullet-proof. Policy #4: Food imported from overseas which New Zealand currently grows should be immediately subject to import duties. Transportation of food is an essential component of any food chain and the food miles involved in the transportation of food can comprise a substantial portion of the carbon footprint of food (Konieczny et al., 2013). Locally grown food has a smaller carbon footprint than the same imported food and avoids unnecessary emissions of greenhouse gases. Sources:Berners-Lee, M. *How Bad Are Bananas: The Carbon Footprint of Everything.* London, Profile Books, 2010, 233 pp. Konieczny, P., R. Dobrucka, and E, Mroczek. ‘Using Carbon Footprint to Evaluate Environmental Issues of Food Transportation’, *LogForum*, vol, 9 (1), pp. 3-10:<https://www.researchgate.net/publication/303203352_Using_carbon_footprint_to_evaluate_environmental_issues_of_food_transportation>McGlade, C. and P. Ekins. ‘The geographical distribution of fossil fuels unused when limiting global warming to 2° C’, *Nature*, 2015: <https://www.nature.com/articles/nature14016>New Zealand’s Interactive Emissions Tracker website: <https://emissionstracker.mfe.govt.nz/#NrAMBoEYF12TwCIByBTALo2wBM4eiQDs2AHEltEA>truecostblog.com website: <https://truecostblog.com/2010/05/27/fuel-efficiency-modes-of-transportation-ranked-by-mpg/> (Comment: Bases of calculations are provided but some source links have changed) Winkelmann, R., A. Levermann, A. Ridgwell, and K. Caldeira. ‘Combustion of available fossil fuel resources sufficient to eliminate the Antarctic Ice Sheet’, *Science Advances*, vol. 1, e1500589, 2015:<https://advances.sciencemag.org/content/1/8/e1500589/tab-pdf> |

**Section D Other considerations, evidence or experience**

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| *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:* National policies to mitigate the impact of climate change need to take into account the connection between peaking of fossil fuels and climate change. Regional councils have already done so. An example is the Sunshine Coast Regional Council, Australia, which has published the study titled ‘Peak Oil Background study: Climate Change and Peak Oil Study Strategy 2010-2020’. SourcesSunshine Coast Regional Council. *Peak Oil Background study: Climate Change and Peak Oil Study Strategy 2010-2020*, Sunshine Coast Regional Council, 78 pp. <https://www.nccarf.edu.au/localgov/sites/nccarf.edu.au.localgov/files/casestudies/pdf/Sunshine%20Coast_CC%20%26%20Peak%20Oil_Stratagy.pdf> |

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1. Climate Change Response (Zero Carbon) Amendment Bill: <http://www.legislation.govt.nz/bill/government/2019/0136/latest/LMS183736.html>. [↑](#footnote-ref-1)