He Pou a Rangi
Climate Change Commission

Ref: 2023-007

[redacted]

26 April 2023

Tēnā koe [redacted]

Thank you for your email of 24 March 2023 requesting "*evidence that supports* [the Climate Change Commission's] *findings*" in relation to the following topics:

Global Reality

1. *What percentage of all global emissions does New Zealand contribute? (This is important in establishing a realistic perspective)*
2. *If we cut our emissions by 25 percent, what difference does this make to the global total?*
3. *What effect will this have on ice cap melting and sea level rise? Please provide empirical evidence, that can be verified by an independent scientist, and supporting of your findings.*

Political

4. *Are you supporting the UN Agenda's 21 and 2030 in the work you do?*
5. *Are you directly, or indirectly, influenced by the International Committee on Local Environmental Initiatives (ICLEI), or any other institution controlled by the Committee of 300?*
6. *If you are supporting UN Agenda's 21 and 2030, please provide evidence of a referendum where the people voted, in full knowledge of the implications of the said agenda's, in favour of supporting them. (I ask this as the climate subject is polarizing and I am trying to make sense of the reality or falsity of it all)*

Co2 Emissions

7. *How many parts per million of Co2 are required before there is risk to humanity through inhalation, and plants through inhibiting their growth, or however else too much Co2 will affect plants?*
8. *Is the current Co2 levels in New Zealand approximately 410 ppm?*
9. *Can you please provide evidence showing the Co2 trend across New Zealand for the past 150 years?*
10. *Can you also please also provide evidence proving how the recommendations you make, with all of the current levels of global emissions, and most importantly New Zealand's contribution, will make the difference and there will be a cessation of global warming?*

Methane

11. *Does methane only last 12 years in the environment?*

12. *You mention agriculture emissions. Are these specifically animal emissions?*
13. *Why do you target agriculture emissions?*
14. *How are these emissions measured accurately and your findings can be supported by an independent, to the Climate Commission, investigator?*
15. *Why are animal emissions regarded as serious when there were three times as many sheep and many more cattle and pigs in past years, yet there was never a problem and Co2 and Methane levels did not rise?*

Our response

It is important to note that in order for the Official Information Act 1982 (the Act) to apply to a request, the information sought must be held by the Commission. There is a distinction between:

- questions which can be answered by providing information already known to and held by the Commission (official information), and
- questions which require the Commission to form an opinion or provide an explanation and so create new information to answer the request (not official information).

Due to the nature of your correspondence only some parts were considered in accordance with the Act. The information requested in these parts is already publicly available, and we have provided you with links to this information below. This decision is made under section 18(d) of the Act.

The Climate Change Commission and the Climate Change Response Act 2002

The Commission is an Independent Crown Entity. This means we exist separately from government policy. Our independence enables us to provide the government of the day with impartial and evidence-based advice on matters relating to Climate Change in Aotearoa New Zealand. We are administered by the Climate Change Response Act 2002 (CCRA). The Commission was established by an amendment to the CCRA, called the Climate Change Response (Zero Carbon) Amendment Act 2019, which is available here: www.legislation.govt.nz/act/public/2019/0061/latest/LMS183736.html

For clarity, the Ministry for the Environment (MfE) is the Government's primary adviser on environmental matters. It also holds a stewardship role which involves taking a long-term perspective on environmental issues. This includes overseeing Aotearoa New Zealand's transition to a climate-resilient, low-emission and circular economy. As such, the MfE has ultimate responsibility for issues within the Government's environment portfolio.

Questions about the United Nations

Aotearoa New Zealand is a Party to the United Nations (UN) Framework Convention on Climate Change and one of the CCRA's key purposes is to "enable New Zealand to meet its international obligations under the Convention, the Protocol, and the Paris Agreement".

Section 5M of the CCRA outlines matters the Commission must consider when performing its functions and duties and exercising its powers under the CCRA. One of those matters is the "responses to climate change taken or planned by parties to the Paris Agreement or to the Convention". As such, the Commission is obligated by legislation to consider the above UN agreements in any piece of advice we deliver to government.

Detailed information on Aotearoa New Zealand's commitment to the UN agreements can be found on the MfE's website: https://environment.govt.nz/what-government-is-doing/international-action/nz-united-nations-framework-convention-climate-change/

Section 5N of the CCRA also requires the Commission to undertake consultation in the formation of its advice to Government. This means that while we do consult the general public and local organisations

(including councils) as part of the Commission's evidence gathering and engagement pieces of work, we have not directly worked with the International Committee on Local Environmental Initiatives (ICLEI) in the past. Any consultation that we undertake with organisations (whether international, national, or local) can only be done so in relation to our core work programme or related independent advice, as set out in the CCRA.

Questions about global emissions and Aotearoa New Zealand

Aotearoa New Zealand's emission reduction goals are shaped by the commitments made to international and domestic emission targets, as outlined in the CCRA.

The MfE is responsible for what these targets are and how they are reported on. It is also MfE's responsibility to measure greenhouse gas emissions, including emissions from agriculture. The MfE's annual inventory of greenhouse gases is publicly available on their website: https://environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-1990-2020/

The percentage contribution that emissions from Aotearoa New Zealand make to global emissions and their impacts depends on the reductions in greenhouse gases that occur here and elsewhere. Aotearoa New Zealand is one small player on an international stage, and it takes everybody doing their part to ensure people are not further impacting on the changing climate.

Information on estimates of future sea level rise and ice sheet melt is also publicly available and can be found in Chapter 9 of the Intergovernmental Panel on Climate Change (IPCC) publication *IPCC Sixth Assessment Report (AR6) Working Group 1 Report*.

Questions about agricultural emissions and methane

Our definition of agricultural emissions means emissions from the agriculture sector. This includes biogenic methane from livestock and nitrous oxide from animal excreta and synthetic nitrogen fertiliser use. Agriculture accounts for 91% of biogenic methane emissions in Aotearoa New Zealand, and 19% of non-biogenic methane greenhouse gases. Information on the warming effect of biogenic methane and its breakdown in the atmosphere can be found online.

The Commission's advice *Ināia tonu nei: a low emissions future for Aotearoa* provides information on the science of climate change. Page 14 of Chapter 1 of the Supporting Evidence behind this advice provides information on methane's intense warming effect for the first few decades after it is emitted and shows how this effect dissipates as the methane breaks down in the atmosphere. Due to the heat trapping ability of different greenhouse gases and the time they stay in the atmosphere, emitting the same amount of methane and carbon dioxide, for example, would have very different impacts on the climate over time.

The IPCC provides calculations on the lifetime of methane which can be found in section 6.3.1 on page 836 of their report *IPCC Sixth Assessment Report (AR6) Working Group 1 Report*.

Additionally, the Parliamentary Commissioner for the Environment's report *How much forestry would be needed to offset warming from agricultural methane?* states:

> *"In most industrialised countries, the current contribution to warming from the use of fossil fuels in the energy, transport and industry sectors is larger than the contribution from the agriculture sector. New Zealand is different. The current contribution to warming from New Zealand's livestock methane emissions to date is significantly greater than the warming contribution from all of the fossil carbon dioxide emitted since 1850."*

Figure 7, on page 14 on that report, visually demonstrates the warming that livestock has caused, and that it is still continuing to rise.

Nearly half of Aotearoa New Zealand's greenhouse gas emissions come from agriculture. Our uniquely strong agricultural sector is why reducing agricultural emissions is an especially important goal for us as a country to focus on. More information about the importance of reducing agricultural emissions can be found on the MfE's website: https://environment.govt.nz/facts-and-science/climate-change/agriculture-emissions-climate-change/

The Commission was tasked with independently assessing the progress the agriculture sector has made in preparing for pricing agricultural emissions and identifying what further preparatory work is necessary. The Agricultural Progress Assessment report was provided to Ministers in June 2022. We are also required to give advice to government on emissions budgets and emission reduction plans, which include emissions from agriculture. These tasks are governed by the CCRA.

Questions about carbon dioxide emissions

Information on the impacts of carbon dioxide emissions is available on the IPCC website. The following reports provide helpful information: Climate Change and Land and Human Health: Impacts, Adaptation and Co-Benefits

Information on carbon dioxide levels in Aotearoa New Zealand can be found on the National Institute of Water and Atmospheric Research (NIWA) website. NIWA reports daily on carbon dioxide measurements from their atmospheric monitoring station at Baring Head: https://niwa.co.nz/climate/research-projects/carbonwatchnz/dailyco2measurements

The New Zealand Agricultural Greenhouse Gas Research Centre's note on scientific and technical issues related to the Zero Carbon Bill Scientific aspects of New Zealand's 2050 emission targets provides information on warming resulting from emissions of fossil carbon dioxide, nitrous oxide, and biogenic methane since 1850 (Figure 3, page 9).

When it comes to measuring the impact Aotearoa New Zealand will have on a global scale when reducing its own emissions, it is difficult to quantify. As outlined above, Aotearoa New Zealand is committed to international agreements with the UN, which places an obligation on us as a country to align our emission reductions with those set and agreed upon in international accords, so that our combined efforts are going to reach global goals of emissions reductions. Aotearoa New Zealand's first Nationally Determined Contribution (NDC1) under the Paris Agreement is explained in more detail on the MfE's website.

Thank you for writing to the Commission. Hopefully this response provides you with the evidence you were seeking

Ngā mihi

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