

# 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<sup>1</sup>. 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.

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<sup>1</sup> 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](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.



## 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](mailto: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](mailto:feedback@ICCC.mfe.govt.nz). We may follow up for more detail where appropriate.

### Contact details

<b>Name and/or organisation</b>	<i>Peter Bray</i>
<b>Postal Address</b>	<i>Golden Bay Cement</i>
<b>Telephone number</b>	
<b>Email address</b>	

### Submissions on similar topics

<b><i>Please indicate any other submissions you have made on relevant topics, noting the particular material or information you think we should be aware of.</i></b>
<b>Answer:</b>

## 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.***

**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.

#### **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: GBC has been on a path of reducing GHG emissions [CO<sub>2</sub>] for over 20 years and the recently completed Environmental Product Declaration (EPD) shows that GBC's GHG footprint is considerably less than equivalent imported products. GBC's early drive to reduce GHG emissions means that the opportunities for further reductions are limited.***

***Whilst there are emerging technologies being investigated to reduce or capture GHG emissions from cement production, these have not progressed beyond laboratory trials, small-scale pilot plants or the costs have prevented them from being adopted on an industrial scale.***

***GBC considered the feasibility of capturing CO<sub>2</sub> from the process gas stream and storing it in porous rock strata. Aside of the capital and operating cost penalties, the concept comes with considerable risk given geological factors contributing to the CO<sub>2</sub> escaping with possible outcomes not unlike the tragic consequences of the naturally occurring Lake Nyos disaster (Cameroon 21 August 1986) when a cloud of***

*CO<sub>2</sub> engulfed several villages killing hundreds of residents. See attached evaluation of the concept.*

*Proven technologies employ the use of Supplementary Cementitious Materials (either waste products from other industries or naturally occurring pozzolans) to reduce the embodied GHG's in cement. Substitution rates of SCM's in Australia (30%), UK (19%) and North America (<10%) have a direct impact on reducing GHG emissions by near to their substitution rates. However, some of the SCM's are waste products from industries that in themselves are major contributors to GHG emissions (fly-ash from coal fired electricity generation and slag from iron making). The cost of these materials has risen sharply in recent years as global cement producers compete for these limited resources. Golden Bay Cement (GBC) is currently investigating the use of naturally occurring SCM's available in NZ (volcanic pozzolans) and the capital required to make these available in blended cement products. The capital costs for processing and distribution equipment are in the tens of millions of dollars. The product costs are expected to be comparable with the current cost of bulk cement delivered to the NZ market.*

*Approximately 30% of GBC's CO<sub>2</sub> emissions are the result of fuel combustion to achieve the necessary kiln temperatures, the remainder is chemically released CO<sub>2</sub> from the decarbonisation of limestone in the cement manufacturing process. GBC has used biofuel (wood-waste) building to 30% replacement fuel for coal in the Portland plant since 2004. The reliance on coal will be further reduced when GBC commissions the waste tyre derived fuel project in 2020 as this fuel contains approximately 30% [biofuel] natural rubber. The technology does not exist to convert the cement manufacturing process to electricity as the thermal energy source.*

*GBC is also a large consumer of electricity (approximately 90 GWh/year) and the move from thermal generation of electricity to renewable electricity generation will indirectly reduce GBC's GHG emissions.*

**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: GBC believes that central and local government intervention is necessary to lead by example and encourage the uptake of low embodied GHG blended cements for a substantial proportion of the concrete and construction industries. The use of blended cements with SCM contents in Europe started in the early 1990's with substitution rates lower than 5%. These steadily rose to the levels (given above) as cement producers and consumers accepted the performance of the blended cements for a substantial proportion of the concrete industry and enabled producers to invest in the processing facilities to utilise these. A change in***

*attitudes by customers, designers, specifiers and authorities was necessary to facilitate the uptake (of blended cements) and Government agencies can take a lead in specifying and promoting the use of these products.*

*The cement industry [and the associated concrete industry] is heavily regulated by very prescriptive NZ Standards. Some aspects of these NZ Standards place constraining factors [or perceived constraining factors] on the widespread use of SCM's that for example, European Cement Standards do not constrain the use of so restrictively. Often complacency or ignorance of the alternatives is a major factor in resistance to adopt their widespread use, it is easier to stick to what we have become accustomed to when only a few short decades ago NZ led the world in using [naturally sourced] SCM blended cements driven largely by the former Ministry of Works. Government support to facilitate changes to NZ Standards would assist and accelerate the uptake of low CO<sub>2</sub> SCM blended cement options.*

**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: Blended cements containing natural pozzolan SCM's were used in NZ in the decades before the 1990's, primarily in the construction of the hydro-electric dams and the geothermal Ohaaki Power Station. However, despite the upsides of blended cement, the longer reaction times meant they fell out of favour (to the increasingly available pure cements) in a large part due to the focus on construction urgency being applied across the entire industry. Whilst the blended cements have advantages over pure cements, in most cases early set-times and early concrete-strengths set the consumer preferences to move away from blended cements. In most applications blended cements given their lower embodied GHG's offer a viable alternative that does not compromise long term concrete performance. It is largely a change in customer perceptions that is needed to encourage their uptake.***

**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: The Commission must consider the net effect of any changes and the consequences to the NZ economy, in GBC's case the construction industry and new housing builds. Forestry is one part of the solution but not the entire solution. Locking up vast tracts of real estate in permanent forests needs to be considered***

*against the loss to the economy and the cost of the land to enable this – locking up the land in permanent forests ultimately devalues the land value.*

*Shifting requirements for the supply of cementitious materials to offshore manufacturing suppliers is not a valid solution to lowering NZ GHG emissions as the net effect is incremental increases in overall GHG emissions attributable to NZ cement consumption. GBC has an independently audited EPD of 732kg CO<sub>2</sub>/tonne cement compared to that of a competitor importing with an EPD of 897kg/tonne.*

*At this point in time, traditional Portland cement and its blends with various SCMs have very few alternative building material technologies that can deliver the end use characteristics that modern concrete demands. Housing intensification will always demand such concrete technologies that require such strength and durability in building performance.*

**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: GBC believes that local reduction should be preferred to offsets. However, offshore offsets should be a recourse that is available to NZ companies where all practical reduction options have been implemented. Where locally manufactured materials must compete against imports, GHG offsets claimed by the latter may not be sufficiently transparent to provide an audit trail for an accurate comparison of the GHG footprint of the imported product, therefore any offsets permitted under the emission budgets should be from accredited schemes.***

**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:** *The Commission should consider policies that encourage and support innovation as often the R&D and capital investments required to de-risk opportunities do not encourage companies to commit resources in the first instance.*

**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:** *As an example, with support from the Waste Minimisation Fund, GBC has been able to advance the proposal to provide a solution to NZ's end-of-life tyre problem. This effectively de-risked the project to a stage where it was acceptable for the investment to proceed. Had this funding not been available GBC would not have considered advancing the project to implementation.*

**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:** *Policies that provide long-term surety are needed to support businesses making expensive investments that have long lifespans. For example, in 2008 GBC invested over \$50M in a new marine terminal at the Port of Auckland with an expected lifespan of more than 40-years. The new terminal was required as GBC was required to relocate from the facility it had occupied at Hamer St since the 1950's. Recent reports of a shift of the port from Auckland to Marsden Point and shipping no longer being welcome, gives a high degree of uncertainty over the longevity of this investment let alone the practicality of how GBC could transport 300,000 tonnes/year of cement to customers throughout the Auckland region. GBC's use of coastal shipping to distribute cement around NZ is not only economically and logistically expedient, but also environmentally beneficial.*

## **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: The Commission should draw upon the wider NZ economic community with an emphasis on infrastructure and housing projections and how any penalties would flow through to the wider community. This would involve the inclusion of industry experts with insights into the practical technologies that deliver emissions reductions within the milestone timeframes. The evidence to assess the practicality of solutions should be based on industrial scale projects that have been implemented and delivering sustainable solutions.***

**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: The Commission should consider the effects of any policies on products produced domestically compared to those entering the border. These should have their GHG credentials considered against locally manufactured materials. GBC has an independently audited Environmental Product Declaration (EPD) of 732kg CO<sub>2</sub>/tonne cement compared to that of a competitor importing with an EPD of 897kg/tonne. Given that demand [for cement] is not expected to diminish, policies that encourage a shift of production offshore would have a detrimental environmental effect by merely shifting the problem elsewhere.***

***The Commission should consider policies that encourage Government funding for or incentivise R&D investment issues to investigate innovative solutions for GHG reductions and ensure that intellectual property rights are correctly attributed.***

**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: No***

Please email your completed form to [feedback@ICCC.mfe.govt.nz](mailto:feedback@ICCC.mfe.govt.nz) by **12 noon, Friday 15 November 2019**.

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