

# A Submission on the Climate Change Response (Zero Carbon) Amendment Bill

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## 1. About me

I am a specialist in the technical, policy, and social aspects of the environmental consequences of industrial and urban development. I have 48 years of environmental management experience in various capacities, both locally and internationally, and especially in air quality management and related fields.

I am a Chartered Chemical Engineer and a Chartered Scientist. I was closely involved in early advances in environmental science and management in New Zealand in the 1970s. That involvement continues in my current work areas, including peer reviews for various agencies and appointments as an independent Commissioner for Resource Management Act hearings.

After a successful career in a significant New Zealand Government statutory role, including during the 'think big' industrial development era, I entered the international arena as the Air Quality Management Specialist, World Health Organization, based in Kuala Lumpur, Malaysia. These duties included as an adviser to the Governments of the Asia-Pacific region on various aspects of environmental management. That work has periodically continued, more recently as a consultant to the World Bank, the Asian Development Bank, Swisscontact, etc.

From 1996 to 1998 I was the foundation General Manager (CEO) of Environmental Services Australia, the commercial arm of the EPA Victoria. I attended the COP-21 climate change meeting in Paris, and I was involved in setting up a climate change centre, CCA@AIT, at the Asian Institute of Technology, Bangkok. I have been to Antarctica twice, in 2007 down the Ross Sea (from and to Bluff) and in 2017 down the Weddell Sea (from and to Argentina). Those trips were related to my work on climate change mitigation.

As an invited participant to the 2016 Symposium on Environmental Sustainability and Climate Change, I am a member of the Oxford University Round Table.

My professional affiliations include:

- Chartered Chemical Engineer
- Registered Chemical Engineer, Australia
- Chartered Scientist
- Member, Institution of Chemical Engineers, United Kingdom

- Member, Consulting Engineers Advancement Society (CEAS)
- Member, ProGroupNZ (a group of independent international development consultants)
- Member, Oxford University Round Table

This submission is made in a personal capacity, and not in respect to any of those organisations.

More information about me is available on my website (link above) and my LinkedIn profile (in which is embedded my Executive and Governance Curricula Vitae), accessible by searching 'Kevin Rolfe New Zealand'. I have more than 4,200 connections on LinkedIn.

On my website, at <http://kevinrolfeconsultingltd.co.nz/radio-interviews>, is a series of radio interviews ('The Kevin Rolfe Report') and a submission I made to the Productivity Commission on their draft report on a Low-emissions Economy. The radio interviews, inter alia, and the submission, cover technical options to address climate change mitigation, and will not be repeated here. The technical options I propose are mainly based on my international work.

## 2. The Bill: Its Necessity, Its Urgency, and Its Importance

It is generally, but unfortunately not universally, accepted that human activities are negatively impacting on the climate, producing what is called 'climate change'. Strictly speaking, the climate has over millennia changed, but the evidence is overwhelming that human activities are enhancing that climate change in a most profound way.

The evidence is clear from this chart:

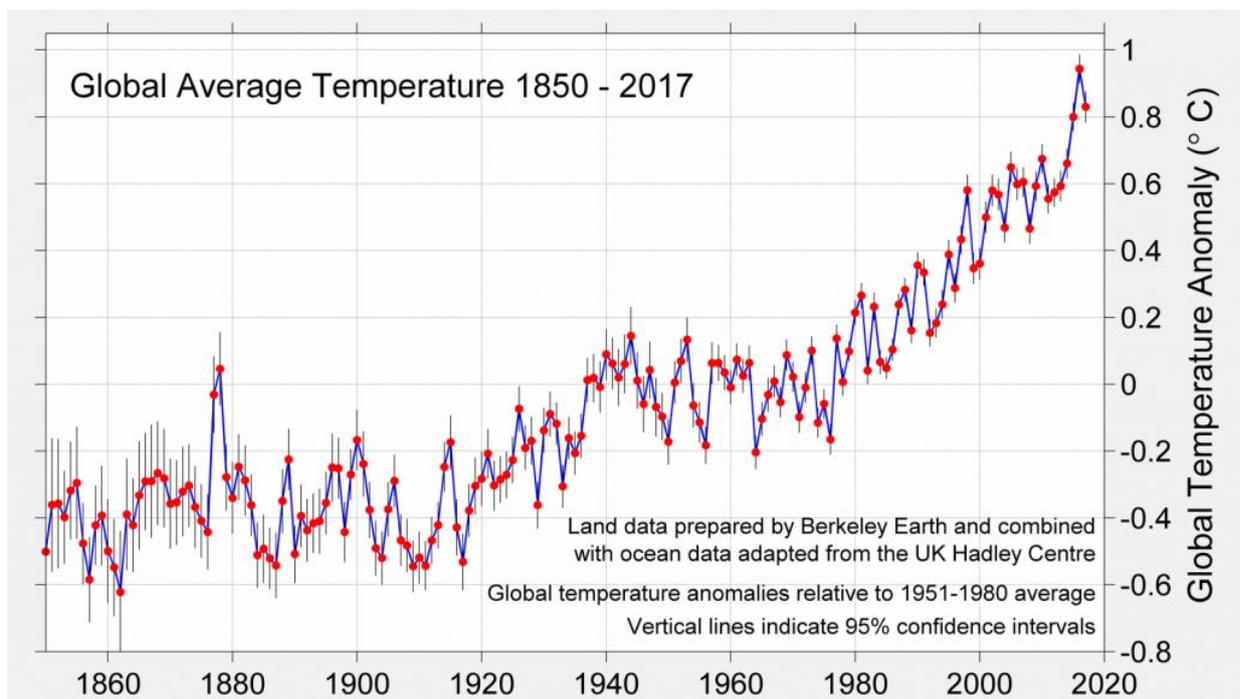


Figure 1: Global Average Temperature Anomalies, relative to 1951-1980 average

Figure 1 uses as a baseline the global average temperature in the period 1951 to 1980. This is currently a topic of debate. Reference is made in most recent documents, including the Climate Change Response (Zero Carbon) Amendment Bill, to the central aim (Article 2, paragraph 1(a)) of the Paris Agreement of the United Nations Framework Convention on Climate Change, viz:

holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels ...

But what are “pre-industrial levels”? Most researchers use the period 1850-1900. Some argue, given that James Watt patented his steam engine in 1769, that the period 1720-1800 may be a more appropriate baseline. The important point is that, irrespective of what ‘starting point’ is chosen, recent global temperatures now exceed those temperatures by at least 1.0°C.

The most recent four years, 2015 to 2018, have seen the hottest global temperatures on record, with 2016 and 2017 the warmest. 2018 was the coolest of the four, but it began with a weak La Nina event, which typically results in lower global temperatures. The average global temperature over the five-year period 2014-2018 was 1.04°C above the pre-industrial baseline (1850-1900).

The impacts of human activities on climate are much more than just a steady increase in global temperatures. Climate change is making the frequency and severity of droughts, storms, floods, and fires more severe. The impacts are worldwide, including New Zealand. Examples are the Cyclones Fehi and Gita, one-in-100 year floods in Kamo, Whanganui, and South Dunedin, and fires in Port Hills (Christchurch) and Tasman. The Ross Ice Shelf in Antarctica, which I have seen, is melting 10 times faster than expected due to the warming of the ocean. Glaciers are retreating at alarming rates.

In common, if somewhat unscientific, terminology it is stated that ‘greenhouse gases’ cause these adverse environmental effects. A more correct term is ‘climate forcers’. Known greenhouse gases, in order of importance, are water vapour, carbon dioxide, black carbon, methane, nitrous oxide, tropospheric (as distinct from stratospheric) ozone, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. Those gases all have different lifetimes in the atmosphere and global warming potentials.

The New Zealand legislation on this topic, the Climate Change Response Act 2002, defines ‘greenhouse gases’ as those gases listed in Annex A of the Kyoto Protocol (dated 11 December 1997) to the United Nations Framework Convention on Climate Change (of 9 May 1992). The Paris Agreement under that Convention (12 December 2015) reuses that definition without revision. The Climate Change Response (Zero Carbon) Amendment Bill does not propose amending that definition.

The greenhouse gases listed in the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. That is, most but not all, known greenhouse gases. Obviously, water vapour is not included, even though as the temperature of the atmosphere rises more water is evaporated from ground sources (rivers, oceans, etc.), leading to increased humidity and hence greater concentrations of water vapour in the atmosphere.

Although this discussion may appear to be somewhat academic and pedantic, it serves as a good example of the lack of scientific rigour in the drafting of the Climate Change Response (Zero Carbon) Amendment Bill. There are other examples, that will be referred to in subsequent sections of this submission. Of the greenhouse gases that are not included in the definition, there are two – black carbon and tropospheric ozone – that are also relevant to local air quality. There are strong co-benefits from addressing climate change mitigation to local air quality management, and vice versa.

On the question of the urgency of the Bill, this is best described by reference to the increasing concentrations of carbon dioxide in the atmosphere. This increase comes from human activities, mainly the combustion of fossil fuels. Figures 2 and 3 tell that story. The concentration is now approaching 420 parts per million (ppm), a level not experienced for at least the past 800,000 years. The concentration is increasing at a rate of about 2 ppm per year.

Similar consistent increases have occurred over the past few decades in concentrations of other greenhouse gases. Methane concentrations have increased from about 1,650 ppm in 1985 to more than 1,850 ppm now. Nitrous oxide concentrations have increased from about 300 ppm to more than 330 ppm over that period.

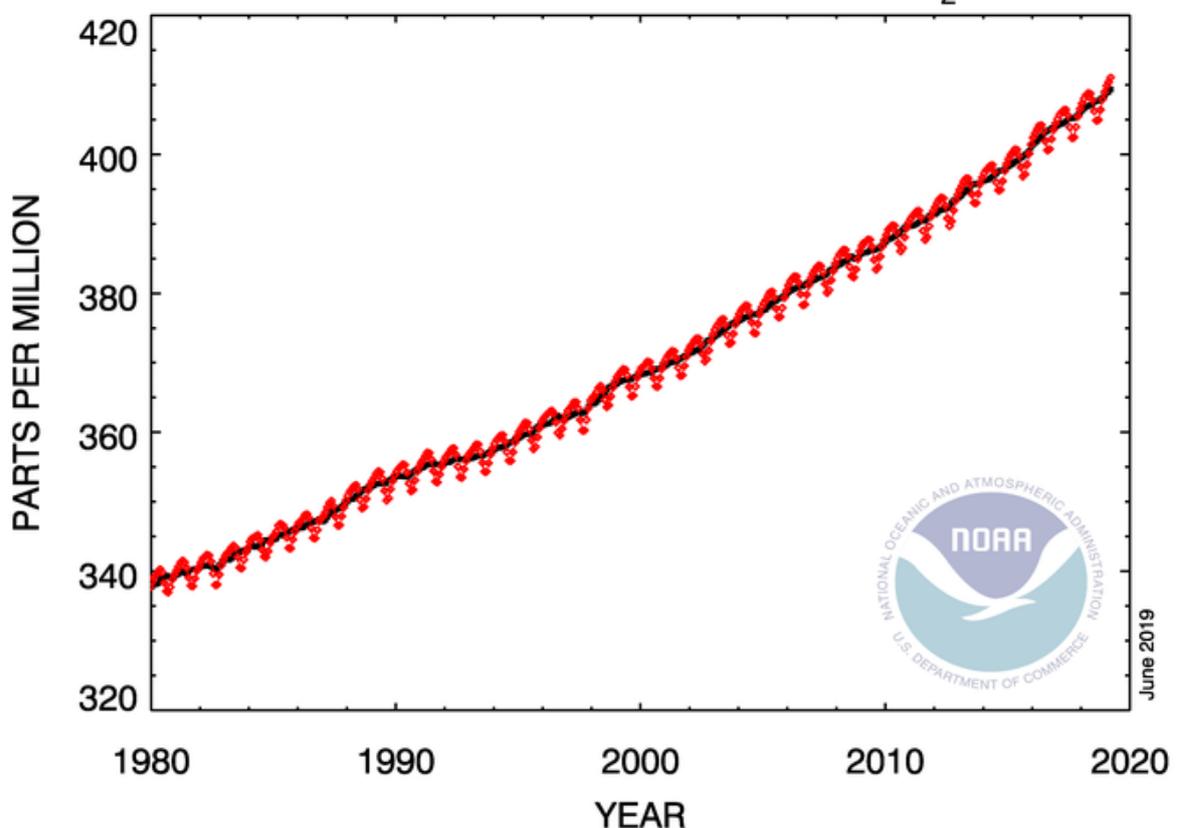


Figure 2: Global Mean Carbon Dioxide Concentrations since 1980

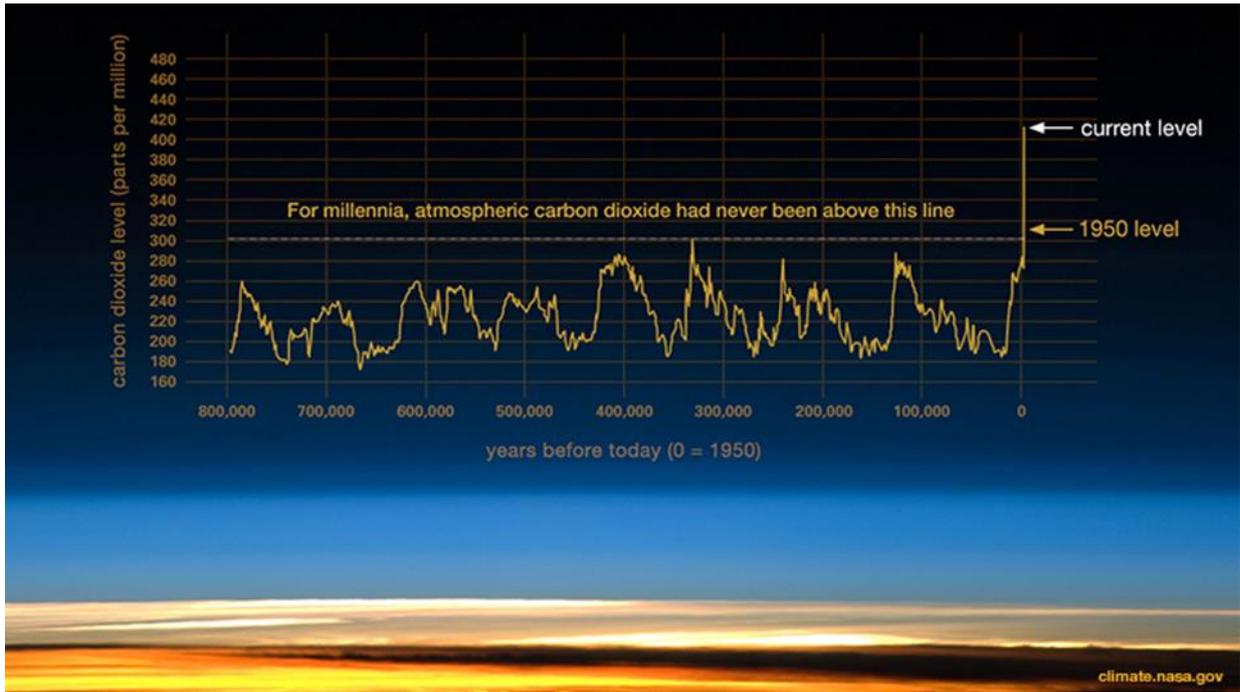


Figure 3: Historical Carbon Dioxide Concentrations

It is impossible to overstate the importance of the Bill. Jacinda Ardern, in her campaign launch speech for the 2017 General Election, referred to climate change as her “generation’s nuclear-free moment”<sup>1</sup>. More recently, around the world (including in New Zealand), a diverse group called Extinction Rebellion, using a campaign of non-violent civil disobedience, have demonstrated their anger about a lack of progress on climate change.

The youth of the world, led by a 15-year old activist Greta Thunberg of Sweden, has become strongly engaged in the climate change issue, being galvanised by the lack of progress at the COP24 Climate Change conference in Katowice, Poland, held between 2 and 15 December 2018. Since then, students have held weekly ‘School Strike for Climate’ protests (also known as ‘Fridays for Future’ or ‘Youth Strike 4 Climate’).

In New Zealand, well attended Student Strikes took place on 15 March (sadly overshadowed by the terror attacks at mosques in Christchurch that afternoon) and on 24 May. Posts on social media on the lack of progress on addressing climate change have been relentless. Figure 4 provides a depiction of that frustration.

Another recent development has been the declaration of Climate Emergencies. More than 620 local and national governments around the world have taken that action. Some people label them as tokenism, but if they result in meaningful political responses then they are certainly not that. The New Zealand Government has not declared a national climate emergency, but at the time of writing Canterbury Regional Council, Christchurch City Council, Nelson City Council, Auckland Council, Wellington City Council, and Dunedin City Council have. Others, such as the Hawke’s Bay Regional Council and the Southland Regional Council, are likely to follow.

<sup>1</sup> As reported by both Isobel Ewing and Patrick Gower, Newshub, 20 August 2017

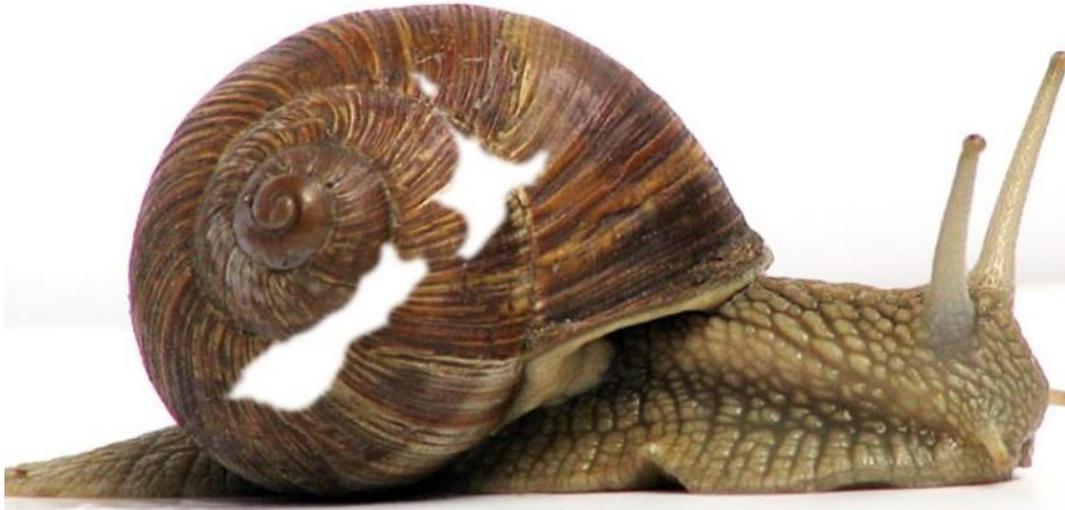


Figure 4: Social media comment on the lack of progress addressing climate change

**There is justification for the depiction in Figure 4. Initially it was proposed that there would be stand-alone legislation on Zero Carbon, but it has instead been introduced as an amendment to the existing Climate Change Response Act 2002. This suggests a diminution in the standing of the legislation. If it is truly to be framework legislation, it should be paramount and stand alone, and not be part of detailed minutiae on the administration of the Emissions Trading Scheme, etc.**

The consultation period for the then Zero Carbon Bill was from 7 June to 19 July 2018. I attended such a meeting on the 11 June 2018, as shown in Figure 5. What has happened in the 10 months after then? Not much. I understand the Minister for Climate Change wanted other political parties to have ‘skin in the game’, that is, their acceptance of the Bill provisions. Given the content of the Parliamentary debate during the first reading of the Bill (on 21 May 2019) he failed in that regard. In reality, those 10 months were a period of lost time.



Figure 5: Zero Carbon Bill Consultation, Novotel Hotel, New Plymouth, 11 June 2018

Because of the labelling by Jacinda Ardern in 2017 of climate change being her “generation’s nuclear-free moment”, a comparison can be made between the approach of her Government to climate change and that of the Labour Government of 1984 regarding the anti-nuclear issue. Soon after the 1984 election, and taking into account opinion polls taken before the election which showed a clear majority opposed to visits by nuclear-powered ships, especially those with nuclear weapons aboard, Prime Minister David Lange barred nuclear-powered or nuclear-armed ships from using New Zealand ports or entering New Zealand waters. That action was followed by the enactment of the New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act 1987. That Act has had only inconsequential amendments since 1987. It has not been repealed by subsequent Governments. The territorial sea and land of New Zealand are nuclear free zones. The legislation simply endorsed the policy action taken previously.

**The comparative situation is, as with the opinion polls of 1984 on the anti-nuclear issue, the public of New Zealand are strongly in favour of action on climate change. But, unlike the decisive action of the Lange Government, the current coalition Government has been sending confusingly mixed messages on addressing climate change. On the one hand, in April 2018 a ban was placed on new offshore oil and gas permits. Then in September 2018, a coal exploration permit was granted to BT Mining Limited (part of Bathurst Resources) on Crown land at Rotowaro. Also, Genesis Energy Limited, a 51% state-owned Company, continues to occasionally burn coal to generate electricity at Huntly, and may do so past 2030. The Climate Change Response (Zero Carbon) Amendment Bill is another example of insufficient action on climate change, with a long gestation period.**

### **3. What the Bill Contains**

The Bill is relatively brief. It adds three Parts (1A, 1B, and 1C) after Section 5 of the Climate Change Response Act 2002, viz.:

Part 1A: Climate Change Commission

Part 1B: Emission reduction

Part 1C: Adaptation

The establishment of the Climate Change Commission has been partly set up as the Interim Climate Change Committee. The Committee was established to consider and report on two topics, Agriculture and Electricity. Specifically, from the Committee’s website, they were to address:

Agriculture

*How surrender obligations could best be arranged if agricultural methane and nitrous oxide emissions enter into the New Zealand Emissions Trading Scheme.*

Electricity

*Deliver evidence and analysis on the likely options, costs and practicality of how New Zealand can move toward 100 percent low emission electricity by 2035.*

I understand the Interim Climate Change Committee delivered their Agriculture and Electricity Reports to the Government on 30 April 2019, and the Government is considering a response. I was informed on 13 May 2019 that I “can expect a response soon”<sup>2</sup>.

**I have concerns about the lack of powers of the Climate Change Commission, and I address that topic in a subsequent section of this submission.**

The Bill requires that emission reduction be achieved through the use of Emissions Budgets. This is similar to the approach of the United Kingdom Climate Change Act 2008. It is frequently referred to as forming ‘stepping stones’ to achieve a required emission reduction target by a certain date. The date chosen is 2050, and the target is (referenced from what would become section 5O of the Act):

- (1) The target for emissions reduction (the **2050 target**) requires that—
  - (a) net emissions of greenhouse gases in a calendar year, other than biogenic methane, are zero by the calendar year beginning on 1 January 2050 and for each subsequent calendar year; and
  - (b) gross emissions of biogenic methane in a calendar year—
    - (i) are 10% less than 2017 emissions by the calendar year beginning on 1 January 2030; and
    - (ii) are at least 24% to 47% less than 2017 emissions by the calendar year beginning on 1 January 2050 and for each subsequent calendar year.
- (2) In this section, **2017 emissions** means the gross emissions of biogenic methane for the calendar year beginning on 1 January 2017.

That is, the Bill differentiates between biogenic methane (defined as methane produced from the agriculture and waste sectors, as those sectors are defined in the New Zealand Greenhouse Gas Inventory (referenced from what would become an amended section 4 (Interpretation) of the Act)) and fossil methane (that is, methane produced from such sources as natural gas leakage, coal mining, and chemicals production from natural gas).

The word “emissions” is defined as carbon dioxide equivalent emissions. “Gross emissions” means New Zealand’s total emissions from the agriculture, energy, industrial processes and product use, and waste sectors, as those sectors are defined in the New Zealand Greenhouse Gas Inventory. “Net emissions” means gross emissions combined with emissions and removals from land use, land use change, and the forestry sector (all referenced from what would become an amended section 4 (Interpretation) of the Act). As mentioned previously, the Bill does not propose amending the definition of “greenhouse gases” in the Climate Change Response Act 2002. Hence the definition remains those gases listed in Annex A of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride).

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<sup>2</sup> Email response from Rachel Ward, Office of the Minister for Climate Change, 13 May 2019

The Bill requires that the Climate Change Commission must review the 2050 target when preparing advice to the Minister on an emissions budget, or at any other time the Minister requests a review. The Commission may only recommend a change to the target if there are significant changes in such things as global action, scientific understanding, or technological developments, and if “the Commission is satisfied that the significant change justifies the change to the target” (referenced from what would become section 5Q(2) of the Act). The Minister has up to 12 months to respond to the Commission’s recommendation, and then present the response to the House of Representatives “as soon as practicable” (referenced from what would become section 5R(2) of the Act).

The Bill places a duty on the Minister “to set emissions budgets and ensure they are met” (referenced from what would become section 5U of the Act). The Climate Change Commission has an advisory role in these matters. The emissions budgets are to be set for a five-year period, and from the 31 December 2021 there must be three budgets in place at one time, one current and two prospective. There are proposed provisions for “banking” of and “borrowing” from budgets. Borrowing is proposed to be limited to 1% of the next emissions budget, whereas if total emissions are lower than the emissions budget for that period there is no limit on how much may be carried forward (banked) to the next emissions budget period.

On Adaptation, my starting point is that the Paris Agreement (Article 7, section 1) requires:

Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

The Bill addresses adaptation by requiring National Climate Change Risk Assessments at least every six years (referenced from what would become sections 5ZM, 5ZN, 5ZNO, and 5ZP of the Act). The Minister, in response to each national climate change risk assessment, must prepare no later than two years afterwards a National Adaptation Plan (referenced from what would become sections 5ZQ and 5ZR of the Act).

The Bill requires that the Climate Change Commission must provide the Minister at two yearly intervals a progress report that evaluates each National Adaptation Plan, and make the report publicly available after providing it to the Minister. The Minister must present each progress report to Parliament, and respond to the Commission, no later than 12 weeks and 6 months, respectively, after receiving it (referenced from what would become sections 5ZS, 5ZT, and 5ZU of the Act).

The Minister may request, in writing, that certain organisations provide information on climate change adaptation, and the reporting organisation must comply with the request. The Minister must, as soon as practicable after receipt, supply that information to the Commission. Reporting organisations include Government entities, local authorities, and lifeline utilities (referenced from what would become section 5ZV of the Act).

**Unlike much of the content of Part 1A (Climate Change Commission) and Part 1B (Emission reduction) of the Bill, I have no objections to the content of Part 1C (Adaptation).**

#### **4. The Main Problem with the Bill: The ‘Target’**

The Purpose of the Bill (amending Section 3 of the Climate Change Response Act 2002) is:

provide a framework by which New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels ..

That is, the Bill essentially has the purpose of giving effect to New Zealand’s contribution to complying with the Paris Agreement. The central aim of the Agreement (Article 2, paragraph 1(a)) was given in an earlier section of this submission.

**The Climate Change Response Act 2002 has, as Schedules 1 and 2 respectively, the United Nations Framework Convention on Climate Change and the Kyoto Protocol to that Convention. The Climate Change Response (Zero Carbon) Amendment Bill does not follow that precedence and have the Paris Agreement as a Schedule. That may be another example of the shortcomings in the drafting of the Bill.**

Where did the date of 2050 for the Target in the Bill come from? The Paris Agreement (Article 4, paragraph 1) requires:

In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

**The reference to the “second half of this century” in the wording of that Article does not mean for an individual country, in this case New Zealand, that 2050 is the required date for achieving “a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases”. Equally important words in that Article are “as soon as possible”, “recognizing that peaking will take longer for developing country Parties”, and “undertake rapid reductions ..... in accordance with best available science”.**

Much has changed since the COP21 meeting in Paris in December 2015 and the coming into force of the Paris Agreement. That occurred on 4 November 2016, being thirty days after the date on which at least 55 Parties to the Convention, accounting in total for at least an estimated 55% of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary (designated by Article 26 of the Agreement as the Secretary-General of the United Nations). New Zealand, via Paula Bennett, then Minister for Climate Change Issues, signed the Agreement in New York on 22 April 2016. The instruments of ratification were deposited on 4 October 2016.

The most important development since December 2015 has been the release in October 2018 of a report by the Intergovernmental Panel on Climate Change (IPCC). It was prepared in response to an invitation in the Paris Agreement (paragraph 21 of Decision 1/CP.21 of the 21st Conference of Parties of the United Nations Framework Convention on Climate Change to adopt the Paris Agreement) for the IPCC to provide a Special Report in 2018 on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways. The IPCC accepted the invitation in April 2016.

The full title of the report is “Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, SR15”. It was approved at an IPCC meeting in Incheon, Republic of Korea, held on 1-5 October 2018, and published on 8 October 2018. The report includes over 6,000 scientific references, and it was prepared by 91 authors from 40 countries.

The key findings of the report include:

meeting a 1.5 °C target is possible, but it would require deep emissions reductions and rapid, far-reaching and unprecedented changes in all aspects of society;

global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate; and

warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts, but these emissions alone are unlikely to cause global warming of 1.5°C.

**I interpret those findings of the IPCC to mean that, although emissions of greenhouse gases since the pre-industrial period will continue to cause climate impacts for a very long time, it will be current and future emissions, if left unchecked by urgent and deep reductions, that will cause a global temperature of 1.5°C as early as 2030. Quite simply, 2050 is a timeframe too far away.**

Repeating words in Article 4, paragraph 1 of the Paris Agreement regarding the peaking of emissions and the undertaking of rapid reductions in emissions, that is, it will take longer for developing countries to do so, it is incumbent on countries like New Zealand to make those reductions as soon as possible, and certainly achieve net zero carbon well before 2050.

**I have long advocated a timeframe of 2030 for New Zealand to achieve net zero carbon dioxide equivalent emissions and net negative carbon dioxide equivalent emissions after then. This was based on such things as our large percentage of electricity generation from renewable sources (84%, four-quarter moving average as at March 2019); our high level of innovation; and an expectation there would be Government acceptance and implementation of the Productivity Commission recommendation of a feebate scheme, whereby high-emissions vehicles would incur a fee while low-emissions (such as electric) vehicles would receive a rebate.**

**There was nothing about a feebate scheme in the recent 2019 (“Wellness”) Budget. This seems to be another example of the mixed messages being sent by the Government on addressing climate change.**

What are other countries doing about net zero carbon? A recent (14 June 2019) report by Megan Darby<sup>3</sup> provides a useful summary. It is planned for this summary to be updated as new commitments are made. Apparently, Bhutan is already “carbon negative and aiming for carbon neutrality as it develops”. Two countries, Norway and Sweden, have passed laws requiring them be net carbon zero by 2030 and 2045, respectively. Although not a country, but being a very large economy, the State of California, by Executive Order, is to be net carbon zero by 2045.

There is proposed legislation in France and Spain, as well as New Zealand, all with a timeframe of 2050. A coalition agreement has been reached in Finland, with a target date of 2035. There are discussions going on in the Chile, Germany, the Netherlands, and the United Kingdom, and also at the European Union as a bloc. Again, 2050 is the timeframe being discussed, except for the United Kingdom where there are differences between England (2050), Scotland (2045), and Wales (a 95% reduction by 2050 relative to 1990). Various countries have released policy positions or made commitments to the United Nations, including Costa Rica, Denmark, Fiji, Iceland, Ireland, Japan, Marshall Islands, Portugal, and Uruguay. Uruguay is indicating 2030, Iceland 2040, and the others 2050. The Uruguay position is seen as “more of a forecast than a commitment”.

**In summary, with the possible exception of Norway, politicians around the world are neither listening to their publics nor responding adequately to the findings of the IPCC in their Special Report (SR15).**

A complicating factor in any consideration on the merits of approaches to climate change law is the status of the purchase of international carbon credits. Some countries allow them to be included in the calculation of net emissions, whereas others do not. In the past there were purchases of bogus carbon credits by New Zealand from Russia and Ukraine. The definition of “net emissions” in the Climate Change Response (Zero Carbon) Amendment Bill, given in an earlier section of this submission, does not refer to the purchase of international carbon credits. This is a pleasing aspect of the Bill.

Since the Bill was made public, most comment has been about the separate treatment of biogenic methane (mainly produced from the agriculture sector). That debate would have been assisted by the release of the Report of Interim Climate Change Committee on Agriculture, which was delivered to the Government on 30 April 2019. In my submission of 17 July 2018 to the Ministry for the Environment on the Zero Carbon Bill, I positively referred to the calculation of the carbon dioxide equivalent emissions taking into account differences in the global warming potential between long-lived and short-lived gases. I suggested that, for example, the methodology proposed by Allen et al, "A solution to the misrepresentations of CO<sub>2</sub>-equivalent emissions of short-lived climate pollutants under ambitious mitigation", *Nature Partner Journals, Climate and Atmospheric Science* (2018) 16, may be useful in that regard.

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<sup>3</sup> Megan Darby, “Which countries have a net zero carbon goal?”, 21 June 2019, available at <http://www.climatechangenews.com/2019/06/14/countries-net-zero-climate-goal/>

The Parliamentary Commissioner for the Environment, Simon Upton, has entered that debate with his report “Farms, forest and fossil fuels: The next great landscape transformation”, March 2019. Without the release of the Interim Climate Change Committee report on Agriculture, I have decided not to address this topic further in this submission. A reason for the delay in the Government responding to that report may be a clause in the New Zealand Labour Party & New Zealand First Coalition Agreement of 24 October 2017<sup>4</sup>:

If the Climate Commission determines that agriculture is to be included in the ETS, then upon entry, the free allocation to agriculture will be 95% but with all revenues from this source recycled back into agriculture in order to encourage agricultural innovation, mitigation and additional planting of forestry.

With the long period of inaction that has gone by, a 2030 timeframe looks increasingly unachievable. An alternative, very simple, approach<sup>5</sup> may now be more appropriate, viz.:

**Given that:**

- **the global temperature has reached about 1°C above pre-industrial levels;**
- **temperatures will continue to rise as long as emissions of greenhouse gases into the atmosphere continue; and**
- **the New Zealand gross emissions of greenhouse gases, according to the New Zealand Greenhouse Gas Inventory, are [80] million tonnes of carbon dioxide equivalent per year,**

**therefore, the Climate Change Response (Zero Carbon) Amendment Bill should require that New Zealand’s gross emissions of greenhouse gases be reduced by at least [16] million tonnes of carbon dioxide equivalent per year for every 0.1°C of global warming (as determined by the World Meteorological Organisation). The Climate Change Commission should determine the most cost-effective actions to achieve those reductions.**

This approach demonstrates simplicity by being based solely on New Zealand doing its part to achieve the central aim of the Paris Agreement (and the Purpose of the Bill), viz.: preventing a global temperature increase of 1.5°C above pre-industrial levels. The numbers 80 and 16 in the above are just examples, as it is the principle of a 20% reduction in emissions for every 0.1°C rise in global temperature that is important. No timeframe is required. The only metric is the easy to understand gross emissions, albeit expressed in terms of carbon dioxide equivalent emissions.

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<sup>4</sup> Available at <https://d3n8a8pro7vhmx.cloudfront.net/nzfirst/pages/2110/attachments/original/1529499873/LabourandNewZealandFirstCoalitionAgreement2017.pdf?1529499873>

<sup>5</sup> Based on a suggestion by Myles Allen, University of Oxford, March 2019, expanded to include all greenhouse gases and using New Zealand emissions data

## 5. Other Problems with the Bill

Another problem with the Bill, as drafted, is the lack of powers of the Climate Change Commission. The Bill sets out the functions of the Commission as follows (referenced from what would become section 5J of the Act):

The functions of the Commission are—

- (a) to review the 2050 target and, if necessary, recommend changes to the target:
- (b) to provide advice to the Minister to enable the preparation of emissions budgets:
- (c) to recommend any necessary amendments to emissions budgets:
- (d) to provide advice to the Minister about the quantity of emissions that may be banked or borrowed between 2 adjacent emissions budget periods:
- (e) to provide advice to the Minister to enable the preparation of an emissions reduction plan:
- (f) to monitor and report on progress towards meeting emissions budgets and the 2050 target:
- (g) to prepare national climate change risk assessments:
- (h) to prepare reports on the implementation of the national adaptation plan:
- (i) to provide other reports requested by the Minister.

**That is, unless the Bill is amended, the Commission will mainly have advisory functions (providing advice) to the Minister for Climate Change, with no decision-making powers. Decision-making would be by a simple majority in Parliament. In my submission on the Zero Carbon Bill I favoured the Commission having similar powers to those of the Commerce Commission. I remain firmly of that view.**

The Bill does provide that the Commission must act independently (referenced below from what would become section 5N of the Act), with two caveats. The second of those seems appropriate. As for the reference to the Emission Trading Scheme (ETS), I continue to have fundamental issues with the ETS, still favouring instead a carbon tax.

- (1) The Commission must act independently in performing its functions and duties and exercising its powers under this Act.
- (2) However, the Minister may direct the Commission to have regard to Government policy for the purposes of the Commission—
  - (a) recommending unit supply settings of the New Zealand emissions trading scheme; and
  - (b) providing advice about New Zealand's nationally determined contributions under the Paris Agreement.

A final problem with the Bill, as drafted, is the lack of enforcement mechanisms. Former co-leader of the Green Party and now Executive Director of Greenpeace New Zealand, Russel Norman, has referred to the Bill as being “a reasonably ambitious piece of legislation that’s then had the teeth ripped out of it. There’s bark, but there’s no bite”.

**Others have criticised this toothlessness. There is no provision for enforcement via courts for a breach of the target or emissions budgets. The concerns about this lack of enforcement mechanisms are directed at the implications for future progress on addressing climate change.**

The Paris Agreement was similarly criticised for its lack of enforcement provisions, most notably by James Hansen, a former NASA scientist and a renowned climate change expert. He referred to the Agreement as consisting of “promises or aims and not firm commitments”, and he called it “a fraud”.

Many others have also observed that the stated objectives of the Paris Agreement are “implicitly predicated upon an assumption that member states of the United Nations ... will somehow drive down their carbon pollution voluntarily and assiduously without any binding enforcement mechanism to measure and control carbon dioxide emissions at any level from factory to state, and without any specific penalty gradation ..”. The mechanism in the Paris Agreement being referred to are the Nationally Determined Contributions (NDCs). Independent analyses of the NDCs show how inadequate they are, with some of them consistent with a global warming of up to 4.0°C.

**So, all in all, a disastrous situation. The Climate Change Response (Zero Carbon) Amendment Bill does not deliver adequate responses to that.**



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