



# Submissions form

We seek your feedback on the specific proposals in the Zero Carbon Bill.

Either email this submission to [ZCB.Submissions@mfe.govt.nz](mailto:ZCB.Submissions@mfe.govt.nz) (Microsoft Word document (2003 or later) or PDF) or post to Ministry for the Environment, PO Box 10362, Wellington, 6143.

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## Personal / organisation details

*You must provide either a company name or given name(s)*

Company name \_\_\_\_\_

Given names Wiremu \_\_\_\_\_

Surname Thomson \_\_\_\_\_

Contact person \_\_\_\_\_

Address \_\_\_\_\_

Region \_\_\_\_\_



Country \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Submitter type, pick one:

- **Individual**
- NGO
- Business / Industry
- Local Government
- Central Government
- Iwi / Māori
- University
- Research Institute
- School
- Community Group
- Unspecified / Other

## 2050 target

1. What process should the Government use to set a new emissions reduction target in legislation?

Pick one:

- **the Government sets a 2050 target in legislation now**
- the Government sets a goal to reach net zero emissions by the second half of the century, and the Climate Change Commission advises on the specific target for the Government to set later.

### Optional comment

The Government can set a 2050 target consistent with the Paris Agreement now and the Climate Change Commission can advise on its appropriateness when they want to.

1. If the Government sets a 2050 target now, which is the best target for New Zealand?

Pick one:

- **net zero carbon dioxide:** Reducing net carbon dioxide emissions to zero by 2050

- **net zero long-lived gases and stabilised short-lived gases:** Long-lived gases to net zero by 2050, while also stabilising short-lived gases
- **net zero emissions:** Net zero emissions across all greenhouse gases by 2050.

### Optional comment

The net zero emissions target should include removals of biological methane emissions from 12 years ago (the atmospheric lifetime of methane, according to pg. 200 of the Productivity Commission's Low-Emissions Economy draft report). This would mean that a stable level of methane would be considered as net zero, but a reduction in methane levels would contribute to the net zero target and an increase would be detrimental. A net zero emissions target would be less prescriptive than option 2, but basically they are the same.

Also, and important to the previous paragraph, the Government should set a cumulative emissions target because this would be more accurate in terms of the science and allows people to make greater mitigation effort now to reduce effort required in the future, which also leads to a larger mitigation of sea level rise for a given cumulative emissions total (according to pg. 105 of the Technical Summary of the first footnote below). Not having a cumulative emissions target may encourage people to do emissions-intensive projects now before they have to account for it later on.

The cumulative emissions budget could be set using the remaining CO<sub>2</sub> budget consistent with the Paris Agreement, multiplied by NZ's percentage of world population and would cover emissions generated overseas for products NZ imports and exclude emissions generated in NZ for products NZ exports. It would also need to include international aviation and navigation bunkers somehow. For example,

Remaining CO<sub>2</sub> after 2011:  $2900 - 1890 = 1010 \text{ GtCO}_2$  <sup>[1]</sup>

NZ's percentage of world population (2018): 0.06% <sup>[2]</sup>

Estimate of NZ's share of emissions budget:  $1010 * 0.0006 = 606 \text{ MtCO}_2$

Net emissions without Enteric Fermentation emissions (presumably biological methane, which has been relatively stable) from 2012 to 2016:  $30.1 + 30.3 + 30.9 + 31.6 + 32.5 = 155 \text{ MtCO}_2$

<sup>1</sup> pg. 27, IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the

*Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.*

2 <http://www.worldometers.info/world-population/new-zealand-population/>

Estimate of NZ's share of emissions budget after 2016:  $606 - 155 = 451 \text{ MtCO}_2$

Years after 2016 to reach net zero using straight-line target:  $451 / (32.5/2) = 27.8$  years.

So NZ would have to achieve net zero in 2043 using a straight-line target from 2016.

However, this is a rough estimate as:

- it does not include imported and exclude exported emissions
- it just allocates to NZ the international aviation and navigation bunker emissions that NZ reports
- it uses percentage of population in 2018 to calculate a share of the post-2011 emissions budget
- there may be some relevant emissions numbers that I missed such as 'long-term storage of C in waste disposal sites'
- using this approach for the USA only gave them about six years from 2016 to get to net zero. Other countries with more population and thus a higher emissions budget may have longer to get to net zero.
- it assumes no changes after reaching net zero rather than some models that include a removal aspect after reaching net zero.
- A rapid early reduction in emissions would increase the number of years before needing to get to net zero.
- And the numbers are perhaps not consistent with the first footnote, which suggests a reduction of 14 – 96% of 1990 emissions by 2050 is consistent with RCP2.6, which would comply with the Paris Agreement.

The target should require there to be suitable land available after 2050 to offset average gross emissions for the rest of the century. Otherwise too much of the 2050 target may have been met by forestry removals in an unsustainable way.

## 2. How should New Zealand meet its targets?

Pick one:

- **domestic emissions reductions only** (including from new forest planting)
- domestic emissions reductions (including from new forest planting) and using some emissions reductions from overseas (international carbon units) that have strong environmental safeguards.

**Optional comment**

NZ could use international units, but I think there is a chance we would be one of the countries providing reductions to others, so thinking we could use international units to meet the target may not be that helpful.

3. Should the Zero Carbon Bill allow the 2050 target to be revised if circumstances change?

Pick one:

- yes
- **no.**

**Optional comment**

If circumstances change, Parliament can always just amend the Act.

## Emissions budgets

4. The Government proposes that three emissions budgets of five years each (ie, covering the next 15 years) be in place at any given time. Do you agree with this proposal?

Pick one:

- yes
- no.

**Optional comment**

I don't mind, but any emissions budgets that are set should include a clear plan of how the Government intends to achieve those budgets, so the people who have to achieve the budget don't view it as pie in the sky thinking and if they want to be less ambitious then there is more information to question them on as to why they aren't doing something mentioned in the plan.

5. Should the Government be able to alter the last emissions budget (ie, furthest into the future)?

Pick one:

- yes, each incoming Government should have the option to review the third budget in the sequence
- yes, the third emissions budget should be able to be changed, but only when the subsequent budget is set
- no, emissions budgets should not be able to be changed.

**Optional comment**

6. Should the Government have the ability to review and adjust the second emissions budget within a specific range under [exceptional circumstances](#)?

Pick one:

- yes
- **no.**

**Optional comment**

If the circumstances were exceptional, then you would think Parliament could agree to amend the Act.

The Act could allow borrowing of say 5-10% of the next budget with the intention that a responsible Government would only use it for covering exceptional circumstances such as a natural disaster.

7. Do you agree with the [considerations](#) we propose that the Government and the Climate Change Commission take into account when advising on and setting budgets?

Pick one:

- yes
- no.

**Optional comment**

I would prefer a straight-line linear progression as it spreads the mitigation burden in a reasonably fair way across generations, so I see no need for the advising and setting of budgets unless the

Government wanted to pursue a more ambitious budget than the linear one required in that period.

If the Government set a slow decrease then rapid decrease emissions trajectory, then I think it would be hard for following generations to respect the budget given that the people who set a greater mitigation effort were not prepared to make the same mitigation effort.

It could be the case if you are doing an infrastructure investment that you expect to come online in several years and reduce emissions, but there would need to be a clear and believable plan as to how emissions would be back on track to achieving the linear progression in several years time.

The worst outcome of the Act is if it allows the Government to pretend to be on track to meeting the Paris Agreement when really they are relying on one of four things: other countries admitting failure before NZ has to, a yet to be proven technology saving the day, future generations making a greater mitigation effort than current generations are prepared to do, or that they will be long gone by the time it goes to custard.

If a straight-line progression towards a target consistent with the Paris Agreement is too hard, I would prefer at least a straight-line minimum progression target towards something that is considered to be achievable with the acknowledgement that the target is likely not good enough to meet the Paris Agreement, rather than allowing a Government to meander their budgets pretending that it's all on track when it's not.

## Government response

8. Should the Zero Carbon Bill require Governments to set out plans within a certain timeframe to achieve the emissions budgets?

Pick one:

- yes
- no.

**Optional comment**

9. What are the most important issues for the Government to consider in setting plans to meet budgets? For example, who do we need to work with, what else needs to be considered?

**Comment**

Need to consider wellbeing

## Climate Change Commission

10. The Government has proposed that the Climate Change Commission [advises on and monitors](#) New Zealand's progress towards its goals. Do you agree with these functions?

Pick one:

- **yes**
- no.

**Optional comment**

11. What role do you think the Climate Change Commission should have in relation to the New Zealand Emissions Trading Scheme (NZ ETS)?

Pick one:

- **advising the Government on policy settings in the NZ ETS**
- makes decisions itself, in respect of the number of units available in the NZ ETS.

**Optional comment**

The Government is ultimately accountable for the target, so they should have control of one of the most effective emissions reduction tools. However, as far as I know, the Reserve Bank seems to do alright with the decisions it's responsible for.



12. The Government has proposed that Climate Change Commissioners need to have a range of **essential and desirable expertise**. Do you agree with the proposed expertise?

Pick one:

- yes**
- no.

**Optional comment**

But I would probably add local government to desirable expertise. It is listed as part of adaptation challenges in essential expertise, but local government might also have roles in mitigation and monitoring.

## Adapting to the impacts of climate change

13. Do you think the Zero Carbon Bill should cover adapting to climate change?

Pick one:

- yes
- no**

**Optional comment**

Probably more appropriate to do adaptation in a separate bill, though adaptation is a part of the Paris Agreement.

14. The Government has proposed a number of new **functions** to help us adapt to climate change. Do you agree with the proposed functions?

Pick one:

- yes
- no.

**Optional comment**



15. Should we explore setting up a targeted adaptation reporting power that could see some organisations share information on their exposure to climate change risks?

Pick one:

- yes
- no.

**Optional comment**

16. Additional comments

Earlier in the year, I think the Minister of Climate Change said that the most effective action a person could take to reduce emissions is to eat one less meat meal a week, but in preparing for this submission I saw an article that states the best action is to conceive one less child, which may be hard to say, but people may want to know (<http://iopscience.iop.org/article/10.1088/1748-9326/aa7541/meta>).