Greenpeace New Zealand Submission on Zero Carbon Bill

Key recommendations

- New Zealand's goal must be to limit global warming to no more than 1.5^{o} C by the end of this century. This goal should be stated in the Zero Carbon Bill.
- New Zealand's climate law must be fair, ambitious and consistent with the latest climate science and international frameworks, such as the Paris Agreement, by including all greenhouse gases.
- A target of net-zero by 2040 better reflects the latest science and the need to achieve rapid, substantial reductions in emissions than does a target of net-zero by 2050.
- Legally-binding climate targets should be legislated now, and a Climate Commission established whose role should be to devise legally-binding budgets.
- The primary focus of five-year budgets should be gross emissions cuts, while offsets should occur as a secondary or separately reported budget.
- The ZCA should adopt a 'firewall' principle: that New Zealand's targets must be achieved by actual cuts in our own emissions, and offsets within New Zealand, not through the purchase of international carbon credits.
- To achieve significant gross cuts in methane and nitrous oxide emissions requires reducing ruminant livestock numbers and cutting synthetic fertiliser use.
- While cross-party consensus is a desirable long-term goal, any such consensus should not be prioritised over the achievement of strong climate law today.
- Adaptation should not be the responsibility of the Climate Commission.

Climate Change Overview

Climate change is an existential threat, posing grave danger to our health, homes, communities, food security, culture and livelihoods, as well as the wildlife and wild places with which we share this Earth.

We must apply our ambition, ingenuity, and courage to hasten the transition to a stable and resilient society, powered by clean energy.

The climate science is clear: to avoid catastrophic impacts the world must embark on a rapid phase out of fossil fuels, the protection and restoration of forests and ocean ecosystems and a transformation of global agriculture. All these things need to happen together. We must move beyond incremental change towards a positive transformational shift in the world's energy and land-use systems.

Climate change is an injustice that disproportionately affects our neighbours and kin in the Pacific, developing nations, indigenous people, people of colour, women and poorer working people. These are also the people who are least responsible for causing this crisis.

But the steps we take to address this threat also provide us with opportunities to move towards a more just and equal society, to boost innovation and employment, create more resilient communities, improve our health, and live in better balance with nature.

2017 was one of the top three warmest years on record[1], a year marked by devastating Hurricanes Harvey, Irma and Maria, unprecedented flooding in Bangladesh and ongoing drought and famine in Ethiopia. In recent years we've also seen super typhoons in the Philippines, climate-changed cyclones across the Pacific, retreating Arctic Ocean sea ice and drought and fires in the Amazon.

Here in New Zealand we are already seeing higher temperatures, more frequent extreme weather events and a change in the intensity of rainfall patterns, all of which are projected to worsen without concerted action.[2]

These events point to the fact that we must take all steps to avoid further warming. If we stabilise global average temperature increase to a maximum of 1.5°C, we will limit the impacts on low-lying land, on crops, on water resources, and on people's livelihoods.

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[1] World Meteorological Organisation, 2017, "2017 remains on track to be among 3 hottest years on record", *WMO*, 19 December (online), available at: https://public.wmo.int/en/media/news/2017-remains-track-be-among-3-hottest-years-record

[2] MFE, Overview of likely climate change impacts in New Zealand, *Ministry for the Environment*, available at: http://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/overview-of-likely-climate-change-impacts

However on current projections, the pledge made by the Paris signatories will fall far short of what was promised and will only achieve a third of the emissions cuts required[3] to meet the goal of "well below 2 degrees warming," let alone, "pursuing 1.5 degrees."[4] We are instead on a 3-degree trajectory.[5]

The average global temperature already hit 1.1 degrees Celsius above pre-industrial levels in 2016 according to the WMO[6], indicating that urgent action is required now to meet the 1.5 degrees target.

To limit global warming we must achieve a peak in global emissions by 2020, followed by a rapid decline thereafter.

That's what the science tells us. Nobody knows if we can succeed, but we must try. To give up on this ambition is to condemn some nations, including some of our nearest neighbours in the Pacific, to non-existence. New Zealand cannot give in to this consequence without a fight.

Only where there is will do we have any possibility of finding a way.

Human ingenuity, resolve, courage and moral obligation have in the past led us to achieve unprecedented change. That is what is required now. Every tenth of a degree of warming we can avoid matters.

Now is the time to back clean energy industries, and invite the transformational opportunities that shifting to a low-emissions society can bring including in land-use and agriculture. Now is the time to reject the self-interest of those polluting industries determined to slow, delay or avoid change. This must be a just transition - one that fairly distributes the costs and benefits across society and provides opportunities for those affected to actively engage in determining the future wellbeing of themselves and their families.

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[3] UNEP, 2017, The Emissions Gap Report 2017, *United Nations Environment Programme (UNEP)*, Nairobi, available at:
https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?isAllowed=y&sequence=1

[4] "The Paris Agreement central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius." see:
https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

[5] Shaikh, S., 2017, Climate goal in peril as science points to 3 degree warming, *SciDev Ne*t, (online), available at: https://www.scidev.net/global/climate-change/news/climate-goal-in-peril-as-science-points-to-3-degree-warming.html, accessed 19 July 2018

[6] World Meteorological Organisation, 2017, WMO confirms 2016 as hottest year on record, about 1.1ºC above pre-industrial era, *WMO,* (online) available at:
https://public.wmo.int/en/media/press-release/wmo-confirms-2016-hottest-year-record-about-11%C2%B0c-above-pre-industrial-era

More than ever, the world needs bold leadership. New Zealand must greatly raise our ambition and step up to the forefront of this planetary challenge.

Summary of Response to proposed Zero Carbon Bill

Climate change is the greatest challenge facing humanity. As part of a suite of policy strategies to tackle climate change, Greenpeace supports the passing of a legally-binding climate law and the establishment of a Climate Commission to set binding carbon budgets for the achievement of a zero carbon target.

New Zealand's climate law must be fair, ambitious and consistent with the latest climate science and international frameworks by including all greenhouse gases (GHGs).

A goal of limiting warming to 2º C by the end of the century could mean locking in significant extinctions, and devastating impacts, including to Pacific island states.[7] This is unacceptable. Therefore New Zealand's goal must be to limit global warming to no more than 1.5º C by the end of this century. This goal should be stated in the Zero Carbon Bill.

To have the best possibility of limiting global warming to no more than 1.5º C we must make rapid, substantial reductions in gross emissions of all greenhouse gases (GHGs) beginning immediately.

Targets

The actual date by which net-zero is achieved is somewhat arbitrary; it is cumulative emissions that count, not the date by which we reach zero. Achieving early substantial cuts in emissions is more important than reaching technical-net-zero by a particular date decades from now.

While targets may be expressed in net terms, whereby sequestration of CO_2 resulting from increasing forest biomass is used to offset some of our gross emissions, the Bill must take into account that we need *gross* cuts in all emissions and those cuts must be early and substantial - meaning the majority of cuts need to be achieved over the next decade.

If we are to keep within the safer global warming limit of 1.5º C, modelling shows that the combined energy and land-use system should deliver zero net anthropogenic emissions well before 2040 in order to assure the attainability of a 1.5º C target by 2100.[8]

A target of net-zero by 2040 better reflects the latest science and the need to achieve rapid, substantial reductions in emissions than does a target of net-zero by 2050.

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[7] Intergovernmental Panel on Climate Change (IPCC), 2018, Special Report on Global Warming of 1.5°C, draft document "summary for policymakers", *unpublished*, available at http://www.climatechangenews.com/2018/06/27/new-leaked-draft-of-un-1-5c-climate-report-in-full-and-annotated/

[8] Walsh B, et al., 2017, Pathways for balancing CO2 emissions and sinks, *Nature Communications*, 8, pp. 14856 available at: https://tinyurl.com/ybvglcf9

Methane

According to The Intergovernmental Panel on Climate Change (IPCC) methane reduction is critical to success in tackling climate change.[9] It would be scientifically untenable, and inconsistent with international climate frameworks, for New Zealand's climate law to exclude, exempt or create different rules for any gases (short or long-lived) such as methane.

Current arguments around stock and flow gases suit an agenda of continuing privileges for New Zealand's biggest emitting sector - the agricultural sector - and specifically the dairy industry, which accounts for at least 25% of New Zealand's GHG emissions. Allowing different treatments of methane, for example, would continue the unscientific, unfair and distorted history of climate policy in New Zealand. If the ZCA does not include non-CO_2 GHG emissions the legislation will also be inconsistent with the Paris Agreement.[10]

Legally binding targets and budgets

Greenpeace supports the passing of legally-binding climate targets now and the establishment of a Climate Commission, whose role should be to devise legally-binding budgets. The Climate Commission should have statutory teeth, otherwise it is merely an advisory group that governments could ignore. GHG budgets should themselves be legally binding and set a bare-minimum ambition, which must be achieved or bettered by government within the prescribed timeframes. While budgets should be binding, specific policy recommendations from the Commission should be just that - recommendations.

Forest sequestration

An over-reliance in the short to medium term on forests as carbon sinks must not be used as a way of avoiding making more substantial and essential reductions in gross emissions.

As the Parliamentary Commissioner for the Environment recently stated, "New Zealand has a long tradition of using substantial volumes of international credits and forestry offsets to meet its emission reduction targets. While this has helped to minimise the short-run cost of climate

[9] Intergovernmental Panel on Climate Change (IPCC), 2018, Special Report on Global Warming of 1.5°C, draft document "summary for policymakers", *unpublished*, available at http://www.climatechangenews.com/2018/06/27/new-leaked-draft-of-un-1-5c-climate-report-in-full-and-annotated/

[10] Bill Hare et al., 2018, Climate Analytics NZ Zero Carbon Submission final, *Climate Analytics*, July 18 - "Article 4.1 of the Paris Agreement refers to all GHGs including CO2, methane, nitrous-oxide and so called F-gases. Achieving net-zero carbon dioxide emissions without addressing non- CO2 greenhouse gases does therefore not comply with the Paris Agreement. This in particular the case in the New Zealand context, as the country has substantial emissions of non-CO2 greenhouse gases, predominantly from agriculture." - (pp. 4)

action, it has also masked an increase in gross emissions – which in 2016 were almost 20% above 1990 levels." (pg 3) [11]

Because the long term solution requires gross cuts, there should not be over-reliance on forests as carbon sinks in the short to medium term as this will mean that steeper reductions in gross emissions will be required later, and, this is likely to be more difficult, more disruptive, and more costly.[12]

For this reason the primary focus of the five-year budgets should be gross emissions cuts, while offsets should occur as a secondary or separately reported budget and should be capped.

Firewall principle

Greenpeace supports the 'firewall' principle: that New Zealand's targets must be achieved by actual cuts in our own emissions, and offsets within New Zealand, not through the purchase of international carbon credits.

Strong Climate law

Strong climate law must be the Coalition Government's first priority. While cross-party consensus is a desirable long-term goal, any such consensus should not be prioritised over the achievement of strong climate law today. The history of the ineffectual and distortionary Emissions Trading Scheme (ETS) is a cautionary tale in this regard. Because climate change is the greatest challenge facing humanity, it would be a failure to have broad agreement on weak law, when strong law is actually needed.

Let it be upon the heads of future governments if they seek to weaken the law; the government of the day should pass the strongest legislation it can and legislation which is fit for purpose on meeting this unprecedented threat to humanity.

Conclusion

The world needs pathways to transformational change if we are to avoid catastrophic warming. This is the scale of the challenge. The science is clear: the only way we can succeed is with big ambition. New Zealand must be bold and pass strong law for the sake of our precious earth and future generations.

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[11] PCE, 2018, Response to Productivity Commission Low-Emissions economy draft report, *Parliamentary Commissioner for the Environment (PCE)*, June, (online) available at: https://www.productivity.govt.nz/sites/default/files/sub-low-emissions-387-parliamentary-commissioner-for-the-environment.pdf

[12] Bill Hare et al., 2018, Climate Analytics NZ Zero Carbon Submission final, *Climate Analytics*, July 18

Responses to the specific questions asked in the Consultation Document

Q1. What process should the Government use to set a new emissions reduction target in legislation?

- *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.*

A target of net-zero emissions by 2040 should be set in legislation now.

The Bill should also include the goal of achieving 1.5° C warming by the end of the century as the objective of the legislated target through rapid and substantial cuts in gross and cumulative emissions.

The Climate Commission should be charged with devising budgets and plans for achieving substantial cuts in the coming decade.

The second draft of the IPCC Special Report on Global Warming finds the difference between warming of 1.5° C and 2° C would be "substantial" and damaging to communities, economies and ecosystems across the world.[13] The 0.5° C warming difference is critical for vulnerable regions.[14]

If we are to keep within the safer global warming limit of 1.5° C, modelling shows that the combined energy and land-use system should deliver zero net anthropogenic emissions well before 2040 in order to assure the attainability of a 1.5° C target by 2100.[15]

Limiting global warming to 1.5° C will require global anthropogenic CO_2 emissions to reach net-zero before 2040, together with rapid reductions in other emissions, particularly methane.[16]

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[13] Intergovernmental Panel on Climate Change (IPCC), 2018, Special Report on Global Warming of 1.5°C, draft document "summary for policymakers", *unpublished*, available at http://www.climatechangenews.com/2018/06/27/new-leaked-draft-of-un-1-5c-climate-report-in-full-and-annotated/

[14] Schleussner C-F, et al., 2016, Differential climate impacts for policy relevant limits to global warming: the case of 1.5°C and 2°C. *Earth System Dynamics*, 7(2):327-351, available at: https://www.earth-syst-dynam.net/7/327/2016/esd-7-327-2016.pdf, https://www.earth-syst-dynam.net/7/327/2016/esd-7-327-2016-discussion.html, summary at http://climateanalytics.org/files/2016_06_01_esd_schleussner_briefing_note.pdf

[15] Walsh B, et al., 2017, Pathways for balancing CO2 emissions and sinks, *Nature Communications*, 8, pp. 14856 available at: https://tinyurl.com/ybvglcf9

[16] Intergovernmental Panel on Climate Change (IPCC), 2018, Special Report on Global Warming of 1.5°C, draft document "summary for policymakers", *unpublished*, available at http://www.climatechangenews.com/2018/06/27/new-leaked-draft-of-un-1-5c-climate-report-in-full-and-annotated/

Q2. If the Government sets a 2050 target now, which is the best target for New Zealand?

- *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.*

The target should be net-zero emissions of all greenhouse gases by 2040.

Within that target the priority must be to minimise cumulative and gross emissions rather than rely on net carbon offsets. Reducing emissions in the 2020s is more impactful than delaying action until the 2030s or later. The Climate Commission should be tasked with setting gross emission reduction targets and offset caps to ensure that gross cuts are achieved.

Why including Methane and Nitrous Oxide is vital

Methane (CH_4) is the second most important GHG after carbon dioxide (CO_2) and is a much more powerful greenhouse gas than carbon dioxide. Methane is estimated to have a global warming potential (GWP) of 25 over 100 years according to the IPCC,[17] or 28–36 according to the US EPA.[18] Over the first 20 years after an emission of methane occurs, it is 84 times more potent than carbon dioxide.[19] So any growth in methane emissions has disproportionate impacts on the atmosphere.

As *Climate Analytics* states:

> "Methane and nitrous-oxide are potent greenhouse gases that contribute significantly to global warming and therefore need to be robustly addressed in any climate mitigation policy. The scientific literature is clear that, in parallel to CO_2, non-CO_2 emissions need to be substantially reduced to achieve the Paris Agreement goals: the most recent energy-economic scenarios, which form the backbone of the upcoming IPCC Special Report on 1.5°C, show that methane is reduced substantially to about 30-50% below 2010 by 2030 and to roughly 50% below 2010 by 2050." (pg. 4)[20]

Globally, 40% of anthropogenic CH_4 emissions come from agriculture (mainly livestock, but also rice paddies), 30% from fossil fuel production and use (for example, natural gas leaks), 20%

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[17] IPCC, 2007, Section 2.10.2 Direct Global Warming Potentials, in Climate Change 2007: The Physical Science Basis, *Intergovernmental Panel on Climate Change*, available at: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

[18] EPA, n.d., Understanding Global Warming Potentials, *United States Environmental Protection Agency*, available at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#Learn%20why, accessed 19 July 2018

[19] Hollis M, et al., 2016, Cows, sheep and science: A scientific perspective on biological emissions from agriculture: Motu Working Paper 16-17, *Motu Economic and Public Policy Research*, October, Pg. 10, available at: https://www.pce.parliament.nz/media/1680/cows-sheep-and-science-report_final.pdf

[20] Bill Hare *et al.*, 2018, Climate Analytics NZ Zero Carbon Submission final, *Climate Analytics,* July 18

from landfill and waste management, and 10% from biomass burning.[21] In New Zealand, CH_4 emissions are predominantly from livestock (79.9% in 2013).[22] As a percentage of New Zealand's emissions methane and nitrous oxide, largely from agricultural sources, make up over half of our gross emissions[23]

According to Ministry for the Environment (MFE), "Between 1990 and 2016, emissions from the Agriculture sector increased by 12.0 per cent. This is primarily due to the national dairy herd nearly doubling in size since 1990 and an increase of over 600 per cent in the application of nitrogen-containing fertiliser during the same period." (pg. 3) [24]

As noted earlier, the recent draft IPCC Special report makes special mention of methane as "particularly" requiring rapid reductions. It calls for "...rapid reductions in net global anthropogenic CO_2 emissions to reach net-zero around mid-century, together with rapid reductions in other anthropogenic emissions, particularly methane." (pg. 8)[25]

Agricultural gasses acount for over 50% of our GWP over the next century with methane making up over one third.[26] Per capita, New Zealand has the largest methane emission rate (0.6 t per person per year)—six times the global average.[27] It is absolutely untenable that either of these gases - methane or nitrous oxide - be excluded from any credible climate law.

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[21] Hollis M, et al., 2016, Cows, sheep and science: A scientific perspective on biological emissions from agriculture: Motu Working Paper 16-17, *Motu Economic and Public Policy Research*, October, Pg. 10, available at: https://www.pce.parliament.nz/media/1680/cows-sheep-and-science-report_final.pdf

[22] MfE (Ministry for the Environment), 2015, New Zealand's Greenhouse Gas Inventory 1990–2013. Submitted to the United Nations Framework Convention on Climate Change 10th April 2015. Wellington: *Ministry for the Environment*. Available at: https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/national-inventory-report%20updated%2029%20July%202015.pdf

[23] MfE (Ministry for the Environment), 2018, New Zealand Greenhouse Gas Inventory Snapshot 1990–2016, *Ministry for the Environment*, available at: https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/final_greenhouse_gas_inventory_snapshot.pdf

[24] Ibid.

[25] Intergovernmental Panel on Climate Change (IPCC), 2018, Special Report on Global Warming of 1.5°C, leaked draft document "summary for policymakers", *unpublished*, available at http://www.climatechangenews.com/2018/06/27/new-leaked-draft-of-un-1-5c-climate-report-in-full-and-annotated/

[26] NIWA, n.d., Greenhouse gas measurements, *National Institute of Water and Atmospheric Research (NIWA)*, (online), available at: https://www.niwa.co.nz/our-science/climate/information-and-resources/clivar/gases#emissions, accessed 19 July 2018

[27] Landcare Research, n.d, Methane Emissions, (online) available at: https://www.landcareresearch.co.nz/science/greenhouse-gases/agricultural-greenhouse-gases/methane-emissions, accessed 19 July 2018

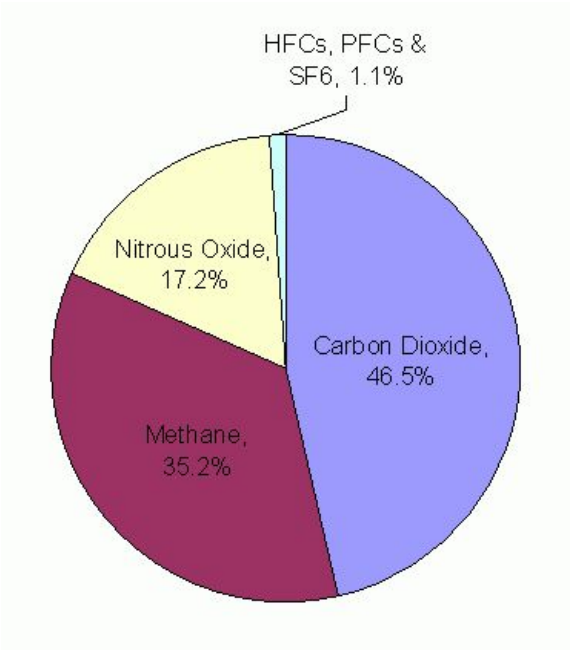

Fig 1: Estimates of the relative cumulative warming effect over 100 years of New Zealand's anthropogenic emissions of each of the major greenhouse gases emitted during 2005. Based on figures from Ministry for the Environment, 2007. [NIWA][28]

The Discussion Document refers to the NZIER work which modeled a reduction in methane (albeit with yet-to-be-invented vaccines[29] - lol) then stabilisation, however methane should be cut and offset based on GWP carbon-equivalence so as to achieve effective zero by 2040. If the Government chooses a reduce-and-stabilise strategy it must be noted that significant reduction in radiative forcing can be achieved by rapid and steep reduction in methane before stabilisation and this is essential to achieving Paris commitments.

Fewer Cows

The Dairy sector has long argued that that there is no easy way to reduce ruminant emissions. Federated Farmers states that it, "strongly opposes livestock emissions (methane and nitrous oxide) being included in the ETS until cost-effective mitigation options are available and our competitors in other countries face similar costs."[30] Their attitude to responsibility for their part in New Zealand's emission profile is largely unchanged regarding the ZCA. The discussion document speaks of animal breeding[31] and fictional future vaccines,[32] however despite options

[28]NIWA, n.d., Greenhouse gas measurements, *National Institute of Water and Atmospheric Research (NIWA)*, (online), available at: https://www.niwa.co.nz/our-science/climate/information-and-resources/clivar/gases#emissions, accessed 19 July 2018
[29] MfE, 2018, Our Climate Your Say: Consultation on the Zero Carbon Bill, Wellington, *Ministry for the Environment*.
[30]Federated Farmers, n.d., Climate Change, *Federated Farmers of New Zealand*, (online), available at: http://www.fedfarm.org.nz/FFPublic/Policy2/National/Climate_Change.aspx, accessed 19 July 2018
[31] MfE, 2018, Our Climate Your Say: Consultation on the Zero Carbon Bill, Wellington, *Ministry for the Environment*.

for reducing the biological gases from agriculture having been a major focus of research in New Zealand, there are no "silver bullets on the horizon yet." (pg. 79)[33] Neither the industry or MFE or the Climate Minister volunteer the obvious fact that reducing actual livestock numbers (particularly dairy cows) would reduce GHG emissions. As the PCE says, "It is axiomatic that the fewer sheep and cattle there are on a farm, the lower the biological emissions will generally be." So far as current technology and knowledge exists (on which we must base climate strategies, rather than hypothetical future technologies), reducing ruminant numbers is the only means of significantly cutting methane emissions. New Zealand, and the world, needs fewer cows. Lowering stock numbers can also potentially benefit farmers as, "lowering the stocking rate could lead to increased farm profit by decreasing the need for costly inputs." (pg. 79)[34] One of these inputs is synthetic fertiliser, which is the other part of the agricultural emissions profile. Our skyrocketing nitrous oxide emissions can be directly attributed to excessive synthetic fertiliser use. Along with reducing ruminant numbers synthetic fertiliser must be significantly cut if we are to achieve Paris goals.

Reducing cow numbers and cutting synthetic fertiliser would have the co-benefit of reducing other forms of pollution from livestock, particularly freshwater pollution, and would also be consistent with World Health Organisation advice on the global health and nutritional benefits of orienting diets away from meat and dairy consumption.

The dairy industry also make the specious argument that net-zero biological methane can only be achieved by eliminating livestock farming altogether. This is not correct as a percentage of livestock emissions can be offset with biological sequestration.

Q3. How should New Zealand meet its targets?

- *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.*

Greenpeace supports the 'firewall' principle: that New Zealand's targets must be achieved by actual cuts in domestic emissions, and not through the purchase or trading of international carbon credits.

In regard to domestic forestry credits, permanent native forests are by far the best option for offsetting emissions, whether those emissions are CO_2, CH_4 or N_2O.

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[32] Ibid, see pg. 54 - "faster agricultural innovation occurs, this sees a one-off innovation of a methane vaccine introduced in 2030 being adopted across all farms, which reduces dairy emissions by 30 per cent and sheep and beef emissions by 20 per cent."
[33]PCE, 2016, Climate Change and Agriculture, *Parliamentary Commissioner for the Environment (PCE)*, (online), available at: https://www.pce.parliament.nz/media/1678/climate-change-and-agriculture-web.pdf
[34] Ibid.

Q4. Should the Zero Carbon Bill allow the 2050 target to be revised if circumstances change?

Yes or No

No. If anything, The Bill should only allow the target to be strengthened, i.e. brought forward, in response to future science which is likely to show the need for greater urgency of action rather than the converse. The target should not be able to be changed other than by amending the Act. To allow otherwise would reduce the credibility of the target and create uncertainty for all sectors of society.

Emissions budgets

Q5. 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?

Yes or No

Yes. Budgets devised by the Climate Change Commission should be legally-binding and set a high ambition which is nevertheless a bare-minimum, and must be achieved or bettered by government within the prescribed time frame.

The legally-binding budgets should be set 15 years in advance so that 3 budgets are in effect at all times. Further, we consider that the Bill should require the Climate Commission to review progress against the budgets every 2-3 years.

Q6. Should the Government be able to alter the last emissions budget (ie, furthest into the future)?

- *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.*

No. The Climate Commission, not the Government, should set the budgets and once set, the budgets should be legally-binding on the Government. However if budgets are bettered, i.e. greater cuts are achieved more rapidly than budgeted, then the Climate Commission should be consulted on reviewing and strengthening subsequent budgets (i.e. the second or third in the sequence). Other than in this circumstance: to strengthen the budgets, we do not support the Government being able to change the last emission budget, or any budget.

There must be a strong principle of no-backsliding if the Zero Carbon Act is to be effective. The Climate Commission should however only offer advice on policy pathways by which budgets could be achieved. Actual decisions on how to meet budgets must belong to the government.

Q7. Should the Government have the ability to review and adjust the second emissions budget within a specific range under exceptional circumstances?

Yes or No

No. For the reasons given in answer to Q6, we consider that the Government should not be able to change the second emissions budget even under exceptional circumstances. Getting our emissions down is the overriding priority.

Q8. 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?

Yes or No

We consider that the following are the key considerations that the Climate Commission should take into account when setting emission budgets:

- the scale of the climate change threat and therefore the need for great ambition in budgets and action,
- a pathway consistent with achieving rapid substantial cuts in gross and cumulative emissions in the first decade,
- budgets consistent with achieving no more than 1.5^{o} C warming by 2100,
- a cap on allowed sequestration offsets from increased forest biomass to ensure gross emissions reductions,
- the latest independent scientific information about climate change,
- Te Tiriti o Waitangi, Tikanga Māori, and Māori interests,
- the human and economic cost of disruptive climatic events globally but in particular across the Pacific,
- the multiple co-benefits of emissions reduction measures,
- New Zealand's international aviation and shipping emissions,
- New Zealand's international legal and diplomatic obligations,

Why negative carbon leakage should not be included

Carbon leakage is one type of spillover effect. Spillover effects can be positive or negative.[35] Negative leakage is commonly used by industry with vested interests, and politicians, to argue for innaction. The effect of assessing leakage is often to assess any intervention or restriction on domestic emissions against the worst case example of an international equivalent industry. It amounts to using the innaction of others as a justification for our own innaction. As a principle we should not take into account negative spillover effects for the exact reason that we cannot control the actions of other countries. Further, we have no authority to call on other nations to act where we are not prepared to act ourselves. Leakage is one mindset that has made New Zealand a climate lagard when we should be leading by example.

Cumulative emissions:

Setting a net zero 2040 target is not sufficient to determine New Zealand makes an effective contribution to stopping global warming - what matters is the total cumulative emissions released between now and the target date. A transition pathway which prioritises steep emission reductions in the 2020s is considerably more impactful than a plan which delays action until the 2030s.

The Zero Carbon Act should recognise the importance of minimising cumulative emissions by (a) including this factor as a mandatory consideration when setting emission budgets; and (b) requiring the Climate Change Commission to provide advice on this issue. We support active consideration of further mechanisms, such as tasking the Commission with calculating New Zealand's 'cumulative budget', and using this to inform our emission budgets and policy plans.

Gross emissions:

A related issue is the extent to which New Zealand should be able to rely on carbon offsets (such as forestry) to meet the target, as opposed to reducing gross emissions. A concerted focus on gross emission reductions must underpin New Zealand's climate change response, particularly in the 2020s and 2030s. Over-reliance on offsets is contrary to the principles of fairness and cost-effectiveness, because it essentially shifts the burden of mitigating gross emissions to future generations, at an increased cost.

[35] IPCC (2007), B. Metz; et al., eds., Glossary A-D. In (section): Annex I. In (book): Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (PDF), Cambridge University Press, Cambridge, U.K., and New York, N.Y., U.S.A.

Government response

Q9. Should the Zero Carbon Bill require Governments to set out plans within a certain timeframe to achieve the emissions budgets?

Yes or No

Yes, the Bill must require Governments to set out policy plans to achieve the emission budgets within a specified timeframe of six months after the budget is set.

Q10. 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?

The most important issues for the Government to consider in setting plans are:

- the gravity of the threat and therefore the need for ambitious, decisive and high-impact policy,
- having strong evidence that the plans will be effective in meeting the budgets,
- working with iwi to ensure Te Tiriti justice,
- ensuring low carbon measures do not compromise biodiversity and human rights,
- sharing the costs of the low carbon transition to avoid disproportionate impacts on vulnerable communities with a principle of just transition.

Climate Change Commission

Q11. 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?

Yes or No

Yes.

When giving advice on an emissions budget, the Commission should be required to recommend sectoral and policy focus areas for the Government to achieve the budget. However the development of the detailed policy needed to meet each budget should be driven by the Government.

Q12. What role do you think the Climate Change Commission should have in relation to the New Zealand Emissions Trading Scheme (NZ ETS)?

- *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.*

The Commission could advise the Government on policy settings in the NZ ETS as one of the recommended pathways to achieving ZCA Budgets. If the government refuses to take the Commission's advice, the Commission should have the power to introduce the policy settings into the ETS in order to achieve ZCA budgets.The Commission needs the power to directly influence the price of carbon analogous to the ability of the Reserve Bank to influence interest rates.

The government must bring agriculture immediately into the ETS. We note that the Coalition agreement reduces agriculture's free emission credits from 100% to 95%.[36] We support reducing the subsidy to agriculture to zero.

Fixing the ETS

The current ETS mechanisms risk undermining ambitions in the ZCA therefore it must be fixed by:
- A cap under the ETS on the amount of sinks the fossil fuel industry can use.
- No international credits and offsets
- No free credits to big New Zealand emitters.
- No ceiling on carbon price
- No Commitment Period 1 carryovers.

Q13. 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?

Yes or No

We support these essential areas suggested:

- climate change policy (including emissions trading)
- resource economics and impacts (including social impacts, labour markets and distribution)
- te Tiriti o Waitangi, te reo me ona tikanga Māori and Māori interests
- climate and environmental science including mātauranga Māori
- risk management
- Engineering and/or infrastructure
- community engagement and communications

[36] Labour and NZ First (2017), Coalition agreement between, *the New Zealand Labour Party and the New Zealand First Party*, pp. 5, available at: https://www.parliament.nz/media/4486/362429780labourandnewzealandfirstcoalitionagreement.pdf

We also believe that, between them, Climate Commissioners should have knowledge of:

- energy,
- public health,
- ecology and the environment.

Adapting to the impacts of climate change

Q14. Do you think the Zero Carbon Bill should cover adapting to climate change?

No.

Existing guidance and policy on adaptation is currently insufficient in NZ and needs to be adequately resourced but this does not sit under the remit of the Zero Carbon Bill. As the name suggests, the Bill's purpose is to reduce emissions to zero..

While preparedness for already inevitable climate impacts is wise, timely effort and expense invested in lessening the severity of climate change substantially reduces the need for, and cost of, adaptation. Mitigation should be the focus of the Zero Carbon Bill.

It is also important to note that the most significant adaptation to climate change is mitigation. Preparing for a severe 3-4^{o} C warming by the end of this century, for example, would be extremely costly and quite likely futile; while investing all efforts, including international diplomatic efforts, in keeping warming within 1.5^{o} C avoids catastrophic impacts and the consequent need for certain adaptations.

A strategy for adapting to climate change impacts should be prioritised and well-resourced by central Government. However, this is not the purpose of the Zero Carbon Bill. There is a risk that including adaptation as part of the Bill will come at the cost of devising and implementing timely and decisive mitigation strategies.

Q15. The Government has proposed a number of new functions to help us adapt to climate change. Do you agree with the proposed functions? Yes or No

See Q14.

Q16. Should we explore setting up a targeted adaptation reporting power that could see some organisations share information on their exposure to climate change risks?

See Q14.

Further Points

Honouring Te Tiriti o Waitangi

Greenpeace agrees with Generations Zero's submission that the Zero Carbon Act must honour Te Tiriti o Waitangi by giving effect to meaningful partnership between iwi and the Crown. The Zero Carbon Act's targets and policies must be made consistently with the tino rangatiratanga of iwi and hapū, as enshrined in Te Tiriti. We believe that our climate change response must be informed by tikanga Māori, Māori worldviews towards climate change, and other Māori interests.

Forest offsets

It is vital that the ZCA is set up in a way to focus attention and action on gross emissions reductions. Forests offsets are problematic because, as the Parliamentary Commissioner for the Environment has noted in his submission to the Productivity Commission, "carbon stored in forests can be released back into the atmosphere. This could happen through intentional decisions to clear forests and not replant, but also through fire, pests, disease and storms decimating parts of the forest estate. Some of these risks will be aggravated by climate change itself."[37]

The PCE goes on to articulate the downside to forest offsets:

> "There is also a significant risk that easy recourse to afforestation could further delay action to reduce gross emissions. Each tonne of emissions offset by forestry is a tonne not reduced at source. Relying too heavily on forestry could lead to continued high levels of gross emissions. Pressure to reduce these after 2050 could entail a more costly and disruptive transition than a deeper transition commenced earlier. The focus should, to the extent possible, be on looking to make lasting reductions in gross emissions. A tonne of emissions avoided and a tonne of emissions offset may be arithmetically equivalent but they can also reflect fundamentally different long term risks and fundamentally different long term value. The long term pay-off from investing in avoidance may exceed the pay-off from investing in offsets – even though the short term pay-off looks the same." (pg. 4)[38]

Greenpeace advocates a cap on the allowable amount of offsets for exactly these reasons.

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[37] PCE, 2018, Response to Productivity Commission Low-Emissions economy draft report, *Parliamentary Commissioner for the Environment (PCE)*, June, (online) available at: https://www.productivity.govt.nz/sites/default/files/sub-low-emissions-387-parliamentary-commissioner-for-the-environment.pdf

[38] Ibid.

International aviation and shipping emissions

It is not clear from the discussion document whether and how the Zero Carbon Act will account for New Zealand's share of international aviation and shipping (IAS) emissions. These emissions must be accounted for, initially on an estimate basis, as is the case under the UK Climate Change Act.

The Zero Carbon Act should require the eventual incorporation of IAS emissions in accordance with standardised accounting rules, and that the Commission must routinely provide advice in this regard. However, until IAS rules are standardised between countries, New Zealand's 'estimated' share of IAS emissions should be taken into account by the Government and the Commission when setting emission budgets. This will mean that emission budgets are set with sufficient headroom to ensure that New Zealand is on track to meet its 2050 target inclusive of IAS emissions. This approach is currently working in the UK.

Legal Accountability

Emission budgets (and other legal duties in the Zero Carbon Act) must be binding and capable of legal enforcement. This will increase certainty for society, and ensure accountability.

We must learn from the oversights of the UK Climate Change Act in which vague drafting means there is considerable uncertainty around what the courts could do.[39] In particular, the Zero Carbon Act should clarify the legal implications of the Government failing to (a) achieve an emissions budget; or (b) set policy plans capable of meeting future budgets. We recommend that the Zero Carbon Act is drafted so as to allow the courts to compel compliance.

[39] See generally Church, J., 2015, "Enforcing the climate change act", *UCL Journal of Law and Jurisprudence,* 4, 109-134.