Submission to Climate Change Commission Draft Advice

From:

Tauranga Carbon Reduction Group

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Greater Tauranga

Our organisations welcome this opportunity to provide feedback to your Draft Advice and wish to convey our appreciation for all the hard work you have done to prepare your report and the numerous appendices. We strongly tautoko the general direction of travel, the slowly increasing emphasis on reducing emissions at source, and the need for a 'just transition'.

Our "one big thing":

We submit that the 'big thing' is the **pace of decarbonisation**. While we accept the general approach of the Commission, we do not believe the speed of emissions reductions is anywhere near sufficient to meet NZ law and our international obligations. There are many layers to that view, which we will discuss.

Firstly, as you know, the purpose of the Climate Change Response (Zero Carbon) Amendment Act is to "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". Leading-edge science is telling us that limiting global warming to 1.5 degrees is not even possible any more, but the presumed intention in that case would be to limit the temperature increase to as close to 1.5 degrees as possible.

It is clear that NZ is not planning to do whatever we can to limit warming to (close to) 1.5 degrees, for the reasons stated below. In the context of the climate emergency declared by the NZ government and many councils, we believe that is not only unacceptable, but also contrary to the purpose of the Act.

The Climate Change Commission's Draft Advice does not outline a pathway to restrict emissions to a level that, in the context of comparable global efforts, would restrict warming to close to 1.5 degrees. In fact, that same science indicates your advice will not even limit warming to 2 degrees, if a similar approach were to be applied worldwide. Whilst the Commission has to consider a number of factors, the overarching goal of the recommendations to the NZ government should be to outline emissions budgets that allow NZ to meet the purpose of the Climate Change Response (Zero Carbon) Amendment Act.

We believe emissions budgets that support the 1.5 degrees goal should have been included in the consultation, so people could choose to support those budgets that would meet (or go closest to meeting) the 1.5 degrees target, for 2030 especially. Given that did not happen, we believe it is critically important to put forward emissions budgets that align with the purpose of the Act and the 1.5 degrees target in your final report to the government. Or at the very least, to offer the government a clear choice in your final report, between what we suggest and the budgets in your Draft Advice. Then, if the government chose the current option out for consultation, that would require the government to explain why it was not aiming to fulfil the purpose of its own Act.

A Better Pathway

Aligning the emissions budgets with the Climate Change Response (Zero Carbon) Amendment Act would align the budgets with the latest IPCC targets for 2030 and with the 'Paris Agreement'. Presumably, that could also align the emissions budgets with NZ's NDC, subject to making clear the different methodologies.

Practically, aligning the NDC (2005), IPCC-UNEP (2010) and international comparisons (1990) with proposed emissions budgets could result in presenting a table along these lines:

Timeframe	**1990** Mt	**2005** Mt	**2010** Mt	**2018** Mt	**2022-25**	**2026-30**	**IPCC 2010-30**	**IPCC NZ* 2018-30**	**Draft CCC 2018-30**	**2031-35**
Gross GHG	63.59	81.27	77.27	78.86				- 30%	- 14.7%	
Net GHG	35.29	55.95	49.36	55.47				- 19%	- 17.2%	
Gross CO2	25.45	37.57	34.96	35.08				- 57%	- 18.3%	
Net CO2	- 2.85	12.24	7.05	11.69			- 58%	- 58%	+ 60% **	
Gross N2O	5.14	7.32	7.07	7.69			- 21%	- 27%	- 8.6%	
Gross F gases	0.93	0.76	1.12	1.90			- 58%	- 75%	- 15.3%	
Long Lived	31.52	45.64	43.14	44.68			N/A	- 75%	- 23.4%	
Non-Biogenic CH4 (CO2e)			1.37	1.0			- 58%	- 37%	- 39.0%	
Biogenic CH4			1.37	1.32			- 30%	- 31%	- 11.4%	

* IPCC upper quartile target based on reductions from 2010 applied to 2018 emissions inventory (or in case of gross and net GHG emissions, 2019 UNEP "Emissions Gap Report" reductions from 2018 are used).

** Based on annual average Mt (table) and estimated annual average LULUCF 2021-2030.

What clearly stands out right now is the huge difference between the 2018-2030 reductions under the IPCC upper interquartile pathways for each gas (yellow) and the 2030 targets that fall out of the Commission's proposed budgets (orange).

We understand the distinction between the CCC's emissions budgets and the NDC, but we think they need to align—with each other and with the IPCC-UNEP 2030 targets. That is not currently the case, which has caused a lot of confusion for many people trying to give an informed response to the Draft Advice.

Domestic Action, Offshore Mitigation and Gross-Net Methodology

We support Budget Recommendation 4:

> …that emissions budgets must be met as far as possible through domestic action, for the purposes of meeting emissions budgets:
>
> a. The limit on offshore mitigation should be zero for the first three emissions budgets.
>
> b. The only circumstances that at this stage would justify the use of offshore mitigation is as a last resort in exceptional circumstances…

The Draft Advice shows a graph indicating that the difference between the two targets (CCC emissions budgets to 2030 and NZ NDC) is offshore mitigation. Which is true, but it glosses over the key point: Why should NZ set emissions budgets that fail to reduce domestic emissions sufficiently to meet our NDC? It also raises the question of what any realistic offshore mitigation will cost, and whether we can be sure it will truly meet the 'additionality' test.

There is a critically important interface between these three factors:

1) The **pace of decarbonisation** for NZ, as a developed country with a history of very high per capita emissions and significant offshoring of manufacturing, which is reflected in the choice between lower quartile, mid-point, or upper quartile pathways and targets.
2) The allowable **level of offshore mitigation**.

3) The **gross-net accounting methodology**.

We believe that expressing a 2030 target as gross-net accounting is a flawed approach and gives unfair advantage to New Zealand. This can be seen from the comparative calculations, based on 2005 levels of 81.29 Mt gross GHG emissions and 55.95 Mt of net GHG emissions, with projected domestic LULUCF offsets using Kyoto Protocol accounting of 10.1Mt in 2030:

Gross-Gross: 81.29 – 30% = 56.9 Mt – 10.1 = 46.8 Mt net emissions target for 2030
or 81.29 – 44% = 45.5 Mt – 10.1 = 35.4 Mt net emissions target for 2030

Net-Net: 55.95 – 30% = 39.2 Mt net emissions target for 2030
or 55.95 – 44% = 31.3 Mt net emissions target for 2030

Gross-Net: 81.29 – 30% = 56.9 Mt net emissions target for 2030
or 81.29 – 44% = 45.5 Mt net emissions target for 2030

These figures obviously change when measured over the decade, as opposed to a single year, whereby the NDC target is 585 Mt (8.1 p.146). However, the principle still holds.

In this context, we believe that NZ is trying to have its cake and eat it, by:

a) Choosing an initial 2030 target based on a year when emissions peaked in this country

b) Choosing a target that is well below the mid-point recommended by the IPCC, despite NZ being a wealthy, high emissions, developed country.

c) Effectively 'cheating the system' by applying the sub-optimal target to a high emissions year and then using gross-net method, without changing the target! Which means NZ's current 2030 NDC will result in a large increase in net CO2 and net GHG (+61%) emissions above 1990 net CO2/GHG levels. Even a 44% NDC would result in about the same net GHG emissions as 1990 and a significant increase in net CO2 since 1990.

d) The CCC putting forward draft emissions budgets of 628Mt for the current decade. These will not only be less than the optimal 2030 NDC of "much more than 35% below 2005 levels by 2030", but will miss the current sub-optimal 2030 NDC target of 30% by a significant margin! That seems to say that although NZ has increased its gross and net emissions massively since 1990 (unlike most other developed countries), NZ can't be expected to utilise the 'low hanging fruit' inside our country to meet its 2030 NDC target, so we'll just have to buy offshore credits. Which is literally an unsustainable strategy on a global scale.

Taken together, these four issues will result in New Zealand having the lowest 2030 net emissions target in the developed world, and no requirement to use domestic reductions to meet that sub-optimal target. Knowing that the only way to meet the purpose of the Act is for a developed country such as NZ to set and then achieve the IPCC upper inter-quartile point.

What's more, the CCC's Draft Advice is still fudging the optimal target: "much more than 35%". You have the data and experts, so please clearly tell the government what is needed to stay closest to 1.5 degrees.

It seems to us that the Commission staff have done some thorough analysis and included some good suggestions in this draft report, but have possibly 'not seen the wood for the trees'. The atmosphere doesn't respond to paper calculations, it responds to the levels of emissions. As shown above, unlike the UK and most EU countries, NZ is still aiming towards significantly increased net emissions from 1990 by 2030.

Please Note: We commend sections of the submissions by Lawyers for Climate Action (especially section 6 "What should our NDC be?", and Geoff Bertram. Both provide more detailed analysis of why our NDC needs to allow for the effects of gross-net accounting. Bertram also has great expertise on NZ's electricity market and the limitations of NZ's ETS, so we support his submission on those issues. We especially support his call for regulation to restrict residential electricity fixed charges, which result in poor social, environmental and climate outcomes.

Our Recommendations:

A. If the gross-net accounting methodology for the NDC is not going to change, it becomes essential to have a much higher emissions reduction target (more than 44%) to compensate for the methodology. The methodology itself is fine. The issue is that an appropriate target (such as the IPCC upper interquartile mid-points) then needs to be recalculated to allow for gross-net accounting.

B. The CCC should recommend that NZ adopts an NDC that results in a drop in gross emissions and net emissions (in gross-gross and net-net terms) from 1990 by 2030, by using a target that meets IPCC recommendations for a developed country - whatever the methodology used to describe the headline 2030 NDC target.

C. The emissions budgets for 2022-2030 should support such an NDC, and not be seemingly disconnected from the 2030 Paris target. Another way of describing this is to say that the NDC should take the same approach you favour for the emissions budgets: "offshore mitigation cannot be used to replace domestic mitigation – Aotearoa must do as much as possible within its own borders first".

The key phrase is "as much as possible". Which can be read in the context of this earlier statement:

> "The Act states emissions budgets must be ambitious but achievable and that the Minister must meet emissions budgets as far as possible through domestic actions."

That points to the core issue: In the context of a "Climate Emergency", does the CCC Draft Advice advocate a realistic plan to do as much as possible to reduce emissions through domestic actions?

Our view is it misses on all three counts:

1) It does not put forward "as much as possible". Examples are the lack of strong direction to councils and government to transform the transport sector by 2030. (e.g. mode share targets for active and public transport modes) That could happen, if a much larger investment was made by government into this year's NLTP. Councils say that the government and CCC are not directing them clearly to make particular investments, so the result is continued investment in high carbon roading projects, ironically with government-led projects at the forefront.

   In the Bay of Plenty region, $3 billion of spending is proposed in the upcoming Regional Land Transport Plan, with more than $1 billion on top of that to be spent on two major highways projects in the Western Bay of Plenty over the next few year. Only 3.5% of that $4 billion is planned to be spent on public transport infrastructure, along with another 3.3% on PT opex.

   Even assuming that miraculously results in fulfilling the CCC's recommended 120% increase in PT mode share, that will merely take the regional PT mode share from well under 1% of trips to less than 2%. That is not transformational, and it is definitely not "as much as possible". It is only appropriate if the goal is to retain investment into new roads (serving primarily single occupancy vehicles) and to restrain investment in other modes - not if the goal is to deal with the 'climate emergency'. Specific higher targets are needed for large urban / metro cities.

2) In parts, the Draft Advice is unrealistic. For instance, the anticipated electricity pricing seems to defy commercial logic. Regarding transport, the uptake of EVs seems highly ambitious and improbable given the accelerated uptake that is assumed.

3) In your own words, the emissions budgets explicitly do not aim to meet NZ's NDC through domestic actions, so for the reasons outlined above, we contend the Draft Advice does not support NZ meeting <u>appropriate</u> "emissions budgets as far as possible through domestic actions". The NDC, the emissions budgets, and drastically reducing NZ's actual gross emissions into the atmosphere all need to line up.

A Precautionary Approach

Finally, all of these important issues need to be viewed in the context of an even larger point: the precautionary principle. Notwithstanding the ability of each of these issues to stand on their own merits, they are all subservient to the uncertainties that exist around the climate models and climate feedback loops.

While some uncertainties may bring upside benefits, resulting in less warming than anticipated, the converse is also true. So far, the trend has been clear: the actual increase in global warming has exceeded projections, and the climate models have understated the impacts of carbon emissions and underestimated the adverse impacts of some of the feedback loops.

Especially because of that, but even if that were not the case, we contend that a precautionary approach should be taken when assessing emissions budgets. NZ has to act on the assumption that 'doing the right thing' may inspire other countries to play their part, so we need to set higher targets, and certainly not lower targets than the IPCC recommends and current science suggests.

Even more so when we recall that the IPCC upper interquartile targets incorporate unproven carbon capture and storage technology, and they have been superseded by the 2019 UNEP "Emissions Gap Report", which states what is needed for a 66% chance of limiting warming to below 1.5 degrees:

> "To limit temperatures, annual emissions in 2030 need to be 15 gigatonnes of CO2 equivalent lower than current unconditional NDCs imply for the 2°C goal; they need to be 32 gigatonnes lower for the 1.5°C goal. On an annual basis, this means cuts in emissions of 7.6 per cent per year from 2020 to 2030 to meet the 1.5°C goal and 2.7 per cent per year for the 2°C goal.
>
> To deliver on these cuts, the levels of ambition in the NDCs must increase at least fivefold for the 1.5°C goal and threefold for the 2°C."

What's more:

> By 2030, emissions would need to be 25 per cent and 55 per cent lower than in 2018 to put the world on the least-cost pathway to limiting global warming to below 2˚C and 1.5°C respectively…"

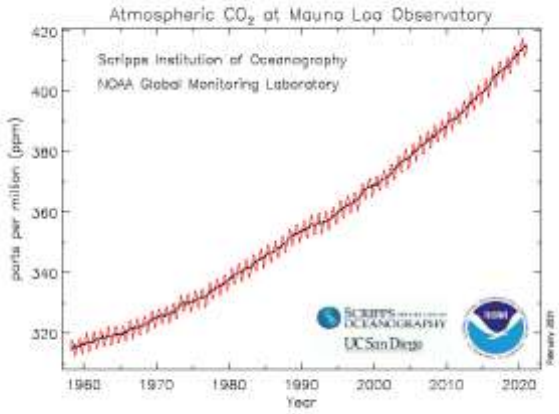
That makes it clear that total greenhouse gas emissions have to be reduced by 7.6% per year (and rising) to 2030, which means a total reduction of 55% from 2018 levels. The 30% NDC would only result in a 28% reduction in gross emissions and 29% reduction in net emissions from 2018 base …<u>if</u> the gross-net accounting methodology was scrapped. With gross-net accounting, NZ could still meet its 2030 target even if net emissions rose slightly.

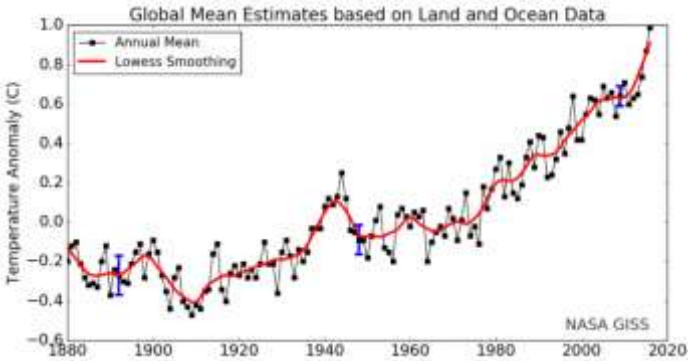
Equally important is the probability of success. Even if NZ's NDC doubled (so we play our part by cutting 2018 emissions by slightly more than 55%), and even if every other country plays its part, and even if no additional feedback loops that increase warming actually occur in reality, and even if carbon capture and storage allows negative carbon emissions in future years, there is <u>still</u> only a 2 out of 3 chance that we will achieve the desired outcome.

We ask the Commission to step out of the 'trees' and look again at the 'wood', and then set emissions budgets that do "as much as possible" to achieve an optimal 2030 target that aligns with limiting warming to as close as possible to 1.5 degrees. Only by taking that approach will the Commission be recommending budgets that comply with the Climate Change Response (Zero Carbon) Amendment Act and that support an optimal living environment for future generations.

NZ needs to respond appropriately to the seriousness of the situation:

1. Carbon dioxide levels and temperature increases are showing no signs of moderation.





2. New Scientist warns we are nowhere near keeping warming below 1.5°C despite the current commitments.
3. The UNEP Emissions Gap Report, Dec 2019, based on IPCC findings, reports:
   a) current global commitments are moving the global temperature increase towards 3.2°C
   b) global emissions need to be cut by 7.6 percent every year for the next decade to meet the 1.5°C Paris target.
   c) That means the overall reduction for 10 years is 55% by the start of 2030
   d) Extending that to 2035 results in a 72% reduction by the end of 2035, less than 15 years from now.

We need to be clear about the consequences and costs of significantly exceeding 1.5°C:

1. Degradation of the biospheres, both land and sea, which undermine our food supplies and other support services, as well as reducing nature's ability to compensate for CO_2 emissions.
2. The degradation of the cryosphere and natural climate stabilisation processes, making climate extremes worse.
3. The risk of triggering any one of a number of tipping points placing climate forces outside of human capability to compensate for.
4. Sea level rises that destabilise societies through flooding, resulting in large climate refugee migrations.
5. Degradation of physical and mental health, for multiple reasons. The decades of inadequate action by authorities, is having a corrosive impact on society, especially the young. Schools are seeking ways of addressing that issue.
6. Recent information confirms the possibility of Tipping Points in the Earth's Climate, relating to ice melting, ocean acidification, tundra melt, and changes in ocean flows. Biological systems may also have their impact in declining carbon absorption with increasing temperature. These may be irreversible and beyond the possibility of being addressed by human action. We need to avoid such risk.
7. These consequences need to be born in mind when considering the cost of action.

What's more, NZ needs to do much better than global average, because:

1. We have emitted far more CO2, per person, than most countries in the world.
2. We are still one of the highest per capita emitters.
3. As a wealthy, developed country, we have the capacity to change much faster than most countries.
4. We have been slow in responding to date, so our emissions have not dropped since 1990, whereas many developed countries have been effectively reducing their emissions.
5. IPCC estimates are based on 66% chance of achieving temperature limits. Surely our descendants deserve a better chance than that, which means NZ must take a precautionary approach.

The “six big issues”:

Our six big issues - the pace of change

Big issues question 1. Do you agree that the emissions budgets we have proposed would put

Aotearoa on course to meet the 2050 emissions targets?

Strongly agree - Agree - Neutral - Disagree - Strongly disagree - Do not know

Please explain your answer (1000 word limit)

We do not. Please see our ‘one big thing’ above. Your table ES1 on p.17 shows a 36% reduction in all gases by 2035, whereas the “Emissions Gap Report” shows a 72% reduction is needed by then. So NZ will still be only doing half what we need to by 2035.

One additional issue we didn’t cover is the targets for reducing methane and nitrous oxide.

Regarding nitrous oxide, it is clear that the longer-term (around 100 years) effects of warming from this gas will compare with the much larger amounts (even in CO2e terms) of methane that are being emitted. Therefore, being a long lived gas that in 2018 comprised 14% of NZ’s net emissions, nitrous oxide needs to be significantly cut.

We can’t see any reason for not adopting the IPCC upper interquartile figure of 21% cut in N2O emissions by 2030. If the answer is technological limitations, you really have to explain why it is so difficult to stop applying fertiliser? Millions of farmers around the world have successfully grown large quantities of food in that way over many, many generations. If the response is financial considerations, there are five responses:

1) An alternative model has been done, is being done, and can be done in a financially viable way here in NZ.
2) Even if there is a cost, that has to be accepted in order to attempt to respond meaningfully to climate change. Given the relatively minimal reduction planned for biogenic methane, the least we could expect from the agricultural sector is to reduce N2O emissions in line with the upper interquartile IPCC target by 2030.
3) Unlike much of the rice and other food grown in other countries, which is needed to prevent malnutrition and even famine, NZ’s nitrous oxide emissions are created in the production of a relatively expensive protein source that is sold on the international market to wealthy consumers. This gives extra weighting to the goal of reducing emissions by the upper interquartile IPCC target for 2030.
4) Even though NZ is a relatively efficient producer of milk and other animal protein, that does not mean it is the optimal thing to produce on Aotearoa’s land mass. Saudi Arabia is a very efficient producer of oil (with a much better ROEI than US fracking, for instance), but that doesn’t mean we want to allow Saudi Arabia to continue to sell vast amounts of oil through to 2050 and beyond. Similarly, although NZ’ farming systems are relatively efficient, the aim has to be for NZ to produce a sustainable amount of dairy and meat, which can be partly defined as emitting a level of N2O that complies with the upper IPCC target.
5) Even aside from the atmospheric emissions, applying large amounts of nitrogen fertiliser has detrimental results to waterways and an overall negative environmental footprint. Which adds another reason for taking much stronger action on nitrous oxide than the proposed emissions budgets.

Regarding biogenic methane, we support the principle in the Climate Change Response (Zero Carbon) Amendment Act and adopted by the CCC of treating short lived gases (CH4) in a different way to long lived gases. However, that does not give a ‘free pass’ to methane emissions, as the short-term effects are so great. Even after 100 years, the effect of methane

persists, due to the warming it creates in the first place, the feedback loops it triggers or supports, and the impact of the increased CO2 that results.

Therefore, while we support the science-based targets approach for 2050, we do not see why the lower end of the range is viewed as adequate. What's more, the 10% reduction in biogenic methane by 2030 was more of a political compromise than a science-based target. The science is clear that the 2030 target should be much higher, with the IPCC upper interquartile (again, the 'fair share' for a developed country such as NZ) being a reduction in agricultural methane of 30% by 2030 (which equates to a 31% reduction from 2018 levels).

The cost of that lower target should not be borne by the atmosphere, but by New Zealanders. That means we need to reduce our other gases by a greater amount than the IPCC outlines, to compensate for the lower 2030 target for biogenic methane set by the Act. Yet the CCC Draft Advice is recommending an 11.4% decrease in total biogenic methane by 2030 and no corresponding increase in the targets for other gases.

Cutting waste emissions by more than 50% is relatively easy to achieve by 2030, if there is the will to make that happen. That means decreasing agricultural methane by much less than 10%. The trade-off should come from higher nitrous oxide cuts, with appropriate government policies to ensure farmers get through this decade without significant hardship, ready to massively reduce methane emissions in the 2030s.

What's more, it is the best strategy to ensure good longer term, sustainable financial outcomes for the NZ agricultural sector. Our agricultural and horticultural products will demand higher prices on the world market if we have a genuinely low emissions (and circular) rural sector.

We need to also consider:

a) Not all production is the same. There is a substantial amount recently developed from corporate farms on marginal lands. Should these businesses be so protected?
b) The international demand is from middle and upper classes adopting unhealthy western dietary habits. Is that what we want to base our nation's rural economy on?
c) While NZ is a major quality exporter, it is a minor player in production. As nations move to minimise their costs, and optimise their dietary habits, are they not likely to protect their own farming communities? Will NZ's markets be sustainable under those circumstances?
d) How seriously have we explored the options in moving animal-based agriculture to horticulture and vegetable proteins?
e) Do we pay sufficient attention to the value gained by our various international expenditures. How much are really in our national interests? We may have to choose!

So while the agricultural sector can stumble along and do the bare minimum by reducing agricultural methane by around 5% or 6% by 2030, we suggest that a clear pathway needs to be highlighted by the Commission, to encourage and support farmers to do more than required and pick up more of the weight. If farmers think it's impossible to reduce stock numbers and make a living, they can talk to many NZ farmers (such as a well-known Katikati farmer) who has done exactly that. If they think they have it tough, then spare a thought for those trying to cut carbon emissions from transport by more than half by 2030, and the millions of complex individual decisions that impact that outcome.

Methane has a very big impact over this critical next 30 years. Cutting methane by more than outlined in the Act would provide great benefit in reducing the chance of tipping points.

Finally, in regards to the use of offshore mitigation to fulfil NZ's NDC instead of just the emissions budgets, it needs to be noted that the issue of 'hot air' credits has not fully disappeared. Indeed, it has become quite difficult to tease out what credits really offer additionality and what ones do not.

Our six big issues - future generations

Big issues question 2. Do you agree we have struck a fair balance between requiring the current generation to take action, and leaving future generations to do more work to meet the 2050 target and beyond?

Strongly agree - Agree - Neutral - Disagree - Strongly disagree - Do not know

Please explain your answer (1000 word limit)

We do not. Please see our 'one big thing' above.

We believe that intergenerational equity is tilted too strongly in favour of past and present generations, and too far away from future generations.

Additionally, we put forward the view that climate change threatens to worsen equity for current generations, especially for groups such as people with disabilities that are already severely disadvantaged. We believe that the suite of recommendations that the CCC makes to government need to ensure fairness and equity for children, the growing number of elderly, tangata whenua, the disabled, low income earners, people with less than median wealth, and others in our communities that are vulnerable.

All that needs to be viewed in the global context. NZ is a relatively rich nation with a population that collectively consumes huge amounts of carbon per capita and lives a wealthy lifestyle. Within Aotearoa, there are many people who are struggling – especially relative to other New Zealanders, but some even in comparison to people in other poorer countries. What's more, it is likely that climate change could make life harder for children growing up in this country in the future.

Therefore, we urge strong, fast action now, and we contend that the required investments into low carbon infrastructure, innovation and technology, and the major share of the charges for low carbon pricing initiatives, should all be primarily borne by the wealthier and highest income earners in this country, in the context of us all being relatively high earners compared to most developing countries.

Our six big issues - our contribution

Big issues 3. Do you agree with the changes we have suggested to make the NDC compatible with the 1.5°C goal?

Strongly agree - Agree - Neutral - Disagree (our changes are too ambitious)- Disagree (our changes are not ambitious enough) - Do not know

Please explain your answer (1000 word limit)

We do not. Please see our 'one big thing' above. A key point is that the current NDC target for 2030 is inappropriate because:

1. A 30% reduction on gross 2005 emissions (a peak year for NZ) is not doing our 'fair share', as the reduction needs to be higher and the base year should be 1990, or 2010 as IPCC used, and certainly not our peak year.
2. Doubly so because it has been applied using gross-net methodology without amending the target to make it a meaningful reduction in net emissions from the 1990 base.

The simplest and best approach is to use the emissions budgets to meet the appropriate NDC by using domestic reductions and offsets, unless there are compelling reasons for an exception to that approach.

Our six big issues - role and type of forests

Big issues 4. Do you agree with our approach to meet the 2050 target that prioritises growing new native forests to provide a long-term store of carbon?

Strongly agree - Agree - Neutral - Disagree - Strongly disagree - Do not know

Please explain your answer (1000 word limit)

We do agree. However, we have a number of concerns around this.

Firstly, the recent research that shows that the temperature peaks for carbon uptake from C3 plants are already being exceeded and could result in forests becoming carbon sources within the next 20 to 30 years. That should give major pause for thought about any carbon reduction pathway that relies to some extent on offsets from forest sinks.

Secondly, in the same way that methane emissions cannot be ignored due to their huge short-term warming impact, fast-growing exotic forests can't be ignored if sequestration is needed within the next couple of decades. In that sense, we support the views of the Parliamentary Commissioner for the Environment and Scion that fast-growing exotics planted in the right place at the right time can still be an important carbon sequestration tool, especially in the shorter term as NZ still emits significant amounts of methane emissions.

Thirdly, while we support native planting, it needs to be viewed in the wider context of reinstating some of the native flora of Aotearoa and the carbon sinks that used to exist in this country – much of it until relatively recently in history. Given that and given the slow rates of growth and corresponding carbon sequestration, it seems best to view such planting as merely a supporting strategy and not as reason to slacken off emissions reductions at source.

Native planting can bring significant benefits in terms of biodiversity, water quality, soil quality, soil carbon, human health, and 'low carbon' products produced from sustainably harvested native trees. As such, we support the planting of more native forests, so long as it is viewed in the context of the potential for (a) the carbon stored in forests to be lost in fires or pests or other damage, and (b) forests to become carbon sources if the Northern Arizona University-University of Waikato research proves to be correct.

Our six big issues - policy priorities to reduce emissions

Big issues 5. What are the most urgent policy interventions needed to help meet our emissions budgets? (Select all that apply)

Action to address barriers - Pricing to influence investments and choices - Investment to spur innovation and system transformation - None of them

Please explain your answer (1000 word limit)

We say all options have to be pursued immediately. If we had to choose the main areas of change, it would probably be a combination of re-setting the ETS, reforming the electricity market, and investing in low carbon transport and urban development infrastructure.

In regards to the latter, this is a highly significant issue in our region. Tauranga has a plan for more urban sprawl and the only way that carbon emissions from transport will reduce is through electrification of the vehicle fleet. Adopting that as the only significant policy to reduce emissions effectively ignores what your staff member said recently about EVs reducing carbon emissions by about 60% over the life of the vehicle, compared to ICE vehicles—which means roughly 40% of emissions will still remain according to the research she quoted.

Even if much less than 40%, EVs are not a zero-carbon solution over a lifecycle analysis, and they may perpetuate investment in high carbon infrastructure at the expense of investment in low carbon active transport and public transport infrastructure. As can be seen here in Bay of Plenty's transport plans, EVs have become the default option for reducing emissions. The tendency is for councils and others to state "we'll invest in multimodal solutions" and then when you analyse the investments, the vast majority of the spend is business as usual, with any carbon targets being left to the government to deliver through incentivising electrification.

It has been shown globally that quality urban intensification can lead to a range of economic, environmental and social benefits. From an economic perspective alone, the long-term infrastructure costs of intensification have been shown to be significantly lower than 'greenfield' sprawl. Additionally, the economic value generated by using land more efficiently is clear.

This needs to be a deliberate shift for NZ urban centres, and has to be supported with appropriate central government led policy and delivery support. It cannot be left to the market alone in the short term. The current NPS on Urban Development will not go far enough.

A massive, covid-like investment in urban intensification to support low carbon housing and transport infrastructure could be a gamechanger. It would:

a) Make a clear statement about NZ's intention to be serious about reducing carbon emissions
b) Change the financial equation, allowing more affordable low carbon options
c) Improve social outcomes while improving accessibility to low energy housing and low carbon transport options

It would need to be coupled with appropriate 'soft' infrastructure and clear education / messaging campaigns (such as the current Gen Less transport campaign) – the so-called 'behaviour change' approach. Most importantly, it needs exemplary community engagement to understand the needs and desires of the people we want to 'buy into' these low carbon solutions.

Finally, the plan to electrify the main trunk railway line between Hamilton and Auckland and the ECMT to Mount Maunganui by 2025 will be applauded by upper North Island councils and probably most New Zealanders. However, given funding constraints at Kiwirail and NZTA, and the time lag to deliver infrastructure, it currently seems unlikely to result in connected electrified railway lines across the Upper North Island by 2025 unless the urgency of this policy is heavily emphasised in your final advice. No-one much seems to have even picked up on this, so we recommend a very clear timeline in the final report.

We also want to see electrification of the railway line from Auckland to Northport and the line to Kawerau added. We believe this should also be implemented by the mid-2020s or as soon as possible thereafter. The Kawerau section of the ECMT line is the most profitable in NZ and has reasonably heavy freight usage, with more growth likely due to water bottling, the PGF investments in the Eastern Bay of Plenty, and the Kawerau Container Terminal in particular. We imagine the benefits of an electrified connection to and from Northport are obvious.

Our six big issues - technology and behaviour change

Big issues 6. Do you think our proposed emissions budgets and path to 2035 are both ambitious and achievable considering the potential for future behaviour and technology changes in the next 15 years?

Strongly agree - Agree - Neutral - Disagree - Strongly disagree - Do not know

Please explain your answer (1000 word limit)

As stated initially under our 'one big thing', we believe they are both not ambitious enough and also based on unrealistic assumptions. Combined, that means they are unlikely to get us anywhere near where NZ needs to be by 2035, let alone 2030.

As an example of unrealistic assumptions, we reiterate our previous comment that the EV uptake pathway seems overly ambitious and unrealistic, and the plan to electrify the main trunk railway line between Hamilton and Auckland and the ECMT to Mount Maunganui by 2025 is unlikely to happen on time, given the lack of funding for Kiwirail and NZTA.

We use transport as an example because virtually all New Zealanders have a chance to participate in actions to move to a low carbon transport system. Whereas very few of us can directly influence the share of renewables in the NZ electricity grid, the shift away from fossil fuels for industrial production, the recapture of methane at landfills, the amount of emissions from agriculture (keeping in mind most of the dairy and meat is exported), and so forth.

While not underestimating the importance of small actions by a large percentage of NZ's population, the 'big game in town' for most individuals, households, and small businesses is clearly transport. What's more, transport accounts for 47% of NZ's CO2 emissions …and rising…so let's round it to half of our CO2 emissions.

Hence we support the 1.5 Project and many others in recommending that massive cuts are required in transport emissions by 2030. At the very least, we should be aiming to deliver the CCC's recommended 2035 target for transport emissions by 2030.

Finally, all of that ignores the massive amount of embedded emissions in imported products that we consume. Factoring in consumption-based emissions gives a much more accurate view of the real impact that New Zealanders have on the atmosphere. Most New Zealanders will be most able to influence their transport emissions and the embedded emissions in the products we consume. Hence those things need to be at the forefront of any messaging about reducing greenhouse gas emissions.

Detailed questions on our advice

The next set of questions are about the recommendations in our draft Advice report.

In total, there are 24 consultation questions, grouped as follows:

Our approach and emissions budgets

• Our approach – the principles we used for our analysis (one question)

• Emissions budgets numbers – including the levels and breakdown by gas (three questions)

Our enabling recommendations

• Our advice on what we need to enable an enduring climate transition (five questions)

Our path to 2035

• Locking in net zero (two questions)

• The path to meeting the budgets (one question)

• An equitable, inclusive and well-planned transition (one question)

The direction of policy in the Government's emissions reduction plan

• Our advice on the actions required for each sector (one question per sector):

o Transport

o Heat, Industry, Power

o Agriculture

o Forestry

o Waste

• Our advice on a multi-sector strategy (one question)

• Our advice on the rules for measuring progress (one question)

Advice on the Nationally Determined Contribution (NDC) and potential reductions in biogenic methane

• Our advice on the NDC (three questions)

• Our advice on potential reductions in biogenic methane (one question)

1. How we developed our advice

Consultation question

1. Do you support the principles we have used to guide our analysis?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (400 word limit)

2. Emissions budgets numbers

Consultation question

2. Do you support budget recommendation 1? Is there anything we should change and why?

Emissions budget 1 (2022 – 2025) Too ambitious About right Not ambitious enough Don't know

Emissions budget 2 (2026-2030) Too ambitious About right Not ambitious enough Don't know

Emissions budget 3 (2031-2035) Too ambitious About right Not ambitious enough Don't know

Please explain your answer (1000 word limit)

3. Breakdown of emissions budgets

Consultation question

3. Do you support our proposed break down of emissions budgets between gross long-lived gases, biogenic methane and carbon removals from forestry? Is there anything we should change, and why?

Gross long-lived Gases Too ambitious About right Not ambitious enough Don't know

Biogenic methane Too ambitious About right Not ambitious enough Don't know

Forestry Too ambitious About right Not ambitious enough Don't know

Please explain your answer (1000 word limit)

4. Limit on offshore mitigation for emissions budgets and circumstances justifying its use

Consultation question

4.Do you support budget recommendation 4? Is there anything we should change, and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

Enabling an enduring climate transition - intro

5. Cross-party support for emissions budget

Consultation question

5. Do you support enabling recommendation 1 on cross-party support for emissions budgets? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

6. Coordinate efforts to address climate change across Government

Consultation question

6. Do you support enabling recommendation 2 on coordinating efforts to address climate change across Government? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

7. Genuine, active and enduring partnership with iwi/Māori

Consultation question

7.Do you support enabling recommendation 3 on creating a genuine, active and enduring partnership with iwi/Māori? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

8. Central and local government working in partnership

Consultation question

8. Do you support enabling recommendation 4 on central and local government working in partnership? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

This is critically important. Government needs to:

a) Resource local government much better, so they can develop and build low carbon transport infrastructure.
b) Issue clear guidelines that show exactly what is required from local government, how it will be funded, and the process to partner with communities.
c) Support low carbon urban development plans and explicitly not support plans that will lead to sub-optimal carbon outcomes.
d) Make community engagement a key component of this work area.

9. Ensuring inclusive and effective consultation, engagement and public participation

Consultation question

9. Do you support enabling recommendation 5 on establishing processes for incorporating the views of all New Zealanders? Is there anything we should change and why?

Fully support (the idea) - Partially support (the plan) - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

Regarding 'Community Initiative' and climate change action, the framework that the government has used in setting up of the Climate Change Commission and the Draft Advice that the Commission has provided treat the public as either subjects (complying with regulation) or as consumers (responding to market signals), but have largely ignored our role as citizens (interested in the nature of society and its future). This neglect of citizenry overlooks the contribution that community initiative can make on how the country responds to climate change.

This is a serious policy deficiency as it overlooks a very powerful influence on outcomes. Just two cases illustrate the point: the anti "fart tax" demonstrations of 2003 which impeded policy on agricultural emissions for at least 15 years, and the extended effort by Generation Zero to establish the Commission which Is not driving policy.

Many more community-based initiatives have had influences, both positive and negative. While 'community' can be interpreted in various ways, it is probably relevant to include individuals, community organisations, businesses and local governments.

How can such initiatives be factored into a national strategy for ambitious climate response?

1. Clear recognition in official documents that community initiatives of various types are critical factors in overall success.
2. Direct recognition of the existence of a wide range of organisations and the contributions that they have made, directly and via media and political leaders.
3. Recognise the importance of community values, national identity and the role of leadership.
4. Development of a data base in which organisations and individuals can register their involvement and capabilities. This should be able to be searched by function and location to facilitate networking.
5. Government &/or Commission to provide regular on-line meetings for the public, discussing government action and potential for community action.
6. Funding to support small trials of programs and the rollout of proven techniques.
7. Support for conferences on common interests where substantial benefits are likely.
8. Support for training programs for leaders and communities.
9. Commission or government initiated public education and engagement to facilitate understanding of climate change, the Bill, implications for the community and how the community can contribute. This process could involve existing organisations of appropriate competence.
10. Education and engagement to involve scenario plans to provide the community with confidence in the overall programs and guidance to the community in their appropriate roles.
11. The Commission to report on equity implications of policy, including the impact on poverty.
12. Surveys be undertaken of public perceptions and attitudes to guide policy and community initiatives.
13. Developing funding systems to support community groups in climate related initiatives.

How to respond to this challenge?

This challenge clearly demands measures that move well beyond the types of regulations and market mechanisms that we have been considering to date. We need a concerted national effort that calls upon all sections of society and all types of skills and effort to move the country to where we need to be.

This will not be completely foreign to us. Much will be learned from the concerted commitment that we experienced in COVID-19 and from the transformation in our mindset that occurred in response to the Christchurch massacre. More will be learnt from the challenges of the world wars. Perhaps a national debate or Citizens' Forum may guide us in how we, as a nation, can best respond.

Factors that could be considered include:

1. Prominent, persistent and continuing presentation from our leaders as to why we need to act and what we need to achieve. This will include:

2. Clear, graphic and convincing explanations of the threats to our future and those of our children. Move beyond targets to "as much as possible".

3. Engage the broader communities, organisations, business, and local government as full partners in responding to this emergency. Engage youth far more effectively.

4. Examine objectively the national interests in the continued emissions of all sectors.

5. Examine the recommendations of the UNEP Emissions Gap Report 2020, particularly on lifestyle changes (pXIV) identifying 2/3 of global emissions are linked to private household emissions and the vast majority of that arises from the wealthy. (The emissions of the richest 1% of the global population account for more than twice the combined share of the poorest 50%.)

6. Develop and understanding of NZ's international role and the impacts of our efforts. This will involve our foreign services to promote mutual international engagement and understanding on climate change.

7. Engage with International developments, WEF Business, government and civil society. See: https://youtu.be/16vVIzxprzw

8. Engage an understanding of social dynamics to drive positive tipping points. For instance, stimulating technical uptake much faster than normal. Such dynamics may be factored into policy to enhance overall response to the climate challenge

9. Engaging true emergency action, where all available resources are focussed on a common target, as in fire or flood. While many authorities have now declared a climate emergency (1910 jurisdictions covering 826 million people) too often substantive action is very limited. The long term, diffuse nature of climate action challenges the concept of emergency.

Whatever the approach, we need to maintain an awareness in our decision making of both the costs and the benefits of acting, or alternately the costs of taking action against the costs of not.

10-11. Locking in net zero

Consultation questions

10. Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (400 word limit)

11. Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (400 word limit)

12. Our path to 2035

Consultation question

12. Do you support the overall path that we have proposed to meet the first three budgets? Is there anything we should change and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

13. An equitable, inclusive and well-planned climate transition

Consultation question

13. Do you support the package of recommendations and actions we have proposed to increase the likelihood of an equitable, inclusive and well-planned climate transition? Is there anything we should change, and why?

Fully support - Partially support - Neutral - Do not support - Do not know

Please explain your answer (1000 word limit)

14. Transport

Consultation question

14. Do you support the package of recommendations and actions for the transport sector? Is there anything we should change and why?

Support all the actions - Support some of the action - Do not support these actions - Do not know - Neutral

Please explain your answer (1000 word limit)

15. Heat, industry and power

Consultation question

15. Do you support the package of recommendations and actions for the heat, industry and power sectors? Is there anything we should change and why?

Support all the actions - Support some of the actions - Do not support these actions - Do not know - Neutral

Please explain your answer (1000 word limit)

16. Agriculture

Consultation question

16. Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change and why?

Support all the actions - Support some of the actions - Do not support these actions - Do not know - Neutral

Please explain your answer (1000 word limit)

17. Forestry

Consultation question

17. Do you support the package of recommendations and actions for the forestry sector? Is there anything we should change and why?

Support all the actions - Support some of the actions - Do not support these actions - Do not know - Neutral

Please explain your answer (1000 word limit)

18. Waste

Consultation question

18. Do you support the package of recommendations and actions for the waste sector? Is there

anything we should change and why?

Support all the actions - Support some of the actions - Do not support these actions - Do not know

- Neutral

Please explain your answer (1000 word limit)

19. Multi-sector strategy

Consultation question

19. Do you support the package of recommendations and actions to create a multisector strategy,

and is there anything we should change?

Support all the actions - Support some of the actions - Do not support these actions - Do not know

- Neutral

Please explain your answer (1000 word limit)

We see major problems with the ETS settings and think those issues will adversely impact on our 2030 and 2035 targets. It is good to see the Commission highlight some recommended changes in section 6.2.6 (pages 131-134), which could go some way to improving the ETS. However, problems will remain and some of us still believe a carbon tax is preferable, with receipts being returned directly to citizens to compensate for the costs of the transition to a low carbon economy, or used to subsidise emission-reducing activities.

As previously mentioned, we commend Geoff Bertram's submission for more detailed analysis.

20. Rules for measuring progress

Consultation question

20. Do you agree with Budget recommendation 5 on the rules for measuring progress? Is there

anything we should change any why?

Support all the actions - Support some of the actions - Do not support these actions - Do not know

- Neutral

Please explain your answer (1000 word limit)

We support most of the recommendations. Due to the limitations discussed in section 7.4, we agree that using production-based emissions is preferable to consumption-based. That said, we encourage clear communications to New Zealanders about the impact of their purchasing decisions on atmospheric emissions, by including consumption-based emissions in inventories and other messaging.

We understand and support in principle the Commission's choice of a modified activity-based framework for land emissions accounting, while reserving our judgment until we see the details of the final methodology.

As mentioned earlier in our submission, we do not support the gross-net methodology used to assess NZ's NDC.

21-23. Our Nationally Determined Contribution (NDC)

Consultation question

21. Do you support our assessment of the country's NDC? Do you support our NDC recommendation?

Fully support - Partially support - Neutral - Do not support (too ambitious) - Do not support (not ambitious enough) - Do not know

Please explain your answer (1000 word limit)

22. Do you support our recommendations on the form of the NDC?

Support - Somewhat support - Do not support (too ambitious) - Do not support (not ambitious enough) - Do not know

Please explain your answer (400 word limit)

23. Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?

Support - Somewhat support - Do not support (too ambitious) - Do not support (not ambitious enough) - Do not know

Please explain your answer (400 word limit)

24. Eventual reductions in biogenic methane

Consultation question

24. Do you support our assessment of the possible required reductions in biogenic methane emissions?

Fully support our assessment - Somewhat support our assessment - Do not support our assessment - Do not know - Neutral

Please explain your answer (1000 word limit)