Submission By

THE NEW ZEALAND INITIATIVE

to the Climate Change Commission

on

Climate Change Commission's draft emission's budget

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New Zealand Initiative submission on draft emissions budget

Thank you for the opportunity to submit on the Climate Change Commission's draft emissions budget ("report") published on 31 January 2021. We thank staff and Commissioners for their public engagement since the release of their report.

The New Zealand Initiative supports Parliament's commitment to emissions targets under the Paris agreement and net zero emissions from 2050.

The Climate Change Response Act establishes the Climate Commission and states its purpose is to mitigate greenhouse gases. We evaluate the Commission's draft report against this statutory purpose.

We support the Commission's proposals to align the Emissions Trading Scheme ("ETS") budget with emissions targets and introduce some form of pricing for agricultural emissions.

Unfortunately, we find little else in the Commission's report that is consistent with its statutory purpose. From an emissions perspective, the Commission's strategy is incoherent. Its sweeping reforms are not justified by its statutory mitigation purpose, and it has not been sufficiently transparent during consultation.

New Zealand's ambitious targets demand a Climate Change Commission focused on emissions, which advocates for a systems approach and is prepared to lean against popular but ineffective solutions to the emissions problem.

Our submission is in three parts:

- The Commission's analysis shows current policies deliver and maintain net zero emission from 2050.
- The Commission has not demonstrated its reforms can reduce emissions, and
- The Commission has not been transparent.

Appendix 1 responds to the Commission's questions. Appendix 2 raises other concerns.

1 Current policies put New Zealand on track to achieve and maintain net zero emissions from 2050

The Commission's analysis suggests that with plausible settings, current policies reduce emissions to net zero by 2050 (p46):

> *[A] NZ ETS unit price of $50… [allows] net zero emissions to be reached with minimal further reductions in gross emissions. The results suggest that Aotearoa could meet the net zero target for long-lived gases with relatively little additional change.*

One of the Commission's main arguments against continuing with current policies is excessive afforestation after 2050. However, the Commission's analysis shows only moderate afforestation is needed after 2050 to maintain net zero emissions with current policies.[1]

In fact, the Commission's analysis suggests New Zealand could maintain net zero emissions after 2050 with low or even zero afforestation. The Commission's analysis conservatively assumes:

- a constant $50 ETS price after 2050
- agriculture pays a carbon price of just $2.50 from 2025 to 2075[2]
- All the carbon stored in trees goes back into the atmosphere after harvest, and
- no use of offshore mitigation.

Relaxing any of these conservative assumptions lowers the afforestation needed to maintain net zero emissions after 2050.

The Commission's analysis shows:

- New Zealand can do none of the Commission's recommendations and deliver and maintain net zero emissions from 2050.
- Current policies deliver acceptable outcomes.

We summarise the results from the Commission's analysis in Table 1.

[1] The Commission's analysis implies the afforestation rate necessary to keep emissions at net zero in 2075 is moderate, below the average afforestation rate in New Zealand between 1990 and 2020. Figure 8.10 in the Commission's report shows net emissions stabilising at approximately 11.6Mt after 2070 under a modified current policies scenario. Based on emissions factors from the Ministry for the Environment (p105), net zero emissions can be achieved after 2070 by planting 12,700 hectares of exotic trees per year. According to the Ministry for Primary Industries, the average rate of exotic afforestation between 1990 and 2020 was 13,500 hectares per year.

[2] The Commission assumes 95% free allocation of emissions units to agriculture.

Table 1: Summary of findings from the analysis by the Climate Change Commission

	Current policies 2050 ETS = $50	**Commission plan 2050**
Delivers net zero long-lived emissions from 2050 onwards	✓	✓
Fully domestic	✓	✓
Complies with Paris agreement	✓	✓
Complies with Zero Carbon Bill/Climate Change Response Act	✓	✓
Carbon price	$50/tonne	$250/tonne
Forest coverage (native+exotic)	11.0M hectares	11.4M hectares
Exotic share of forestry	26%	23%
Exotic coverage of New Zealand land	0.8%	0.7%
Agriculture carbon price	$2.50/tonne[3]	?
Share of reduction in net emissions due to gross emissions 2018-2075	74%[4]	108%[5]
Maximum exotics planting per year required to maintain net zero emissions in 2075[6] (Average annual planting 1990-2020=13,500 ha/year)[7]	12,300 hectares (less if ETS price rises above $50 after 2050; or agriculture carbon price more than $2.50; or offshore mitigation is allowed)	2,300 hectares

Source: Climate Change Commission, New Zealand Initiative analysis

[3] Based on 95% free allocation. Chapter 7, p7.
[4] Figure 8.10. Adjusted to add removals by forestry sufficient to maintain net zero from 2050 to 2075.
[5] Figure 8.9.

2 The Commission has not demonstrated its plan lowers emissions

The Commission recommends:

- Aligning the ETS emissions cap with emissions targets, and
- Transformation of the New Zealand economy to reduce emissions

The Commission proposes a binding ETS cap to reduce emissions. We support this recommendation. However, if the ETS caps emissions, then transformation can have no further effect on overall emissions. This is the widely-recognised by-product of a binding emissions cap. With a binding ETS, other policies merely force emissions reductions through higher-cost channels for no change in overall emissions.

The Commission acknowledges this neutralising effect of the ETS. It nevertheless recommends transformation. The Commission does not resolve this apparent contradiction.

The Commission also fails to acknowledge the shortcomings of a top-down policy approach to reducing emissions, and some of its recommendations appear to have been made without supporting analysis.

The Commission must demonstrate its plan reduces emissions.

2.1 The Commission has not explained how other policies reduce emissions under a binding ETS

We acknowledge political incentives encourage the government to do both the ETS and other complementary policies. However, regardless of the political incentives, the Commission has not established how complementary policies can reduce emissions under a binding ETS.

It is well-established that a binding ETS cap means other policies operating within the cap have no further effect on overall emissions. For example: [8]

> *[I]f a cap-and-trade system has a sufficiently stringent cap then other policies such as renewable subsidies have no further impact on total greenhouse emissions.* — Intergovernmental Panel on Climate Change (IPCC), AR5
>
> *Carbon emissions associated with electricity generation are captured within the EU Emissions Trading Scheme and capped. Therefore any changes in consumption should not affect emissions or the UK's legally binding energy targets.* —UK energy regulator Ofgem explains why its proposal to introduce consumer electricity price caps will not increase overall emissions
>
> *With the beginning of a functioning market for CO_2 emission licences in Europe… [the Renewable Energy Sources Act] serves to subsidise CO_2 emissions in Europe outside the German power plant sector… [The Act's] overall effect on the reduction of CO_2 emissions will be zero… It will then become an ecologically useless but economically expensive*

[6] "Maximum" because a higher ETS price in 2075, or a higher agriculture carbon price, or permanent capture of carbon in harvested trees, or access to offshore mitigation lowers the exotic planting rate that is necessary to maintain net zero emissions after 2050.

[7] Source: MPI.

[8] Full references available in New Zealand Initiative (2019), *Switched On!*

> *instrument and should consequently be abolished.* —Academic Advisory Council to the German Federal Economics Ministry

The Climate Change Commission acknowledges this neutralising effect of the ETS on complementary policies (p131):[9]

> *The prices observed in the NZ ETS will depend on the mix of policies implemented to meet emissions budgets. The more that the Government chooses to complement the NZ ETS with other policies, the more likely it is that the NZU price in the NZ ETS can be lower* ***while still achieving the same overall emissions reductions.****[our emphasis]*

The Commission nevertheless recommends other policies, presumably for reasons other than mitigation.

It is not clear how the Commission's strategy lowers emissions. This cannot be dismissed as merely an academic critique. The Commission's strategy puts New Zealand at risk of committing to an economic transformation that cannot deliver any emissions benefit.

We ask the Commission to provide a step-by-step explanation of the circumstances which will cause non-ETS policies to reduce overall emissions under a binding ETS. The Commission's description of the "waterbed effect" in Chapter 16 of its draft report does not demonstrate emissions reductions by other policies. Its solution appears to be incomplete or incorrect.[10]

This important matter should have the Commission's full attention.

2.2 The Commission does not account for policy failure

The Commission's plan relies on top down policies. Emissions policies vary substantially in their performance. Policies sometimes raise emissions. For example:

- The government is replacing coal boilers which will reduce emissions by more than $1,500/tonne[11]
- The government is replacing LED lights for more than $1,500/tonne[12]
- An EV subsidy scheme spent $27 million to reduce emissions by 891 tonnes, or $30,300/tonne[13]

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[9] The Commission also acknowledges the neutralising effect of the ETS on complementary policies on page 9 of its Introduction evidence chapter and page 5 of chapter 17.

[10] The Commission proposes to avoid the neutralising effect of a binding ETS on other policies by linking the emissions benefits of other policies to the ETS cap. The Commission says each tonne of emissions reduced or removed by a policy lowers the cap by one tonne. This does not circumvent the problem: emissions come down not because of any policy but solely because of the lowered cap. Simply lowering the cap would reduce emissions by the same amount without any policy. Perhaps the Commission anticipates political constraints will bind the ETS in future. If that is the Commission's logic, the onus rests with the Commission to specify the sequence of events it believes will lead to complementary ETS policies reducing overall emissions.

[11] Source

[12] Source

[13] Presentation by Energy Efficiency and Conservation Authority (2020), "Low Emission Vehicle Contestable Fund," 2 December 2020.

- MBIE advised the ban on offshore oil and gas exploration is likely to raise global emissions.[14]

By comparison, the ETS can reduce or remove a tonne of emissions for $37.[15]

Economists generally consider carbon pricing the most effective way to reduce emissions.[16] The distributed and granular nature of emissions advantages decentralised solutions over the top-down approach preferred by the Commission.

Centralised solutions have two shortcomings. The first is information constraints. It is hard to know where in the economy the next tonne of carbon can be reduced or removed for the least cost. Access to this knowledge not only requires information about what emissions occur where, but the value of the activity which produces the emissions and the closeness of low-emissions substitutes. This information is usually not available to policy makers only the individuals doing the activity.

Centralised decisions also suffer from their vulnerability to political influence. We saw this recently in the government's response to the Climate Commission's recommendation to adopt a renewable energy target. The government immediately re-stated its commitment to its 100% renewable electricity policy.

These problems translate into a performance deficit for top-down emissions policies compared with price-based approaches. The deficit is measurable.[17] Unfortunately, the Commission appears to have formulated its top-down strategy without considering the problems with its approach.

The Commission's recommendations give no reason to believe a top-down approach to emissions will perform better in the future. The Commission could have recommended performance evaluations of individual policies, for example, but does not.

If the Commission has not accounted for the limitations of a top-down approach to emissions, it has likely over-estimated the contribution of its plan to emissions targets.

2.3 The Commission has made recommendations without supporting analysis

The Commission appears to have made some of its recommendations without analysing the effects and tradeoffs of each recommendation.

If correct, this would be a breach of good policy practice. Emissions policies are vulnerable to unintended consequences because they usually depend on inducing behaviour changes to reduce emissions. For example, subsidies for renewable energy reduce emissions only by displacing coal or gas generation. As Germany has discovered, it is possible to build

[14] Source

[15] Based on Comm Trade, 24 March 2021.

[16] Gugler, Klaus et al (2021), "Effectiveness of climate policies: Carbon pricing vs. subsidizing renewables," Journal of Environmental Economics and Management, vol. 106, DOI.

[17] For example, see Gugler et al (2020) *ibid*; Parry (2019), "Increasing carbon pricing in the EU: Evaluating the options," *European Economic Review*.

thousands of wind turbines and millions of solar panels and still depend on coal.[18] Emissions policies are vulnerable to unintended consequences, so analysis is essential.

The Commission cannot make claims about the benefits of their recommendations for emissions, wellbeing, or distribution if it does no analysis which shows this. However, well-intentioned emissions policies do not automatically deliver net benefits.

For example, the Commission's proposal to ban new gas connections will, if implemented, likely have competition effects on restaurants. Existing restaurants will continue to have access to gas, while new restaurants entering the market may not. There may be thousands of consequences like this across the economy. It is not clear the Commission has done the work necessary to understand whether the disruption is justified. We have estimated banning new gas connections will deliver trivial emissions benefits.[19]

Given the likelihood of unintended consequences and the risk that recommendations turn into policy before any cost-benefit analysis, the Commission's decision not to subject some of its recommendations to analysis is disappointing.

We must question whether the Commission's approach is responsible.

3 The Commission has not been transparent

3.1 Refusal to release selected assumptions and outputs

We have been impressed by our interactions with the Commission's modelling team and welcome the Commission's release of some inputs and results from its models.

However, we are concerned about the Commission's decision to withhold selected data until the final report is released. The Commission has not provided a convincing explanation for delaying the release of some of its data until after the publication of its final report.[20]

Policies based on flawed assumptions are unlikely to reduce emissions. Transparency is in the public interest because it aids the detection of flaws early in policy development. Transparency is crucial given the onerous nature of the Commission's tasks and the scale of its proposals.

The Commission's decision to withhold data raises the risk of counterproductive policies.

We object in the strongest terms to the Commission's decision to withhold selected data.

3.2 The Commission misrepresents its modelling results

The Commission says its analysis shows current policies "fail to drive meaningful decarbonisation." Its analysis does not show this.

Under the heading "Current policies do not put Aotearoa on the right track," the Commission says (p45):

[18] See New Zealand Initiative (2019), *Switched On!*, Wellington.

[19] Ignoring the neutralising effect of the ETS on the policy.

[20] We have not seen evidence that many of the withheld input assumptions and intermediate calculations are caught by licensing issues.

> *[U]nder current policy settings… net emissions reductions come mostly from increased carbon removals, with 1.1 million hectares of new forest, mostly exotic…*

The Commission's analysis shows that with current policies and a $35 ETS, the scenario referred to in the quoted passage, the reduction in net emissions by 2050 mostly comes from gross reductions (54%), not removals (45%).[21]

The Commission's analysis shows current policies and a $50 ETS delivers net zero in 2050. The Commission says this finding shows (p46):

> *[Current policies] would fail to drive meaningful decarbonisation and instead use up land resources for the purpose of offsetting avoidable emissions*

However, this statement and others like it do not fairly reflect findings from the Commission's analysis, which show:

- Forests cover more land in 2050 under the Commission's plan (11.4 million hectares) than current policies and a $50 ETS (11.0 million hectares).
- The Commission's plan has only a minor effect on exotic trees in 2050, reducing their share of forestry from 26% to 23%.
- Under current policies, 74% of the reduction in net emissions is due to gross emissions reductions by 2075, [22] and
- New Zealand can maintain net zero emissions after 2050 with modest or no afforestation, as we have already noted.

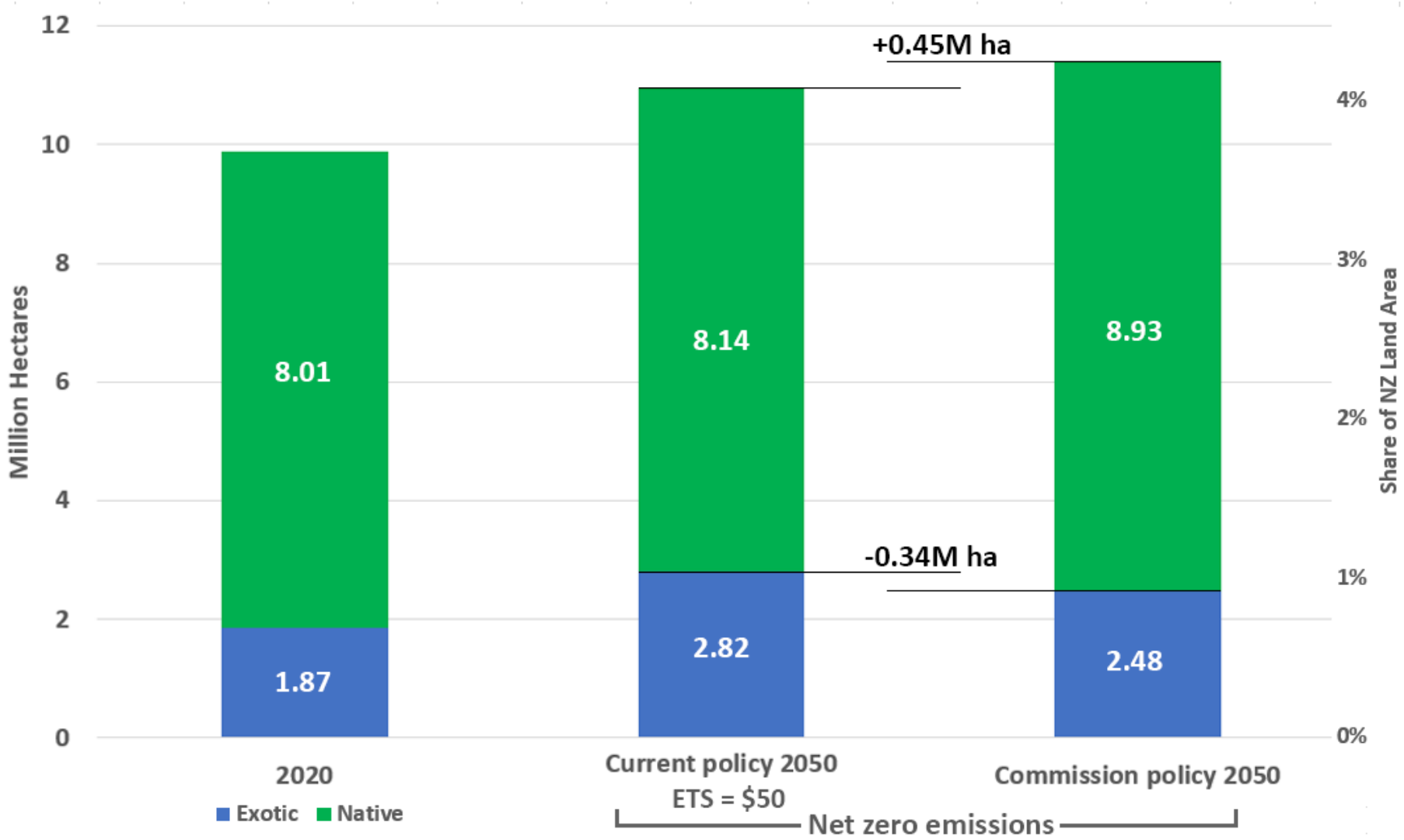
The Commission's analysis suggests exotic trees make comparable contributions to lower emissions under both the Commission's plan and current policies (see Figure 1). The Commission's suggestion that current policies avoid decarbonisation or lead to forestry covering "every square inch"[23] of New Zealand is not supported by its analysis.

[21] Chapter 7, Table 7.1. Also see Climate Change Commission spreadsheet, "2021-Draft-Advice-Report-charts-and-data-v4.xlsx," Chapter 3 sheet.

[22] Based on Figure 8.10 and assuming afforestation forces all the reduction in net emissions to zero.

[23] Comment made by a Commission official during a workshop in February 2021.

Figure 1: Forestry outcomes in 2050 under the Climate Commission's plan (TP3, TP4 scenarios) versus current policies



Source: Climate Change Commission.

3.3 The Commission makes misleading statements

The Commission's draft report includes many misleading or incorrect statements.

For example, we count seven misleading or incorrect statements on the first page of the Commission's executive summary (p10):

1. *Transformational and lasting change across society and the economy will be needed*
2. *Aotearoa will not meet its targets without strong and decisive action now to drive low emissions technologies and behaviour change across all sectors.*
3. *Aotearoa must focus on decarbonising and reducing emissions at the source.*
4. *As a country we can no longer rely on forests to meet our climate change targets.*
5. *Current government policies do not put Aotearoa on track to meet our recommended emissions budgets and the 2050 targets.*
6. *The Emissions Trading Scheme (NZ ETS) alone won't get us to where we need to be.*
7. *Action is needed across all sectors of the economy.*

As we have noted, the Commission states New Zealand can achieve its emissions targets with current policies. Accordingly, "transformational and lasting change" is not needed to meet emissions targets, nor is "strong and decisive action now" or "reducing emissions at source" or "action… across all sectors of the economy". Contrary to point 4, New Zealand can choose to rely on forests to deliver and maintain emissions targets, though it might prefer not to. Contrary to point 5, the Commission states that current policies and a $50 ETS will deliver net zero emissions in 2050 (p46).

The Commission makes many other misleading statements throughout its report.

For example, the Commission says (Chapter 16, p6), "As international research and experience now shows, the most effective and efficient approach is to implement a much more comprehensive and diverse suite of climate policies." However, that is not supported by the research the Commission cites in support of its quoted statement. For example, Canada's Ecofiscal Commission (2017 p IV) says:

> *[T]he mere existence of these problems [specific market adjustment problems eg charging station networks for EVs] is not enough to justify a policy response. The benefits of overcoming these market problems must outweigh the costs of doing so… Governments should therefore clearly demonstrate the complementarity of proposed non-pricing policies prior to their adoption…*

OECD (2013b:7), also cited by the Commission, states:[24]

> *[D]ue to loopholes in emissions trading coverage, technology-specific subsidies may in some cases need to be considered, while technology standards maybe a useful complement to emissions trading schemes… However, the costs and benefits of introducing complementary policies must be carefully examined and should only be introduced when they lower the net cost of reducing emissions for society.*

[24] Cited by Commission at Chapter 16, p6. Citation: OECD (2013b), "Climate and carbon: Aligning prices and policies (OECD Environment Policy Paper No 1)," OECD. Link.

Contrary to the Commission's representations, support for complementary policies in the cited studies are conditioned to assess their costs and benefits.

Throughout its report, the Commission states or implies that its plan is necessary and urgent. These statements are not supported by the Commission's analysis, which shows current policies can deliver our emissions targets.

4 Conclusion and recommendations

The Commission has crossed a fundamental line with its draft recommendations: it has pursued non-emissions goals at the expense of its statutory purpose to lower emissions.

The Commission's analysis shows its plan is unnecessary. New Zealand can achieve and maintain net zero emissions from 2050 with current policies. The Commission's alternative is vastly more costly, which puts our emissions targets at risk. The Commission has not demonstrated its plan delivers benefits to justify its costs and risks. The Commission has not demonstrated it is aware of the limitations of top-down approaches to emissions. As a result, it is probably overly optimistic about the emissions reductions its plan will deliver.

New Zealand needs a Climate Change Commission with an objective to meet emissions targets for the least cost.

As an independent, publicly-funded body, social license for the Climate Change Commission depends on staying within the tram lines directed by Parliament. The Commission has strayed from Parliament's direction by pursuing a different emissions target and allowing non-emissions factors into its decision making.

The Commission has made some of its far-reaching recommendations without supporting analysis. The consultation process has not been sufficiently transparent.

As the Commission prepares its final report, we suggest priority be given to recommendations which raise not lower the likelihood of successful delivery of emissions targets. The Commission should not recommend actions at the expense of its statutory mitigation purpose.

4.1 Recommended principles

We recommend the Commission give effect to its mitigation purpose by embracing the following principles: reduce net emissions at least cost; each tonne of removals and reductions contribute equally to mitigation; optimise for least cost per tonne abated; price cuts more emissions per dollar than command; least cost abatement requires one carbon price; tech- and sector non-neutrality raises costs; neutrality requires good accounting; focus on accounting not technology; early commitment has large costs; analysis reveals performance and avoids unintended consequences; top-down policies sometimes fail; combine first-best emissions policies with transfers to manage equity/distribution; only use second-best policies with awareness of the emissions penalty; always do cost-benefit analysis; from isolation follows leakage; non-emissions goals enter the objective function at the expense of emissions; politics constrains the ETS so maximise political feasibility; test the political feasibility of the ETS; "barriers" are costs; specify and fix the market failure

before overriding; co-benefits are a bonus but do not enter the objective function; use transparency to fix what is broken; measure the emissions performance of everything especially the ETS; offshore mitigation is a safety valve that rules out high-cost and high-risk policies.

4.2 Recommendations

We have two overarching recommendations.

First, the Commission should focus on its core business to reduce net emissions. The Commission should not advise emissions targets can be achieved for a carbon price of $50 per tonne but recommend spending $250 per tonne instead.[25] The Commission should recognise the emissions penalty of taking responsibility for other problems.

Second, the Commission should identify and try to fix what is broken with democratic and market processes governing the trade-offs which worry the Commission before proposing reforms which override those processes. Minor fixes must precede more ambitious proposals.

Our specific recommendations are:

- The Commission should commit to an objective to reduce net emissions at least cost.
- The Commission should recognise it can meet its statutory planning obligation by recommending sound processes rather than the right technologies.
- The Commission should recommend going as far as possible with a strengthened Emissions Trading Scheme
    - Introduce checks and balances to the ETS to give the earliest possible warning of problems.
    - Improve ETS administrative processes and coverage e.g., allow recognition of irregular-shaped plantations in the scheme.
    - Since politics constrains the ETS, develop recommendations which maximise the political feasibility of the ETS, for example
        - Carbon dividends paid to households
        - Soften recommendations to phase out free allocations, recognising the political feasibility risk of exits by large companies, and free allocations have no effect on overall emissions.
- The Commission should shift its focus from technology to accounting
    - Recognise that good accounting provides assurance that emissions reduction is robust and additional. This assurance is sufficient for non-neutrality for technology, sector, and location, which in turn supports more effective emissions reduction.
    - The Commission should make recommendations to accelerate the development of a robust accounting framework which supports access to international co-operation under Article 6 of the Paris climate agreement and the use of genuine international offsets in the ETS.

[25] Commission's data shows a carbon prices of $830 and $860 per tonne in 2050 under TP3 and TP4 scenarios. The Commission says those scenarios are in line with its plan (Chapter 12, p5).

- Commit to measuring the cost per tonne performance of all emissions policies, especially the ETS.
- Do not use the ETS to encourage or discourage different sources of reductions and removals. Instead, maintain a level playing field in the ETS and manage those sources in other ways, for example, legislation.
- Avoid imperatives like “necessary” and “need” to describe recommended actions if the actions are not necessary to achieve emissions targets.
- Calculate the out-of-pocket costs for each household under each scenario, including current policy reference.
- Publish everything, always.
- Provide a full justification for the strategy to combine complementary policies with a binding ETS.
    - If the Commission expects complementary policies to reduce emissions, it should provide a step-by-step explanation for how this will occur. Unfortunately, the Commission’s discussion of the waterbed effect in chapter 16 is incomplete or incorrect.
    - If non-emissions factors justify complementary policies, the Commission should state those factors and show its approach is consistent with the Commission’s mitigation purpose.
- Develop a formal interpretation of the “as far as possible” wording in section 5Z of the Climate Change Response Act. The interpretation should guide when offshore mitigation is appropriately used.

Appendix 1

This part of our submission responds to the Commission's questions and lists other concerns with the Climate Change Commission's draft report.

Response to Commission's questions

1. Do you support the principles we have used to guide our analysis? Is there anything we should change, and why?

No. The Commission should adopt a principle to meet emissions targets for the least cost. That principle is consistent with the Commission's mitigation purpose and can serve as the organising principle of the Commission's operations. This least-cost principle should replace the Commission's seven principles. The Commission should not adopt any principles which conflict with Parliament's mandate to the Commission. The principle to focus on decarbonising the economy is not consistent with Parliament's net emissions target.

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

No opinion. Insufficient modelling information at hand to comment.

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?

No opinion. Insufficient modelling information at hand to comment

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

Strongly disagree. This is inconsistent with the Commission's mitigation purpose and New Zealanders' wellbeing in the short- and long-term.

5. Do you support enabling recommendation 1? Is there anything we should change, and why?

Agree that this is important. Good luck.

6. Do you support enabling recommendation 2? Is there anything we should change, and why?

Disagree. It is not justified under the ETS.

7. Do you support enabling recommendation 3? Is there anything we should change, and why?

Agree.

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

Disagree. It is not justified under the ETS and contrary to the Commission's mitigation purpose.

9. Do you support enabling recommendation 5? Is there anything we should change, and why?

Disagree. Setting and adjusting emissions targets is mainly a political and scientific matter. However, emissions reduction is mostly a technocratic problem. New Zealand does not need forums to reduce emissions, it needs systems. Systems should be the Commission's focus, not organising. There is no need for public forums if there are systems to reduce emissions in a way that is affordable, invisible, and effortless, and can manage adverse distributional effects when they occur.

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

No. "Where possible" is a counterproductive standard for reducing gross emissions, in the sense that the standard is likely to inflate the cost of achieving net emissions targets, possibly substantially, and therefore put the targets at risk.

Parliament has directed the Commission to focus on net emissions. That is important because net emissions mean not every option to reduce or remove emissions needs to be exercised to achieve net zero emissions. We have choices, which implies a need for a decision rule to prioritise alternatives. A rule which considers cost effectiveness is consistent with a mitigation purpose and wellbeing.

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?

No. The Commission has no basis for distinguishing between a tonne of emissions removed by native or exotic trees. From all relevant perspectives – to climate change, to the Paris climate agreement, to the net zero target – emissions removed by native and exotic trees are identical. The Commission should seek as far as possible to remain neutral on the matter of native trees: other public and democratic institutions already have this responsibility, and the Commission should recognise the deleterious effects on mitigation from taking positions. There is no reason to over-ride diverse public preferences on this matter.

Furthermore, the Commission has not made any case that direct intervention is necessary to achieve emissions targets.

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?

Insufficient modelling information at hand to comment.

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?

The Commission has not demonstrated its package increases the likelihood of an equitable or inclusive climate transition. The Commission cannot make any claims about the outcomes of its recommendations if it does not have analysis which demonstrates those outcomes.

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

Strongly disagree. The ETS already covers the transport sector. The Commission has not demonstrated even in principle that its recommendations improve on mitigation by the ETS.

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?

Strongly disagree. The ETS already covers the heat, industry, and power sectors. The Commission has not demonstrated even in principle that its recommendations improve on mitigation by the ETS.

The government may have a role in R&D and removing unnecessary regulatory barriers.

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

No. The Commission's priority should be the introduction of a carbon price on agriculture emissions. This gives the best effect to the Commission's mitigation purpose.

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

We strongly disagree with the Commission's proposal to amend the ETS to regulate the amount and type of forestry. This attacks the basis for least-cost emissions reduction under the ETS by introducing multiple carbon prices. The Commission has not demonstrated current policies lead to distinguishing unacceptable forestry outcomes. Even if the

Commission had shown there is a problem, the solution is not to amend the ETS but to recognise the existing democratic and market mechanisms which already regulate land use, if necessary, amend those mechanisms.

We also disagree with the Climate Change Commission taking any view on exotic and native forests. The Commission should recognise the effect of taking positions on these matters is contrary to its mitigation purpose and recognise public and democratic institutions already govern these matters.

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

Strongly disagree. The ETS already covers the waste sector. The Commission has not demonstrated even in principle that its recommendations improve on mitigation by the ETS. We are concerned to see the Climate Change Commission taking positions on operational matters in landfills, a circular economy, product stewardship and data collection. The Commission has not demonstrated its focus on these matters enhances rather than diminishes mitigation.

19. Do you support the package of recommendations and actions to create a multisector strategy? Is there anything we should change, and why?

Disagree. We support reducing silos in government on the principle that silos prevent mitigation by multiplying the number of implicit carbon prices. However, none of the Commission's proposed actions will reduce emissions if the ETS caps emissions. Please excuse the repetition, but an ETS cap means government agencies can reduce emissions like everyone else by responding to the incentives in front of them. The Commission accepts the ETS's logic in its draft report (p131, Introduction p9, Chapter 17 p5). An ETS which puts a single price on carbon across the economy effectively removes silos. Given a binding ETS, it is up to the Commission to demonstrate how its multisector strategy reduces emissions. While we accept the good intentions behind this recommendation, we cannot support a strategy that will not plausibly contribute to lower overall emissions.

20. Do you agree with Budget recommendation 5? Is there anything we should change, and why?

Agree to the degree that the measures would improve the efficiency of the ETS.

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

No. The Commission's analysis excludes all the factors we would expect to be brought to bear on the question, including costs to New Zealand, strategic and geopolitical

consequences, trade access, reputation, and so on. The Commission's analysis should be capable of showing their conclusion is in New Zealand's interests.

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

No. The analysis needs to show that New Zealand is out of line with other countries' intentions.

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

No. The analysis needs to show that New Zealand is out of line with other countries' intentions.

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

The Commission has not provided sufficient modelling information to comment.

Appendix 2

The high cost of early commitment is ignored

Based on its modelling, the Commission recommends commitments in the near term to various policies, including targets for renewable energy and low carbon fuels, bans of coal, new gas connections and ICE vehicle imports, more distributed generation, and so on.

Each of these recommendations is an early commitment to (or against) a particular technology.

The Commission notes the benefits of early policy commitments, such as reduced stranding risk but seems unaware of the costs of early commitments.

Early commitment destroys the real option to wait. It destroys valuable flexibility, which comes from preserving the option to respond to new information when it arrives in the future. Any case for early commitment should weigh the high cost of forgoing flexibility against the benefits of avoiding further investment in high emissions technologies.

Many of the Commission's recommendations are a bet on a particular technology over competing alternatives. For example, early commitment to electric vehicles and their associated infrastructure is a bet against hydrogen or carbon-neutral synthetic fuels emerging as competitive alternatives. If EVs fail to win the technology race, the Commission's proposal to go early on EV technology will result in stranded assets, a potentially enormous loss.

The Commission acknowledges uncertainty around technologies. On its website, it says, "In modelling, it is difficult to factor in technologies that do not yet exist."[26] We agree. However, the Commission does not recognise that uncertainty raises the cost of early commitments to particular technologies, perhaps tremendously.

Moreover, early commitments are a one-way bet. As a small country, New Zealand is a technology taker. Our decision to invest early in a particular technology will not, in most cases, accelerate innovation in that technology. If New Zealand bets on EVs and is correct, we will pay more for early adoption of a technology we would have eventually adopted anyway. If New Zealand bets on EVs and is wrong, then we potentially lose billions of dollars. Right or wrong, emissions come down by the same amount under the ETS cap.

The Commission should be prepared to identify the upside, which justifies the cost and risk of using policy to make bets on technologies before they are competitive and might not win against competing alternatives.

In essence, the Commission's strategy is a series of a one-way technology bets. New Zealand will lose some of those bets. We can reduce more emissions faster by not making one-way bets, so the Commission needs to justify its early commitment strategy. It is hard to see the upside of this approach.

[26] Link (accessed 1 March 2021).

The Commission should focus on dynamic processes which allow technology commitments to be made over time as information becomes available. The Commission should not be trying to choose technologies now. It should be aware of the incompatibility of that approach with its mitigation purpose. The ETS is one example of a dynamic process.

Commission's early EV strategy does not make sense

We see no upside for New Zealand or the world from the early adoption of technologies before they become cost competitive, including electric vehicles. It is sometimes argued that early adoption of technologies can drive investment, accelerating technology improvements. This argument is not likely to hold in countries which are too small to stimulate global investment in particular technologies.

The Commission acknowledges EVs are currently not competitive and expects EVs to become competitive in the late 2030s (Figure 7.6). Inexplicably, the Commission recommends early adoption of EVs. Accordingly, we cannot see any upside in the early adoption of a technology before it is a competitive source of mitigation. The better strategy is to do other things besides EVs and commit to EVs when (or if) they become competitive.

The Commission recognises politics could constrain the ETS but does not recommend improving political feasibility

The Climate Change Commission correctly recognises political feasibility as the main risk to the ETS. There is some carbon price at which the ETS will not find a majority in Parliament for further increases. This is the political feasibility constraint.

Where the limit on political feasibility sits probably cannot be known in advance. Feasibility depends on many things, including the quality of political management, quality of operations, time horizons, offshore carbon prices, and so on.

The Commission takes the ETS's political feasibility as given, but it can be protected and improved. For example, revenues raised by the ETS could be returned to households as an annual carbon dividend. At current ETS prices and auction volumes, each household could receive more than $500 per year, providing valuable political cover for unpopular effects of the ETS on electricity and fuel prices, for example. Other ways to improve political feasibility might include evaluations which reveal how and where ETS is reducing emissions.

The Commission proposes to phase out free allocations of emissions units. This is not helpful. Free allocations shelter the ETS from the fallout of job losses from the exit of firms due to the carbon price. Under a binding ETS, free allocations do not affect overall emissions, although free allocations can raise the carbon price. It is not clear the Commission has recognised the potentially counterproductive outcome of this recommendation.

The risk to the ETS's political feasibility is largely self-inflicted, resulting from the Commission's modest changes in the tree composition of forests.

Article 6 is there for a reason

Our international agreements and legislation allow offshore mitigation to be used as a last resort to meet emissions targets.[27]

There is no need for a "belt and braces" strategy of both ETS and complementary policies when we can access offshore mitigation in reserve. New Zealand can, in good faith, concentrate on an ETS-only approach, using a strengthened ETS supported by checks and balances to give the earliest possible warning of problems, and avoid the wasteful duplication the Commission seeks.

In a worst-case scenario, where problems emerge with the ETS too late to fix or make compensating adjustments, despite best efforts, New Zealand can reasonably resort to international mitigation and still deliver its targets.[28]

Suppose the Commission does not accept this use of Article 6 as a backstop. In that case, it should say why and then explain how a wasteful approach of doing both the ETS and complementary policies is in New Zealand's interests.

Forestry is dismissed on weak grounds with significant consequences

The Commission acknowledges the effectiveness of planted forests as a carbon sink and the strong incentives that the ETS provides for afforestation.

Despite this, the Commission recommends limiting the use of exotic forests by deprecating their treatment in the ETS and changing land use rules. The Commission wants more native forests instead.

It is difficult to reconcile these recommendations with the Commission's mitigation purpose. According to the Ministry for the Environment, exotic forests capture and store carbon more than six times the rate of native forests per year. Exotics capture more carbon per hectare at maturity.

The Commission's treatment of exotic forests is the foundation for its transformation strategy. That foundation is unsafe:

- The Commission repeatedly argues forest fires, storms and diseases mean forests are not a permanent carbon store. However, since forests sit within the ETS emissions cap, early release of carbon automatically leads (or can be easily made to lead[29]) to compensating reductions in emissions elsewhere in the economy. That neutralises the Commission's concern about the permanence of stored carbon.
- Native forests also catch fire.
- The Commission's plan plants more trees overall (Figure 1).
- The Commission worries about land scarcity because further carbon capture after a forest's first rotation requires afforestation of more land. However, this concern

[27] Article 6 of the Paris climate agreement provides for international co-operation on mitigation. Section 5Z of the Climate Change Response Act also provides limited access to offshore mitigation.

[28] Another option, if exotic forests have been deprecated in the ETS as the Commission recommends, is to return to the status quo of treating exotic forests on a level playing field.

[29] Depending on adverse event rules for forests, which changed recently.

depends on an assumption that all the carbon stored in trees returns to the atmosphere after harvesting. That assumption is questionable. The carbon in harvested wood can be permanently captured. Given the crucial role of exotics in the Commission's plan and the dependence on the assumption that stored carbon goes back into the atmosphere, how did the Commission rule out permanent carbon capture in harvested timber?

- Afforestation is a significant issue in some communities. However, democratic and other processes already govern land use. Processes include council planning, land and commodity markets, and the ETS. Also, Parliament has the option to legislate afforestation limits at any time. The Commission has not made any case for why it is necessary to pre-empt or override these processes.
- It is not clear the Commission has done any analysis or research to check its assumptions behind its treatment of exotic forests, extraordinary given the Commission's proposed reforms depend on deprecating exotics.

For all the Commission's concerns about forestry, its plan has only a marginal effect on exotic forests and plants more trees overall (Figure 1). We find it difficult to accept the Commission's implied argument that such modest changes in land use justify a sweeping economic transformation.

Other concerns about the Commission's strategy

- What the Commission calls "barriers" to the adoption of certain technologies are *costs*, essential inputs into calculations of the cost per tonne performance of policies and technologies. Since the ETS prices carbon, the non-adoption of a technology contains information about the relative merits of that technology for mitigation. Using policy to override that signal and force the adoption of certain technologies despite their merits, what the Commission calls "addressing the barriers" only forces emissions reductions through high-cost channels for zero overall change in emissions.
- We do not understand the coherence of recommending both a) a low- or zero-emissions vehicle fleet and b) re-shaping cities to encourage walking, cycling, and public transport. It is hard to see the emissions benefit of getting people out of zero emissions vehicles.
- The Commission acknowledges the effect of the ETS on investment incentives in forestry. However, the Commission is less forthcoming in acknowledging similar effects of the ETS on investment incentives elsewhere. It is difficult to reconcile these positions. Forestry is a long term investment like other types of investment, it is not clear why investors in forestry might respond to incentives but investors in other assets would not. The case for transformation should consider the changes the ETS is likely to bring about.

The Commission recommends measuring co-benefits but not benefits

The Commission recommends measuring co-benefits of policies but not *benefits*, that is, the actual emissions performance of emissions policies.

Co-benefits are interesting, but a bonus can only ever offer further support for the government's policies. By contrast, measuring benefits is a test of emissions policies.

Benefits also have direct relevance to the Commission's mitigation purpose. Earlier in this submission, we showed wide disparities in the performance of different emissions policies. New Zealand can achieve greater emissions reductions sooner with visibility of the performance of emissions policies. It is unclear why the Commission would only recommend measuring co-benefits.

The Commission should recommend the emissions benefits of each climate change policy is measured on a cost-per-tonne basis.

The Commission does not recommend any evaluation of the ETS

The Commission should recommend regular performance evaluations of the ETS, given:

- The ETS price has quadrupled since 2016.
- Studies in other countries generally find their ETS systems are effective, and
- The Commission's plan is based in part on a view that the ETS is not enough.

It is somewhat disappointing that the Commission would consider recommending a transformation of the New Zealand economy without first checking the effectiveness of existing tools.

Why is the Commission talking about the circular economy?

Or a flexible education sector (p96) and many other issues which have no apparent connection to emissions targets.

Commission misjudges political feasibility

The Commission's recommendation to do both the ETS and complementary policies appears to be based on its expectations about the ETS's political feasibility. We understand the Commission's logic is that ETS prices will not rise to the levels necessary to deliver net zero emissions from 2050. The Commission's proposed transformation seems to rest on this critical assumption. Surprisingly, the Commission has not spent time testing this assumption.

In our view, the Commission under-estimates the ETS's political feasibility and over-estimates the political feasibility of complementary policies.

The Commission believes that non-ETS policies are less visible than an ETS price (Chapter 17, p5). It is not clear it is true. The public reaction to some of the Commission's recommendations after the release of its draft report suggests non-ETS policies are highly visible. In response to the reaction, the government immediately ruled out a ban on gas barbeques after releasing the Commission's report.

The Commission might consider whether its plan to ban the import of ICE vehicles 11 years from now could arouse far greater opposition from households. We do not share the Commission's confidence that a top-down approach to lower emissions which demands substantial sacrifices, will be feasible.

In contrast, we see evidence favouring the political viability of the ETS:

- The ETS price has quadrupled since 2016 with little or no opposition. This may suggest the price rises were anticipated, businesses with exposure prepared accordingly, and households have the necessary flexibility to find green alternatives.
- Overseas research shows instances where an ETS has had a substantial effect on emissions even at low (and therefore politically viable) prices.
- Carbon is currently priced far higher in other countries. The carbon price in Norway is US$140 per tonne, five times above New Zealand. Norway recently announced it would raise the carbon price to US$237 per tonne by 2030. In response, the political opposition in Norway said the government had not gone far enough.[30]
- Timeframes beyond 25 years mean ample warning and a lower likelihood of disruption from a high carbon price.
- After 13 years, the New Zealand ETS is well-established and credible.

The political feasibility of the ETS, and carbon pricing more generally, is plausibly explained by the fact that pricing reduces carbon at a lower cost per tonne abated than policy.

Nothing is certain. The political feasibility of the ETS depends on many things. However, we think the Commission should have more confidence in the political feasibility of the ETS.

The Commission should:

- Do further research on the political feasibility of the ETS.
- Recommend ongoing testing of the political feasibility of the ETS, and
- Recommend actions to maximise the political feasibility of the ETS, for example, a carbon dividend to households.

[30] https://www.reuters.com/article/us-climate-change-norway/norways-plans-to-raise-carbon-tax-draw-oil-industry-ire-idUSKBN29D1BD