Champions for a climate positive, economically thriving and socially just Aotearoa New Zealand

SUBMISSION TO THE CLIMATE CHANGE COMMISSION

2050 TARGET REVIEW, THE 4TH EMISSIONS BUDGET, AND ACCOUNTING FOR EMISSIONS FROM SHIPPING AND AVIATION

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A Summary

1. Pure Advantage appreciates the opportunity to submit on the Climate Change Commission's (**Commission**'s):
   a. Review of New Zealand's 2050 emissions reduction target;[1]
   b. Recommendations on New Zealand's fourth emissions budget (**EB4**) and revisions to emissions budgets 1-3 (**EB 1-3**),[2] and
   c. Recommendations for the inclusion of aviation and shipping emissions in the 2050 target.[3]

2. Pure Advantage is a registered charity led by leaders in business and academia and supported by a collective of researchers and writers who investigate, communicate and promote opportunities for Aotearoa New Zealand to fulfil its potential for green growth.

3. We commend the Commission on the well-considered and clearly articulated manner in which it presents the complexities involved across these consultations.

4. The Commission's independence and considerable expertise is a critical pillar of New Zealand's climate response, ensuring that the decisions the Government takes are sufficiently ambitious, evidence-based, robust, and therefore internationally credible.

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[1] Climate Change Commission, *Review of the 2050 emissions reduction target - Discussion Document*, April 2024 (**Target Review**).
[2] Climate Change Commission, *Draft advice on the fourth emissions budget period (2036-2040), and whether emissions budgets one, two and three should be revised*, April 2024 (**EB4 advice**).
[3] Climate Change Commission, *Review on whether emissions from international shipping and variation should be included in the 2050 target, and if so how*, April 2024 (**Shipping and Aviation Emissions Consultation**).

2050 target should be strengthened

5. The world is not on track to limit global warming to within an average global 1.5 degree Celsius increase, and we agree with the Commission's assessment that New Zealand's contributions to the global effort are insufficient.

6. It is evident that we can, should, and need to, do more to reduce gross emissions more quickly.

7. And we have a duty to future generations, who will inherit the consequences of our choices - and therefore a moral imperative - to do so.

8. We fully support the Commission's initial findings that there has been significant change since the target was set in 2019 that justifies strengthening New Zealand's 2050 emissions reduction target.

9. Such strengthening would require reducing emissions lower than net zero for long-lived greenhouse gases (**GHGs**) and to continue reducing after 2050 to bring temperatures back within a global average 1.5 degrees Celsius increase.[4]

10. Whilst we support a split-gas approach to emissions reduction targets in recognition of the respective warming impacts and atmospheric lifespan of biogenic methane versus other long-lived GHGs, we agree that a combination of changes to the 2050 target's timeframe and reduction levels applicable to both 'baskets' is necessary.

11. The 2050 target should prioritise gross emissions reductions.

12. And it is essential that, as our 'key tool' to address climate change, the New Zealand Emissions Trading Scheme (**NZ ETS**) is re-designed to achieve that.

13. Significant removals will still be necessary, including beyond the operating life of the NZ ETS, to address emissions overshoot.

14. We agree that permanent, biodiverse indigenous forests, alongside other co-beneficial, durable, nature-based removals, can and will need to play a critical role in achieving and sustaining net negative emissions of Co2 shortly after 2050, as well as reversing biodiversity loss and building critical landscape and climate resilience.

15. We agree that New Zealand is fortunate to have these options, which "are much more cost-effective and immediately available than 'carbon storage solutions' being chased around the world."[5]

[4] Target Review, at 24.
[5] Target Review, at 17.

16. Properly incentivising and optimising these durable, high-integrity removals through concerted restoration and reforestation of degraded old growth forests, regeneration across private and public land, as well as new native afforestation ***now*** is a key policy response incumbent on the current Government to effectively deliver, so as to ensure these removals can be realised at the scale and within the timeframes needed.

EB4

17. We encourage the Commission to adopt an emissions budget that best aligns with a 1.5-compatible emissions reduction pathway. The high technology / high systems (**HTHS**) scenarios support a pathway that appears to be most consistent with that goal, and we submit is achievable as required by the CCRA.

18. As the achievement of EB4 is informed by the levels at which EBs 1-3 are set, and "significant change" has occurred since those budgets were set, we agree that revisions to EBs 1-3 are necessary.

Aviation and shipping emissions should be included in the 2050 target

19. We comment only briefly on including aviation and shipping emissions in the 2050 target.

20. As all GHG emissions contribute to global warming, all GHG emissions matter and must be reduced.

21. And as emissions caused by traffic to and from New Zealand are significant and growing, we support the Commission's recommendation that aviation and shipping emissions should be included in New Zealand's 2050 target. Other countries are doing the same.

22. We agree that including these emissions in the 2050 target would be consistent with the purpose of the CCRA, with global efforts under the Paris Agreement to limit global warming to 1.5°C above pre-industrial levels, and with action being coordinated by the international bodies, International Maritime Organisation and International Civil Aviation Organisation. Doing so will have the effect of accelerating action, maximising opportunities, and will minimise market access and international regulatory risks.

23. We acknowledge that the transition complexities for geographically isolated nations like New Zealand, that rely heavily (and, to an extent, unavoidably) on international shipping and aviation relative to other nations, are much greater.

24. Determining an ambitious but equitable contribution to reducing these emissions in light of the policy levers available to address them, particularly for inbound tourism-related aviation and cruise ships, warrants careful consideration, and should reflect genuine transition constraints, opportunities, and the wider risks of problem displacement (for example, in relation to land-use change for biofuel feedstocks) and unintended consequences.

25. On balance, based on the analysis provided, we support the Commission's recommendation for separate gross emissions reduction targets for aviation and shipping respectively.

B Grounds for amending the 2050 target

Statutory context

26. The 2050 target is a key feature of the "*framework by which New Zealand can develop and implement clear and stable climate change policies that—*

(i) contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5°C above pre-industrial levels; and

(ii) allow New Zealand to prepare for, and adapt to, the effects of climate change."

27. By extension then, our 2050 target (and any amendment thereof) should adequately contribute to global 1.5°C-aligned efforts, and allow New Zealand to prepare for, and adapt to, the effects of climate change.

Amending the target: assessing for "significant change"

28. The Commission can only recommend a change to the 2050 target if there has been, or is likely to be, "significant change", to one or more of the criterion set out in section 5T(2)(a) of the Climate Change Response Act 2002 (**CCRA**).

Threshold for significance

29. The requirement for "significant change" acknowledges the need for the 2050 target to be both responsive to evolving circumstances and information, but also relatively stable by reference to a materiality threshold.

30. What constitutes a "significant" change is not defined in the CCRA. As the Commission notes, this is a matter of judgement.

31. The Commission has adopted three cumulative criteria against which it has tested for "significance". A change must be important, consequential *and* notable.

32. Although we support the Commission's argument that a transparent and consistent approach to assessing for significance is desirable, we caution against an overly formulaic approach that may unnecessarily or unintentionally constrain the Commission's ability to assess for significant change and thus the ability to course-correct.

33. One of the Cabinet papers that preceded the amendments to the CCRA shows that then-Minister of Climate Change, James Shaw, envisaged that the the Commission would recommend changes to the target where there has been "significant, measurable, and real changes" to the factors now contained in section 5T(2)(a). Indeed, he anticipated that this

would "most likely be applied in situations where greater reductions are required, to contribute to efforts to limit the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels."[6]

Global action

34. We think the Commission's approach to considering:
    a. Global progress toward limiting the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels; and
    b. The extent to which New Zealand's current 2050 target "contributes to" that effort, and what New Zealand's contribution should be to that effort under international burden-sharing principles;

    is a helpful way to structure an assessment of whether there has been, or is likely to be, a significant change to global action as it relates to climate change.

35. Citing the UN's Emissions Gap Report 2023, the Commission notes that the world is currently heading beyond 1.5° even if all targets and domestic net zero pledges are met (the most optimistic scenario), with only a 66% chance of limiting warming to 2 degrees Celsius.[7]

36. To correct for this overshoot, greater reductions both now and after 2050 will be needed to bring global temperature rise back down to 1.5°C. This requires net negative long-lived GHGs, and further reductions in the rate of short-lived GHGs.

37. Contrary to this requirement, the Commission observes that:
    a. The current target will likely result in New Zealand continuing to emit in a way that contributes to warming after 2050;
    b. There is no requirement for:
        (i) Emissions to be reduced beyond net zero; nor
        (ii) Net zero biogenic methane or to compensate for these through deeper reductions of other gases before or after 2050.

38. This means that New Zealand could still have net positive emissions of 7,00-1,000KtCH4 and an associated contribution to global warming in 2051 and every year after.

39. Such an outcome is not consistent with contributing to global efforts to limit warming to an average increase of 1.5°C above pre-industrial levels. It is also incommensurate with what is expected of New Zealand pursuant to international burden sharing perspectives.

<u>What our competitors are doing</u>

40. Meanwhile, as the Commission observes, other economies are transitioning to producing and consuming low emissions goods. And New Zealand's position as a leader in setting its long term target relative to its peers has changed, with our target now less ambitious than targets

[6] https://environment.govt.nz/assets/Publications/Proposed-Climate-Change-Bill-Cabinet-Paper.pdf, at paras 51-52.
[7] Target Review, at 41.

set by comparable countries and economies, many of which have set net zero all gas targets (including biogenic methane), including those with high biogenic methane emission profiles.

41. In short, we have no reason to be doing less. And indeed every reason to be doing considerably more in light of how heavily we trade on New Zealand's 'clean, green' credentials.

42. We should expect the authenticity of our international brand, and thus our climate action, to be subject to increasing scrutiny. The "economic and reputational risks if international customers think New Zealand is not ambitious enough"[8] should not be underestimated.

43. Nor should the market access risks. Producers in New Zealand's key export markets whose business operations are subject to more stringent emissions reduction targets will take issue if they think New Zealand's target is not ambitious enough and our exporters are therefore obtaining an unfair competitive advantage. We discuss this further below in relation to our obligations under international agreements.

<u>2050 target not an internationally equitable contribution to the global 1.5°C effort</u>

44. We agree that an assessment of New Zealand's contribution to the global 1.5°C goal involves both an assessment of how our current 2050 target *actually* contributes to reducing emissions, as well as an assessment of what our contribution to global action *should* involve.

45. Measured against international burden sharing principles, we support the Commission's conclusion that New Zealand's current 2050 target is inconsistent with:
    a. Equal per capita emissions;
    b. Our relative responsibility for warming;
    c. Our relative capacity and ability to pay; and
    d. The right (of others) to sustainable development.

46. New Zealand is one of the highest per capita emitters in the world. The Commission notes that "[i]f everyone in the world contributed the same level of warming per capita as New Zealand, total warming would peak at around 5 degrees Celsius and decline to around 4.3 degrees Celsius by 2100."[9]

47. If the world followed a 1.5°C-aligned pathway, the Commission has worked out that a target based on equal per capita emissions would require New Zealand emissions to be around 1 tonne Co2e per person by 2050. The current target has remaining biogenic methane emissions from 2050 (and associated contribution to global warming) of between 3 and 4.5 tonnes per person - in perpetuity.

[8] Target Review, at 18.
[9] Target Review, at 41.

48. Thus, our current 2050 target is plainly - and materially - inconsistent with an equal per capita emissions approach. It is also inconsistent with our relative responsibility for warming,[10] which assumes that economies that have emitted more in the past and have economically benefited from doing so will need to reduce their emissions more in accordance with an equal per capita share.

49. Based on our GDP, the Commission concludes that New Zealand's total net emissions for *all* gases would need to reach net zero around 2050 and include ongoing net removals to a small degree in the decades after 2050 to be compatible with our capacity and ability to pay.[11]

50. On a "right to sustainable development" approach, New Zealand's contribution to limiting global warming would require deeper reductions than an equal per capita approach having already realised our basic development needs.[12]

51. We note that this approach would also suggest that much of the allowable global methane budget for a 1.5°C pathway should be reserved for those who are using it to meet their basic survival needs (e.g. from subsistence farming), requiring greater reductions in biogenic methane from wealthier countries like New Zealand.

52. This is particularly pertinent to the Government's proposal to review the methane science and targets for consistency with "no additional warming".

53. We strongly agree with the Commission's warning that changing the biogenic target from the current range (which we agree is insufficient) to "no additional warming" without significantly changing the net zero component (and greater reliance on forestry removals) would mean higher emissions and an increased amount of warming than the current target.[13]

54. We would strongly oppose any weakening of the biogenic methane targets, even with such compensation from other emissions reductions and removals, when the scientific evidence and a range of other considerations demonstrates that New Zealand can, should, and needs to be doing significantly more to reduce our biogenic methane emissions.

Scientific understanding of climate change

55. We agree with the Commission's assessment that there has been a significant change in the scientific understanding of climate change as it relates to impacts, risks and implications of warming. These are increasing and with more severity at lower levels of warming.

56. That this is the case has been well evidenced by increasingly frequent and extreme domestic weather events, including the devastation wrought by Cyclones Hale and Gabrielle in 2023.

[10] We note that the Commission's assessment of New Zealand's historic contribution to global emissions excludes deforestation, the inclusion of which would make New Zealand's historic contribution significantly higher.
[11] Target Review, at 45.
[12] Target Review, at 47.
[13] Target Review, at 48.

57. Such understanding supports the need to do as much as we can as soon as we can, not the least we can get away with.

NZ's economic and fiscal circumstances

58. We consider that greater awareness, understanding, identification, quantification of and exposure to financial-related climate risks, particularly in the wake of Cyclones Hale and Gabrielle, could present a significant change to New Zealand's economic and fiscal circumstances that justifies a more urgent and ambitious approach to addressing both climate mitigation and adaptation.

59. We also question whether the revision to New Zealand's first Nationally Determined Contribution (**NDC 1**) in 2021, and particularly the:

a. Potential cost of procuring considerable offshore mitigation to meet the projected emissions gap between our domestic efforts and NDC 1;
b. Decision not to record NDC 1 as a combination of constructive and contingent liabilities in the Crown accounts (and therefore allocate funds towards meeting this commitment); and
c. Uncertain progress Government has made towards identifying and procuring adequate high-integrity offshore mitigation

constitutes, or will likely give rise to, a significant change to New Zealand's fiscal circumstances.

New Zealand's obligations under relevant international agreements

60. We do not share the views asserted in the legal advice the Commission has received on the implications of New Zealand's obligations under recent free trade agreements (**FTAs**) in relation to climate change, particularly with the European Union (**EU**).

61. Whilst it may be argued that NDCs are not, themselves, legally binding, the effect of clause 19.6 of the NZ/EU FTA is to create directive and sanctionable obligations to effectively implement the UNFCCC and Paris Agreement, including:

a. "[C]ommitments with regard to nationally determined contributions"; and
b. "[T]he obligation to refrain from any action or omission that materially defeats the object and purpose of the Paris Agreement."

62. Whilst we accept that these clauses do not change the nature of New Zealand's obligations under the Paris Agreement, we respectfully submit that they do create sanctionable obligations under the NZ/EU FTA that may be triggered in the event that our climate action, including our 2050 target, is materially inconsistent with an adequate contribution to global 1.5°C efforts.

63. Even if the risk of enforcement action is remote in practice,[14] the commercial and reputational risks associated with potential non-compliance should not be underestimated and present a significant change from 2019 that would justify strengthening the 2050 target.

64. This view is further supported by the recently released advisory opinion of the International Tribunal on the Law of the Sea confirming that anthropogenic GHG emissions comprise marine pollution and are thus subject to a range of specific obligations under the United Nations Convention on the Law of the Sea (**UNCLOS**), to which New Zealand is a State Party. These include the requirement to *take all necessary measures* to prevent, reduce and control marine pollution from anthropogenic GHG emissions.[15]

Technological developments

65. The Commission notes that advances in methane inhibitors for use in agriculture, although currently only available overseas, present a significant change.

66. Although not a technological development *per se*, we question whether advances in the scientific understanding, methodologies, and measurement of emissions reductions and co-benefits associated with regenerative agricultural practices present an actual or likely significant change that would justify amending New Zealand's methane targets.

67. The benefits of regenerative organic farming include increased carbon sequestration, better soil health, more biodiversity, reduced water pollution and more resilience to drought, floods, and pest incursions.[16] It presents a significant opportunity to transform industrial farming practices into a higher value, sustainable, ecologically resilient proposition.

Distributional impacts and equity implications

68. A key purpose of the CCRA is to establish a framework (of and for which the 2050 target is the guiding star) that will inform policies that allow New Zealand to prepare for, and adapt to, the effects of climate change.

69. Those effects are more severe and are happening sooner and more frequently than anticipated when the target was set in 2019.[17] The Commission has identified the scientific understanding of these risks, impacts and implications as a potentially significant change. It follows that the balance of intergenerational equity has significantly changed as a result.

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[14] The fact that the risk of sanctions for non-compliance may be remote should not justify a low ambition approach. That is a very low integrity approach for New Zealand to take, akin to doing 'the least we can get away with' that does not align with New Zealand's international reputation as a good global citizen. It also underestimates the reputational and commercial risks if New Zealand's climate and environmental standards are seen as insufficient.

[15] Pursuant to Article 194, paragraph 1.

[16] https://www.greenpeace.org/aotearoa/campaign/regenerative-farming-revolution/ and https://www.mpi.govt.nz/dmsdocument/52975-Regenerating-Aotearoa-Investigating-the-impacts-of-regenerative-farming-practices refer.

[17] Target Review, at 17.

70. The pace at which we transition is increasingly critical. A low ambition target will compromise the extent to which New Zealand prepares for, and is able to adapt to, climate change, and is likely to exacerbate distributional impacts and inequities.

71. We acknowledge that there are costs associated with transitioning to a low emissions economy and targeted support will be needed for people, businesses, and regions most vulnerable to these.

72. However, the costs and associated impacts of moving too slowly are likely to be higher, particularly for those most vulnerable, with disparities only likely to widen.

73. Put simply, the choice is whether to do the hard thing now, or the much harder thing later.

74. Assessing relative hardship across too short a time horizon risks failing to seize significant opportunities that will put us - and future generations - in a much stronger position to adapt later, when climate impacts may be more severe than they are now.

75. We also know that the cumulative impact of historical, current and unavoidable future warming is essentially 'baked in', such that the degree of adaptive burden on future generations will be much greater.

76. That said, overly pessimistic assumptions about possible future hardships can underestimate the adaptive capacity and natural innovation borne out of necessity, as well as the range of significant opportunities and benefits that will be realised from a more ambitious target (which are likely to more than offset any negative impacts).

77. We also agree that acute challenges and inequities can be overcome through targeted support measures within a comprehensive and coherent policy package.

Principal risks and uncertainties associated with reductions and removals

78. We agree that the risks associated with exotic forestry removals have become more apparent in the wake of Cyclone Gabrielle, and that uncertainties with regard to the permanence and acceptability of exotic forestry removals (particularly those generated by clear-fell plantation forestry operations) have significantly increased since the target was set. In light of the evidence, it is arguable whether those are indeed any longer "uncertainties".

79. The evidence suggests that urgently revisiting the appropriate roles and levels of reliance on removals generated by plantation, 'permanent' exotic, and indigenous forests with regard to relative sequestration rates, storage durability, co-benefits, and socio-cultural acceptability, would be justified.

80. Indeed, we would argue this is well overdue, and should involve properly acknowledging and addressing the role of the NZ ETS in driving perverse outcomes for New Zealand's climate response and our environment.

Social, cultural, environmental, and ecological circumstances

81. We think that the change in relative climate awareness, concern and activism is socially significant, particularly in the wake of last year's severe weather events here in New Zealand. Scenes of climate-related devastation happening across the world are a daily occurrence.

82. The rise of climate litigation as a tool for climate action, both in New Zealand and internationally, is further evidence of this socio-cultural change.

83. We query the position that it is too early to assess for significant change to environmental and ecological indicators, particularly in light of the finding that there has been significant change in the scientific understanding of climate risks, impacts and implications since 2019.

84. We note that Statistics NZ and the Ministry for the Environment report on the state of different aspects of our environment every six months, and our environment as a whole every *three* years.

85. We also query whether there may be cause to consider if significant environmental or ecological changes have occurred across a broader range of indicators (than air and water quality), including the incidence, duration and severity of drought, flooding, and wildfires, as well as native species and habitat loss.

Do the "significant changes" justify changing the target?

86. Once a finding of actual or likely "significant change" has been made, the Commission may recommend amending the target if it is satisfied the significant change justifies it.

87. Like the materiality threshold for "significant change", determining whether amending the target is "justified" is a matter of judgement for the Commission.

88. In undertaking this judgement, it must consider the matters in s 5M of the CCRA, "where relevant".

89. We agree that "justification" is ultimately a question of whether the benefits of amending the target outweigh any negative impacts of doing so (which can be informed by how the target is changed, and managed through the manner in which the Government designs its policies).

90. We acknowledge that the credibility and integrity of the 2050 target is informed - to a degree - by its stability, particularly for the purpose of commitments to long-term investments. Businesses and individuals need to have confidence in it. And that is the purpose of the "significance" threshold.

91. However, the CCRA clearly anticipates and provides for its review[18] in the expectation that circumstances change, and that the target's contribution to, and alignment with, global 1.5°C efforts has a greater effect on a target's credibility, integrity, and ultimately, its effectiveness.

92. Accordingly, we agree that, "if a target is no longer serving its intended purpose, the benefits of making a change may outweigh the consequences",[19] and "[i]f a change to the target is needed, making that change sooner rather than later will increase the time that people and systems have to respond and adjust."[20]

93. The benefits of strengthening the 2050 target include improved air quality; warmer, more efficient and healthier homes and buildings; reduced healthcare costs; maintaining or growing our competitive advantage; and realising a more timely transition and livable future.

94. Furthermore, if low-cost Nature-based Solutions are deployed more quickly and at scale as a key removals tool to supplement and (over)achieve a strengthened gross emissions reduction target and address emissions overshoot, New Zealand will benefit from significant biodiversity, ecological, resilience, socio-cultural and broader prosperity gains.

How should the target be changed?

95. We agree with the Commission's initial findings that the level(s) of emissions reductions should be strengthened, and timeframe for their achievement brought forward.

Is a "net zero" 1.5°C-compatible? Why setting specific levels of gross emissions reductions and removals is justified

96. We further encourage the Government to adopt the Commission's advice to commit to specified levels of gross emissions reductions and removals.

97. In a joint submission with the Environmental Defence Society and WWF-NZ in August 2023 on the review of the NZ ETS,[21] we observed the following:
    a. Our "net zero" and biogenic methane 2050 emissions targets fall short of that which is necessary to achieve a 1.5°C future;
    b. The IPCC's 2018 Special Report found that *reducing emissions to net zero by 2050 is not sufficient* to limit warming to 1.5°C and deep emissions cuts must be made by 2030 for a 50-60% chance of limiting warming to less than 1.5°C; and

[18] The Commission must review the 2050 target "(a) when preparing advice under section 5ZA on setting an emissions budget for an emissions budget period beginning on or after 2036; and
(b) at any other time the Minister requests a review"; section 5S, CCRA.
[19] Target Review, at 28.
[20] Ibid.
[21] https://eds.org.nz/wp-content/uploads/2023/08/EDS-PA-WWF-NZ-Submission-on-Review-of-the-NZ-ETS-August-2023-Final.pdf

c. The Commission has echoed the need for prompt and decisive action to reduce *gross* emissions from *all* sources *as much as possible as soon as possible*, rather than relying on offsetting our pollution.

98. Contrary to this:
    a. Our Government has not specified *any* gross emissions reduction target; and
    b. There is no constraint on the use of removals to meet our "net zero" 2050 target.

99. We noted that in the most recent IPCC Sixth Assessment report, scenarios that limit warming to 1.5°C with no or limited overshoot achieve "net zero" for fossil fuel emissions through over 91% reduction in gross emissions, with most of the residual emissions balanced by permanent geological storage. Only 4% of the initial fossil fuel emissions are balanced by land-use removals in these scenarios.[22]

100. We further observed that, in light of these concerns and aligning with the IPCC's analysis, the Science Based Targets Initiative's corporate Net-Zero Standard "asserts that at least 90% of a 2050 net zero target should be achieved with actual emissions reductions within their value chain, leaving a maximum of 10% that could be addressed through the purchase of offsets."[23]

C EB4

101. The Commission's analysis shows that New Zealand can reduce emissions faster than previously projected and that overall it benefits the country and all of us to do so.

102. In light of this analysis, we submit that, like our 2050 target, the EB4 demonstration pathway should:
    a. Align with what New Zealand's contributions to global 1.5 efforts should be;
    b. Maximise the opportunities and benefits, ensuring we are in the best position, including for climate resilience and adaptation, by taking early and ambitious action; and
    c. Anticipate potential future global expectations and/or new requirements of overseas markets.

103. Accordingly, rather than selecting the midpoint of assumed levels of adoption "for many actions" in the Commission's scenario modelling,[24] we encourage the Commission to set its assumptions, demonstration pathway, and thus EB4, in line with the HTHS scenarios.

104. The level of ambition implicit in adopting the HTHS scenarios may be harder to achieve, but is still realistic and achievable[25] as required by the CCRA for reasons we discuss further below.

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[22] IPCC Working Group 3 Summary for Policymakers, Figure SPM.5.
[23] In Climate Analytics (2023). Why offsets are not a viable alternative to cutting emissions, at 47.
[24] EB4 advice, at 72.
[25] We note that the examples in the HTHS scenario of areas where Government could go further than the EB4 demonstration path do not appear to be unrealistic or unachievable. They include higher modal share of public and active transport, further use of biofuels to decarbonise transport, further land-use change from dairy to horticulture. EB4, at 81.

And doing more now will be more achievable than doing more later, as climate impacts intensify (including as a result of delayed action and insufficient ambition).

105. We should take confidence from the level of climate action, investment, and ambition occurring overseas. We agree with the Commission that uncertainty about the future should not be cause for delay; it can be managed.[26] It is important that New Zealand does not fear, doubt, or obscure both the short and long-term opportunities and benefits with a short-sighted focus on initial transition investment and an overstatement of risks and uncertainties. As the Commission notes, an increasing number of countries have managed to decrease their gross emissions while *increasing* their wealth and incomes.[27]

106. Ultimately, we agree with the Commission: the changes that need to happen across all parts of the economy need to happen at a scale and pace that provides maximum benefits for the country.[28] And our emissions budgets need to set a sufficiently ambitious pathway to achieve that.

Considerations relevant to Commission's assessment of the feasibility, cost and implications of potential abatement options

107. Below we set out some considerations that could influence the feasibility, costs and implications of going further and faster across reductions and removals.

Growth versus sufficiency lens

108. The Commission's model appears to assume that traditional expectations of sustained economic growth, and current production and consumption patterns (albeit with some change to what and how things are produced), will largely continue.

109. However, as competition for raw materials and environmental degradation increases, alongside greater understanding of planetary boundaries and biophysical limits, societal attitudes are increasingly interrogating traditional, BAU growth assumptions. This may have implications for potential abatement options and emissions trajectories.

110. This overarching systems consideration is relevant to a range of modelled assumptions, including (for example) greater societal awareness of excessive or wasteful electricity consumption (as opposed to load management and energy efficiencies), and evolving consumer preferences in relation to plant-based and organic foods, ethically-produced clothing, and repurposed and reusable products.

[26] EB4 advice, at 55.
[27] EB4 advice, at 18.
[28] EB advice, at 84.

Global context, market access and consumer preferences

111. The ambition, progress and policies on climate action in other countries are advancing, with reputational and commercial consequences for New Zealand producers if we fall behind.

112. More stringent international regulatory settings and corporate standards will have the effect of requiring New Zealand businesses, particularly exporters, to evolve to meet them.

113. Already, as the Commission observes, there is a trend towards greater transparency around emissions reporting for companies, and some jurisdictions are increasingly implementing or exploring policy that would seek to restrict market access for products that don't meet emissions standards.[29] Accountability for climate action is now a feature of our free trade agreements.

114. With increasing consumer awareness and scrutiny of sustainability claims, environmental and emissions footprints, and consumer watchdogs alert to greenwashing, it would be commercially prudent for our emissions budgets to be set at a level that will position New Zealand exporters as climate and sustainability leaders. Afterall, this is what our 'clean, green' brand implies.

115. "Consumer preferences" can be a helpful lens through which to assess behaviour change, but is often considered with reference to export markets and products (milk, meat, wool, etc), whereby people are reduced to overseas 'customers' who buy things. It can thus be quite limited or narrow.

116. A better and broader lens may be to ask: how do people (and indeed all living things) want to live in a climate changed world? This kind of question prompts us to think more creatively and ambitiously about realising livable cities, resilient landscapes, and securing wellbeing and prosperity for people and nature. And implementing emissions budgets reflective of those aspirations.

117. A further development in the global context, which we discussed above in relation to assessing for "significant change" vis-a-vis our 2050 target, is the recent advisory opinion of the International Tribunal on the Law of the Sea.[30] It concluded that, under UNCLOS, GHG emissions constitute marine pollution.

118. UNCLOS, to which New Zealand is a State party, includes specific obligations to take all necessary measures to prevent, reduce and control marine pollution from anthropogenic GHG emissions. Although the advisory opinion is non-binding, it suggests that States need to do significantly more to reduce gross emissions than the purpose and object of the Paris Agreement requires.

[29] EB4 advice, at 114.
[30] https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf

119. In combination, these factors are likely to significantly influence domestic action and should be considered within the Commission's scenarios and modelled pathways.

Effect, effectiveness, coherence and stability of policy and regulatory interventions and law reforms

120. The Commission has consistently emphasised the limited effectiveness of the NZ ETS to drive gross or net emissions reductions to achieve the 2050 target beyond the mid-2030s.

121. It warns that, as currently structured, the NZ ETS "is highly unlikely to drive the gross emissions reductions in line with our demonstration pathway (and the sector sub-targets set out in Aotearoa New Zealand's first emissions reduction plan), particularly in a way that can be sustained."[31]

122. Until the overall architecture of the scheme is properly addressed, it will continue to drive extensive exotic monocultural afforestation with poor environmental and carbon storage outcomes.

123. It is unclear what effect the Government's proposals for land-use restrictions on forestry outside the NZ ETS would have on the balance of reductions versus removals, or the ability to influence the integrity and durability of the latter.

124. The effect of the Government's environmentally regressive approach to recent and signalled law reform and policy change risks seriously undermining the pace and scale of New Zealand's climate ambition and potentially constraining future options.

125. Many of these actual or proposed changes directly target, or worse - reverse - effective low emissions outcomes. Among them include removing climate considerations from its land transport policy, scrapping the highly successful Clean Car Subsidy and Government Investing in Decarbonising Industry Fund (without which significant emissions reductions from the development of a new electric arc furnace at New Zealand Steel's Glenbrook steel mill would not have been feasible), and re-opening offshore oil and gas exploration, contrary to the International Energy Agency's repeated warnings that no new oil, gas, or coal fields are compatible with limiting global temperature rise to 1.5ºC.[32]

126. More aggressive gross emissions reductions may be necessary under future budgets to compensate for the backsliding effects of these law and policy changes. As the Commission notes:[33]

> "[D]elays in acting to achieve the emissions reductions needed to meet the emissions budget could intensify negative impacts and delay the availability of opportunities presented by the transition to lower emissions. The greater level of negative impacts is expected because

[31] EB4 advice, at 55.

[32] https://www.iea.org/news/the-path-to-limiting-global-warming-to-1-5-c-has-narrowed-but-clean-energy-growth-is-keeping-it-open

[33] EB4, at 107.

delayed action can require abrupt changes to meet the budgeted reductions, and abrupt changes have greater overall costs."

We further note that these increased costs will arrive at a time when climate impacts are likely to be more intense than they are today.

127. Well-designed regulatory frameworks and incentives, and robust guidelines to support the development of market mechanisms, will be essential to unlocking and mobilising significant forward investment.

Financial quantification of climate and nature-related risks

128. Climate-related financial disclosures, and the emergence of nature-related financial disclosures, are quantifying climate and nature-related risks. This will lead to the divestment of high emissions assets and drive procurement in lower emissions substitutes.

129. A significant climate-related financial risk for the Government is how it intends to meet its NDCs. If the cost of procuring offshore mitigation is high, and/or its integrity or durability questionable, this may drive higher domestic reductions to reduce our exposure to these costs.

130. Increasing climate risks and impacts are driving up insurance costs, encouraging or forcing people and businesses to adapt through investing in resilience.

131. Nature-based Solutions are increasingly seen as relatively low-cost, co-beneficial opportunities to build or restore climate and ecological resilience quickly.

Expertise

132. Adequate investment in the education and training of a highly-skilled green and clean-tech domestic workforce will impact the availability and timing of potential abatement options.

Agriculture

133. We note that the Commission's assumptions focus considerably on the likely availability of technological developments (e.g. methane inhibitors). Although changes in farm management practices are mentioned, we consider more optimistic assumptions should be modelled in relation to the uptake of regenerative agricultural practices, which are not specifically referenced. These may be informed by the challenges of dealing with the physical impacts of climate change, evolving consumer preferences, more stringent international (and domestic) regulatory requirements, and associated market access.

134. Regenerative agriculture significantly reduces the need for, and costs of, external inputs; enhances biodiversity; improves freshwater quality, soil nutrients and animal health; and

increases on-farm carbon sequestration. It is an excellent example of high systems change that will deliver multiple co-benefits with limited downsides.[34]

Native forests and other Nature-based removals

135. We strongly support the prioritisation of deep and urgent gross emissions reductions to keep the average global temperature rise within 1.5 degrees Celsius.

136. We also strongly support the role and need for durable, high-integrity, co-beneficial biological removals to draw down and store historical, current, and future hard-to-abate emissions. We agree that these are low-regret choices and should be leveraged on the pathway to 2050 (without compromising the overall ambition on gross reductions).[35]

137. The Commission has focused on the important role that native afforestation should play, particularly on marginal or highly erodible land. We strongly support that position, noting there are broader opportunities to weave native planting across a diverse palette of other land types and uses, including urban spaces.

138. However, we submit that restoring, reforesting and enhancing New Zealand's biodiverse but degraded old growth native forests - many of which the Director-General of the Department of Conservation has described as on the brink of collapse - has an equally important role to play (consistent with the high systems change scenarios), including within more immediate timeframes and at relatively low intervention costs, whilst also providing a swathe of co-benefits.

139. Among them are considerable carbon sequestration and storage, erosion control, flood mitigation, temperature regulation, biodiversity and habitat restoration, and climate, ecological, landscape, community and economic resilience.

140. In ***Recloaking Papatūānuku***,[36] Pure Advantage, together with Tāne's Tree Trust and a growing alliance of supporters and stakeholders, have outlined the significant opportunities for Aotearoa New Zealand if we restore 2.1 million hectares of native forest across private and public land, adopting a mosaic land-use approach, over the next decade.[37]

141. A key barrier to achieving these opportunities is inadequate incentives and access to forward-investment for permanent native forest restoration, regeneration and afforestation at the scale and pace necessary.

142. The Government will need to address this barrier urgently, not only to enable significant increases in native reforestation and afforestation, particularly at the levels envisaged under

[34] https://www.weforum.org/agenda/2023/01/5-ways-to-scale-regenerative-agriculture-davos23/
[35] EB4 advice, at 55.
[36] https://pureadvantage.org/recloaking-papatuanuku/
[37] With a 30 year plan beginning now, with a focus on ramping up interventions over the first 15 years, and ongoing maintenance.

the HTHS scenario, but other Nature-based Solutions as well, including blue carbon, and wetland and peatland restoration.

143. Accelerating the development of a high-integrity biodiversity or nature-positive payment or credit scheme, alongside policy guidance to drive the development of voluntary advance market funding mechanisms for Nature-based Solutions, would greatly assist.

144. Other barriers that could be addressed relatively easily include:
    a. Enabling Crown pastoral lessees to participate in the NZ ETS;
    b. Accelerating the development of measuring and monitoring techniques and systems to account for additional sequestration gains in pre-1990 permanent indigenous forests from forest management interventions, including by setting a reference level;[38]
    c. Crystallising the financial disclosure of meeting our emissions gap under NDC 1 and allocating some of that future expenditure towards domestic reductions, and removals that can be realised as additional, within the NDC 1 window;
    d. Scaling up extensive weed and animal pest control (including ungulates) across public and privately owned land; and
    e. Better recognising and valuing the sequestration potential and longevity of (specific) native species across longer time periods, including in the NZ ETS.

145. However, we agree with the Commission that caution should be exercised if any new sources of emissions or removals are included in the Government's emissions budget accounting. Only additional and durable removals should be counted, and the inclusion of a new source or sink to the New Zealand GHG inventory should trigger a review of the target to ensure the desired level of ambition remains.

146. In particular, we agree that "[i]f any additional sinks are included, … the Government considers these sinks as additional to the emissions budget rather than as a way to make meeting the emissions budget easier."[39]

147. To this end, we agree with the Commission's recommendations that the Government:
    a. Adopts the principles of additionality and permanence (durability) and includes them as criteria for any removals, along with other key characteristics including removal capacity, measurability, cost and acceptability;
    b. Develops and implements:
        (i) A long-term plan for measuring and monitoring additional sources, sinks and changes in management activities, including how the plan will be funded; and
        (ii) A plan for how Government will manage accuracy and uncertainty risks, limiting the risk that over- or under-estimation will impact long-term emissions trajectories and associated emissions reduction efforts.

[38] EB4 advice, at 149 refers.
[39] EB advice, at 146.

Approach to borrowing and banking

Aim to overachieve in ERPs

148. It is ultimately the role of the Government to "use its policy levers to enable, incentivise, or require changes as appropriate" to achieve EB4.

149. The Commission's notes that the Government will need to encourage a wider set of actions than the minimum necessary to achieve the emissions budget.[40] We agree that aiming to overachieve our emissions budgets (e.g. pursuant to the Government's emissions reduction plans), and ultimately our 2050 target, is preferable and indeed the prudent thing to do. This approach reduces the risk of not achieving them (a buffer for uncertainty), and provides greater flexibility in terms of the options available for meeting future budgets.

150. We also agree with the Commission's caution around ensuring efforts to reduce emissions are not lessened (through 'banking' any reductions achieved surplus to the budget), or by borrowing from future budgets.[41] Doing so could compromise achievement of future budgets and meeting the 2050 target.

Offshore mitigation

151. We support the Commission's continued approach to excluding offshore mitigation for the purposes of meeting EB4, unless exceptional circumstances apply that are unpredictable, unpreventable, and outside the control of Government where domestic measures cannot compensate for emissions impacts.[42]

Revisions to EBs 1-3

152. We agree with the Commission's recommendations to revise EBs 1-3 to reflect recent methodological changes to the New Zealand GHG inventory, to reflect changes to the rates of forest planting (which it assesses to be a "significant change" for the purpose of the CCRA), and to ensure they align with a strengthened 2050 target.

153. We note that the threshold for "significant change" may have been met across other considerations on which the emissions budgets were based (for example, as discussed with reference to reviewing the 2050 target where the relevant considerations are the same or similar (i.e. as between sections 5ZC(2) and 5T(2)(a)).

154. We note that for EB4, the Commission has modelled the largest reductions coming from energy, transport, and agriculture, but observes that "achieving these will rely on significant change happening over EB 1-3."[43]

[40] EB4 advice, at 55.
[41] EB4 advice, at 53.
[42] EB4 advice, at 53.
[43] EB4 advice, at 84.

155. As noted in para 147 above, we further support the Commission's caution and recommendations in relation to the inclusion of new sources of emissions and removals in its GHG inventory as may relate to EBs 1-3. Specifically, we agree that additional removals must not displace gross emissions reductions or jeopardise achieving emissions budgets and targets. The development and implementation of stringent removal capacity, measurability, additionality, permanence, cost and acceptability criteria would be essential in this regard.

D Conclusion

156. We commend the Commission for its analysis across the three consultations. Each involves complexities, uncertainties, risks, trade-offs, and judgement calls.

157. But ultimately, as Commission Chair writes:[44]

> All greenhouse gas emissions matter, whatever sector they are caused by and whichever country they originate from. This is why the global goal – which Aotearoa New Zealand has committed to – is to reduce emissions from all sources significantly and permanently as much as possible, as soon as possible. ***Investors, producers and consumers who lead the charge to reduce emissions will be best placed to benefit from the opportunities.***

158. We agree. And we should set and structure our targets, budgets and policies to drive and support them to do so. It is in New Zealand's best interests to do so.

[44] Shipping and Aviation Emissions Consultation, at 17.