



# Climate Change Response (Zero Carbon) Amendment Bill: Submission to the Environment Select Committee

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## Submitter type

Independent non-profit research organisation

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## Request for oral submission

Catherine Leining and John McDermott would like to provide an oral submission to the Environment Select Committee.

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## Summary of key recommendations

We strongly endorse the intention, direction, and overall framework of the Climate Change Response (Zero Carbon) Amendment Bill (ZCB). However, key aspects need to be improved to ensure it delivers sufficient policy ambition and certainty to unlock transformational investment and ensure a strategic and just transition for New Zealand's economy in line with the 1.5°C global temperature goal in the Paris Agreement. Cross-party support is essential for the success of this legislation – and New Zealand's pathway to decarbonisation. We call on all Members of Parliament to stand together in passing and implementing a strong and effective Act that provides clear long-term direction through a 2050 target, a framework for evidence-based decision-making and accountability on emissions budgets and plans, and establishment of an independent Climate Change Commission.

We recommend the following changes:

### Policy framework

1. Improve the purpose statement to explicitly address pathways for domestic mitigation and adaptation that achieve desirable outcomes for New Zealand while delivering on our commitments under the Paris Agreement.
2. Clarify the scope of “climate change policies” covered by this legislation and the relationship to other policies and legislation, especially the Resource Management Act
3. To safeguard climate outcomes, require remedies for failure to achieve the 2050 target or an emissions budget, and for failure by the Minister to set an emissions budget and/or to prepare, publish, and implement an emissions reduction plan, national climate change risk assessment, or national adaptation plan
4. Require departments, Crown entities, and regional and territorial authorities to take the 2050 target and emissions budgets into account in the exercise or performance of public functions that affect New Zealand's contribution to climate change
5. Require Ministerial guidance to departments on taking account of the 2050 target and emissions budgets; extend the scope of this directive to Crown entities as well as regional and territorial authorities; and require public reporting of progress with implementation
6. In assessing economic impacts of climate action, shift the policy focus from a “least cost” to a “highest value” transition, evaluate returns on investment over a long time horizon, and balance the needs of current and future generations, both in New Zealand and globally

### 2050 target and emissions budgets

7. Align New Zealand's mitigation ambition with a global temperature goal of 1.5°C under the Paris Agreement
8. Enable all targets to serve as floors, not ceilings, for domestic mitigation effort and accommodate the potential for net-negative-emission pathways both pre- and post-2050
9. Retain the use of the split-gas 2050 target as well as a 2050 target range for biogenic methane (subject to review)
10. Extend the split-gas approach to emissions budgets (currently defined on an all-gas basis)

11. Provide for a limit on forest removals used to meet the 2050 target and emissions budgets for greenhouse gases (GHGs) excluding biogenic methane, to be informed by advice from the Climate Change Commission
12. Clarify how banking, borrowing, and overseas mitigation applicable to emissions budgets would affect target-year accounting
13. Limit banking across emissions budget periods to that required for proper function of the New Zealand Emissions Trading Scheme (NZ ETS)
14. Remove or further limit borrowing between emissions budget periods
15. Limit the use of overseas mitigation for emissions budgets to remedy a compliance shortfall, have the Minister set an absolute quantity limit at the time of emissions budget notification based on advice from the Commission, and clarify the relationship between this limit and overseas mitigation used to back units issued under the cost containment reserve in the NZ ETS
16. Signal mitigation ambition and require monitoring for New Zealand's cumulative domestic emissions, consumption emissions, and international transport (aviation and shipping) emissions
17. Support reductions in cumulative emissions by designating deadlines for peak emissions, adding a 2030 sub-target for domestic gross and net GHG emissions excluding biogenic methane, and requiring progressive ambition of emissions budgets

#### Emissions reduction plans

18. Provide for the Climate Change Commission's advice on emissions reduction plans to focus on high-level policy direction, leaving government with responsibility for in-depth policy development and departmental and public consultation on political decisions
19. Require emissions reduction plans to be implemented (not just prepared and published) by the Minister, and to address policy pathways toward the 2050 target as well as in the each emissions budget period
20. Coordinate and streamline public consultation on emissions budgets, emissions reduction plans, and government sector strategies, policies, and plans where possible

#### Adaptation

21. Make government responsible for all national climate change risk assessments, not just the first one, and clarify the process for government collaboration with regional and territorial authorities and consultation with iwi and Māori in the development of national climate change risk assessments and national adaptation plans
22. Expand the scope of national climate change risk assessments to include the potential impacts of climate change on New Zealand's export markets and supply chains as well as global security and migration
23. Expand the scope of national climate change risk assessments and national adaptation plans so the assessment of significant risks and policy responses covers a long-term time horizon, in addition to the next six-year period
24. Align organisational reporting obligations for adaptation with other reporting requirements where possible, redirect reports to a department or Crown entity rather than the Minister, and clarify the consequences for failure by reporting organisations to achieve and/or report progress with implementation

## Climate Change Commission

25. Empower and resource the Climate Change Commission to maintain the independence, credibility, and weight of its advice, and resource government departments to respond to the advice of the Commission
26. Require the Minister to secure a recommendation from the Commission before revising the 2050 target, and to explain departures from the Commission's advice before revising the 2050 target and finalising or revising an emissions reduction plan
27. Extend the scope of advice from the Commission to include: (a) the social cost of GHGs and target-consistent emission prices in the New Zealand context, (b) the potential and remedies for emissions leakage (distinct from production leakage) overseas by key industries, and (c) limits on forest removals used to help meet the 2050 target and emissions budgets
28. Extend the functions of the Commission to include: (a) public education on climate change and New Zealand's response, and (b) assessment and improvement of New Zealand's capability to model the economic impacts of climate change policies
29. Extend the scope of monitoring by the Commission to include New Zealand's cumulative emissions, consumption emissions, and international transport (aviation and shipping) emissions as well as key performance indicators relevant to long-term low-emission transformation of each sector of the economy and performance of the NZ ETS
30. Clearly delegate specific advisory and other functions to the Commission in regard to the NZ ETS, including any authority to make technical (but not political) decisions on NZ ETS settings
31. Require the Commission to publicly report its advice immediately after provision to the Minister and follow market-disclosure protocols in relation to the NZ ETS, and enable the Commission to consider issues and prepare reports beyond the government-defined terms of reference
32. Provide for multiple-year budget appropriations to improve funding certainty

## Alignment with the NZ ETS and NDCs

33. Ensure compatibility of rules across the ZCB and NZ ETS for GHG accounting (including forestry and GHG metrics), banking and borrowing, limiting overseas mitigation, and limiting forest offsetting
34. Clarify the relationship between emissions budgets and price-control measures in the NZ ETS, especially the cost containment reserve
35. Avoid or manage discrepancies between ZCB accounting rules and international rules applicable to New Zealand's NDC (including in particular international carry-over, metrics, and forestry accounting), as they may have fiscal, trade, and reputational consequences for New Zealand

## Discussion

### New Zealand's call to action on climate change

New Zealand is facing a future of global carbon constraints and climate disruption with an economy that is highly emissions intensive and vulnerable to climate change impacts. To safeguard the wellbeing of New Zealanders, the global competitiveness and resilience of our economy, and the function of our ecosystems, we need to implement ambitious, effective, and enduring goals and strategies to mitigate and adapt to the effects of climate change within New Zealand.

### Alignment with the 1.5°C global temperature goal

Given the stark assessment in the IPCC's Special Report on 1.5°C,<sup>1</sup> New Zealand should align its mitigation efforts both domestically and internationally with the more ambitious global temperature goal under the Paris Agreement to limit warming below 1.5°C relative to preindustrial levels. GHG stabilisation pathways are modelled at the global level and there is a band of options offering different degrees of probability, climate risk, and cost. As an advanced economy, New Zealand should position itself on the ambitious side of the ranges and in line with least-cost pathways that deliver no or low overshoot.

### Policy certainty for investment

Responding to the challenge of climate change will require transformation of technologies and infrastructure and mobilisation of public and private finance at unprecedented scale and speed. Policy uncertainty is lethal to low-emission innovation and investment by both government and businesses. Credible long-term market signals backed by consistent policy are needed to guide efficient investment decisions and help avoid stranded emissions-intensive assets.

### What the ZCB must deliver

To be successful, the Climate Change Response (Zero Carbon) Amendment Bill (ZCB) must deliver clear long-term direction, predictable and adaptive processes for evidence-based decision making under uncertainty, continuity of core mitigation and adaptation policy across election cycles, and accountability for progress. This will require enduring cross-party and public support for the 2050 target, the decision-making framework, and the role of the Climate Change Commission. A target without a pathway, ownership, and accountability is just a number.

### Purpose statement in the ZCB

The current purpose statement makes no mention of domestic mitigation or adaptation, nor does it reference producing benefits for New Zealand. An alternative could provide a stronger narrative on domestic action to achieve desirable outcomes for New Zealand while delivering on our commitments under the Paris Agreement. For example, it could provide for New Zealand's transition to a thriving, resilient, and inclusive low-emission economy in alignment with the 1.5°C global temperature goal. Our collective purpose is to contribute to the global effort under the Paris Agreement and forge domestic mitigation and adaptation pathways that support the wellbeing of New Zealanders and the ecosystems that sustain them. The ZCB should more clearly define the scope of "climate change policies" to which it applies and its relationship to other policies and legislation, particularly the Resource Management Act.

### 2050 target and emissions budgets for all sectors to act

All greenhouse gases (GHGs) contribute to warming and all sectors need to reduce emissions urgently. In New Zealand, long-lived GHGs (notably carbon dioxide) must reach net zero as soon as possible this century and achieve net negative pathways if possible. Short-lived GHGs

(notably methane) need to be reduced significantly. No metric is perfect for comparing the impacts of different gases. Action to reduce short-lived GHGs should not displace or diminish action to reduce gross emissions of long-lived GHGs.

The split-gas 2050 target is a useful approach and should be extended to emissions budgets (defined in the ZCB on an all-gas basis). The current all-gas approach for emission budgets implies fungibility across gases for meeting emission budgets. This elevates the importance of the metric applied to biogenic methane and raises the risk that progress in reducing biogenic methane could dilute mitigation ambition for long-lived GHGs. Split-gas emission budgets would be more effective for setting policy and monitoring progress toward achieving the 2050 target. As a point of clarification, the definition of “removals” applied to the target and emissions budgets should be consistent and encompass industrial removals and carbon capture and storage as well as land use, land-use change and forestry.

While removals from land use, land-use change and forestry (LULUCF) have an important role to play in New Zealand’s contribution to global mitigation, forest offsetting to meet the 2050 target and emissions budgets must not derail reductions in gross emissions of long-lived GHGs. The ZCB should enable restrictions on forest offsetting which are informed by advice from the Climate Change Commission. In providing advice on such limits, the Commission could consider options that: (a) maintain incentives to reduce gross emissions of long-lived GHGs; (b) sustain forest offsetting potential in the second half of the century and beyond; (c) manage the risks of non-permanence; and (d) safeguard native biodiversity and the social and cultural value of rural landscapes and communities.

The drafting suggests that overseas mitigation, banking, and borrowing apply only to emissions budgets and not the 2050 target. If this distinction is retained, the ZCB needs to clarify the methodology for target-year accounting when overseas mitigation, banking, and borrowing apply in the emissions budget period containing the target.

### Use of offshore mitigation to achieve emissions budgets

The drafting does not provide clear policy direction around the purpose and limits for offshore mitigation. What does it mean that emissions budgets must be met “as far as possible” through domestic action? Is the intention for offshore mitigation to be intentionally factored into emissions budgets in advance, or used only in the event of an unintended shortfall in compliance with an emissions budget? Is the “indicative” limit actually decided by the Commission, or advised by the Commission and subject to Ministerial confirmation when an emissions budget is notified? Under what conditions would such a limit be subject to revision? How does this determination relate to purchasing offshore mitigation to back units issued under the cost containment reserve in the NZ ETS? How does this determination relate to purchasing offshore mitigation to achieve an NDC?

The use of offshore mitigation in relation to emissions budgets will have fiscal, economic, and international reputational consequences for New Zealand. It will be hard for the Commission to account for these considerations when recommending emissions budgets 10-15 years in advance. If the purpose of emissions budgets is to guide domestic transformation, then in the context of emissions budgets, overseas mitigation should only be used to bridge an unintended compliance shortfall, and should have a quantity limit set on an absolute, not intensity, basis. Given the political implications of this decision, it should be made by the Minister at the time of emissions budget notification, based on advice from the Commission. It will be important to clarify whether the cost containment reserve in the NZ ETS will be exempt from the limit on overseas mitigation applied to emissions budgets. Any level of overseas mitigation used to

increase New Zealand's total contribution to global mitigation beyond its emissions budgets should be decided in relation to New Zealand's NDC.

### Target ambition for biogenic methane

The ambition of the 2030/2050 target for biogenic methane has attracted considerable controversy. As reported by the NZAGRC, biogenic methane is New Zealand's largest contributor to current warming and would remain so for decades if gross emissions of fossil carbon dioxide, nitrous oxide and biogenic methane continued at current rates.<sup>2</sup> Near-term warming matters and should be avoided. Including a 2030 sub-target in the ZCB provides a useful signal for near-term policy and action on reducing biogenic methane. Adding a 2030 sub-target for gross and net emissions of other GHGs would offer a similar benefit. The 2030 sub-target for biogenic methane appears technically and economically feasible *using available technologies* given findings by the Biological Emissions Reference Group (BERG),<sup>3</sup> Productivity Commission,<sup>4</sup> NZAGRC,<sup>5</sup> and Motu.<sup>6</sup>

For the 2050 biogenic methane target, the ZCB adopts the range provided by the IPCC for global agricultural methane in 2050 under scenarios for 1.5°C and provides for a target review by the Climate Change Commission in 2024. Applying a range is a reasonable approach for setting a long-term target under uncertainty. However, the top of the range should not be limited if new technologies make further reductions feasible while safeguarding food security. The ZCB provides sufficient flexibility to adjust the 2050 target as technology, international markets, consumer preferences, and New Zealand's economy and land-use needs evolve.

The policy framework needs to deliver clear incentives for lower-emission land uses. This can be accomplished as proposed in the ZCB, but will depend, at least in part, on how emission pricing and regulatory constraints apply to livestock production versus other land-based emissions and removals. While the ZCB would not allow forest offsetting to dilute the target for biogenic methane, it would still allow farmers to use forest offsetting to help defray the costs of the biogenic methane target and maintain the profitability of their operations. It would not prevent farmers from managing, optimising, and reporting the emission footprint of their production across all gases and sources.

### Long-term challenges for biogenic methane

There are four key challenges in setting long-term targets for biogenic methane. The first is New Zealand lacks a shared vision for the future of its livestock production under climate change and water quality constraints and uncertainties around future technologies, commodity markets, and consumer preferences. The second is the target is being set in a policy vacuum around how target incentives, responsibilities, and costs would be distributed across the agriculture sector and taxpayers. The third is the need for effective and affordable mechanisms for on-farm emission measurement, reporting, and verification as well as improved activity data and emission factors across the agriculture and solid waste sectors. The fourth is uncertainty about how livestock production will respond to emission pricing and regulatory intervention and what additional measures may be needed to address non-price barriers to on-farm adoption of new practices and technologies.<sup>7</sup>

Resolving these challenges will require time and the systematic, evidence-based, and consultative processes created by the ZCB. The targets in the ZCB constitute an adequate basis for getting started if we regard them as directional signals that are subject to revision upward or downward as better information becomes available. The 2024 target review by the Climate Change Commission is a useful provision in that regard. Emissions budgets and emissions reduction plans will determine what the agriculture and waste sectors actually do. Under any

target, our near-term priority should be motivating action where mitigation options are available now.

An alternative policy goal proposed by some for the agriculture sector is to generate no further contribution to warming. This option was assessed, although not recommended, by the Parliamentary Commissioner for the Environment.<sup>8</sup> This alternative goal presumes entitlement to the level of climate damages New Zealand is causing and is not appropriate given the seriousness of the problem and the significance of near-term warming, New Zealand's capability to help, and our ethical responsibility to consumers and the global commons. Climate change is a major threat to global food security, and we cannot claim to support food security if we fail to mitigate agricultural emissions where we can.

### Additional targets

In addition to the core targets provided, the ZCB should signal mitigation ambition and require monitoring for New Zealand's cumulative domestic emissions, consumption emissions, and international transport (aviation and shipping) emissions. These are important components of New Zealand's global emissions footprint. To support reduction of cumulative emissions, the ZCB should call for domestic gross and net emissions to peak as soon as possible, specify a deadline peak year for gross and net emissions, add a 2030 sub-target for gross and net GHGs excluding biogenic methane, and/or impose a requirement that each emissions budget should show progressive ambition toward achieving the target (similar to the "no backsliding" requirement under the Paris Agreement).

### Emissions reduction plans

Emissions reduction plans are vitally important, as they drive actual action to reduce emissions and increase removals. It is not clear in the ZCB how emissions reduction plans relate to other government strategies, policies, and plans. The ZCB should require the Minister to actually implement emissions reduction plans, not just prepare and publish them. To be effective in driving long-term transformation, each emissions reduction plan should address policy pathways toward meeting the 2050 target as well as each emissions budget. For manageability, the Climate Change Commission's advice on emissions reduction plans should be focused on high-level policy direction. In-depth policy development requires political decisions with economic, fiscal, and distributional implications and both departmental and public consultation – and therefore should remain the domain of central government. To minimise the burdens on all parties involved, public consultation on emissions budgets, emissions reduction plans, and government sector strategies, policies, and plans should be coordinated and streamlined where possible.

### Flexibility for an ambitious and just transition

We must begin the journey toward decarbonisation without knowing precisely how we will get there but with the flexibility to respond to new opportunities and manage the transition with safeguards and compassion for those who will find it most difficult. The ZCB framework offers this necessary flexibility, but with it comes the responsibility to maintain the ambition and urgency of our response. The target should be a floor, not a ceiling, for our effort. If we find we can do more, and faster, while safeguarding the wellbeing of New Zealanders, then we should. Similarly, we should pursue ongoing improvement after 2050, instead of maintaining the 2050 target indefinitely. Both pre- and post-2050, New Zealand may have the capacity to produce net-negative emissions.

## Political decisions belong to government

While based on technical considerations, decisions on targets, emissions budgets, and emissions reduction plans are political decisions with economic, fiscal, and distributional implications. Such decisions should remain with government and be subject to democratic accountability.

## Independence and expertise of the Climate Change Commission

It is appropriate and desirable for the new Climate Change Commission to be defined as an independent Crown entity and operate primarily in a technical advisory capacity. To be effective, the Commission must be empowered and adequately resourced to maintain the independence, credibility, and weight of its advice. It is essential for the Commissioners' experience and expertise to encompass technical, economic, policy, and sectoral issues, and te Tiriti o Waitangi and te ao Māori. Nominations should have cross-party support. To reinforce its independence, the Commission should have the opportunity to undertake additional research and reports beyond government-defined terms of reference, and would benefit from multiple-year budget appropriations to improve funding certainty.

In addition to the functions listed in the ZCB, the Commission should be delegated responsibility to: (a) conduct public education on climate change and New Zealand's response, and (b) assess and improve New Zealand's capability to model the economic impacts of climate change policies. It should also be asked to provide advice on: (a) the social cost of individual GHGs and target-consistent emission prices in the New Zealand context, (b) the potential and remedies for emissions leakage (distinct from production leakage) overseas by key industries, and (c) limits to forest offsetting.

In addition, to promote the global transparency of New Zealand's efforts, the Commission could be tasked with providing an independent commentary on New Zealand's progress toward meeting its 2050 target, emissions budgets, and the 1.5°C global temperature goal for publication in New Zealand's national communications and biennial reports to the United Nations Framework Convention on Climate Change.

## Climate Change Commission and the NZ ETS

The ZCB should delegate clear responsibilities to the Commission in regard to the NZ ETS. Emissions budgets and emissions reduction plans offer an important opportunity for the Commission to provide policy advice on emission pricing. In addition, there could be merit in delegating responsibility to the Commission (or an alternative market oversight entity) for technical implementation decisions for the NZ ETS (e.g. auction volumes and operation of price-control measures) once key political decisions are in place. Lowering emission prices for short-term economic gain may prove hard to resist for government, and independence over appropriate decisions could help to depoliticise emission-price settings and increase market confidence. The objective for delegating functions to the Commission should be goal dependence but instrument independence. Delegated functions should be technically oriented, measurable, and subject to accountability. Commission decisions should be reversible by the political authorities, but only under extreme circumstances.

The Commission's functions with regard to the NZ ETS could expand over time as NZ ETS implementation decisions become more routine, objective, and technically based, and the government and the public build confidence in the Commission. Careful consideration is needed regarding whether initial settings for the cost containment reserve and auction reserve price will be political or technical in the context of other decisions; if political, they should rest with government.

### Minister's response to advice from the Climate Change Commission

Government departments must be adequately resourced in terms of staff time, budget, and expertise to respond to advice from the Climate Change Commission. The ZCB usefully specifies timelines for the Minister to respond to the Commission's advice. However, the provision of a 12-month timeline is too long for the Minister's response to a target review recommendation. Six months would be more appropriate with the possible exception of an election year.

In the case of an emissions budget, the Minister must explain any departures from the Commission's advice and can revise it only if recommended by the Commission. As drafted, while the Minister can request the Commission to conduct a target review, this is not a prerequisite for a Ministerial decision to change the target. The ZCB should require the Minister to secure a recommendation from the Commission before revising the 2050 target, and to explain departures from the Commission's advice before revising the 2050 target and finalising or revising an emissions reduction plan.

The ZCB should provide for the Commission to publish its advice immediately after provision to the Minister; the current drafting could permit a delay. A further consideration is that the public reporting of the Commission's advice on the target and emissions budgets, and any revisions, will have an immediate impact on market expectations and could affect emission prices in the NZ ETS even if the government's response is months away. The public reporting of information from the Commission with implications for the NZ ETS should be handled using market disclosure protocols.

### Enforcing and mainstreaming implementation of the ZCB

To be effective, implementation of the ZCB must be enforced and mainstreamed across government operations with accountability for delivery. The ZCB should more clearly define the scope of "climate change policies" to which it applies and its relationship to other policies and legislation, particularly the Resource Management Act.

To safeguard intended climate outcomes, the government should be required to remedy non-compliance with an emissions budget. Options could include increasing the limit on overseas mitigation for the emissions budget in question, or increasing ambition in the subsequent emissions budget. The ZCB should clarify the remedies for failure by the Minister to set an emissions budget and/or to prepare, publish, and implement an emissions reduction plan, national climate change risk assessment, or national adaptation plan.

It should be mandatory for departments, Crown entities, and regional and territorial authorities to take the 2050 target and emissions budgets into account in the exercise or performance of public functions that affect New Zealand's contribution to climate change. Ministerial guidance to departments on taking account of the 2050 target and emissions budgets should be mandatory, rather than discretionary, and should be extended to other Crown entities as well as regional and territorial authorities. Departments, Crown entities, and regional and territorial authorities should be required to report publicly each year on how they have taken the 2050 target and emissions budgets into account in the performance of their functions, powers, and duties.

To help with mainstreaming implementation, target-consistent shadow emission prices could be factored into all government investment decisions, and reductions in emissions from government policies and operations could be included in key performance indicators for senior management.

## Economic impact of the ZCB

The economic analysis in the Regulatory Impact Statement is inadequate and should be improved by the Climate Change Commission as future emissions budgets are developed. It likely overstates the target costs, due in part to failures in the modelling to account for price-induced improvements in non-combustion emissions efficiency, energy efficiency, forest sequestration, or new low-emission technology (e.g. for energy or agriculture).<sup>9</sup> The modelling also excludes assessment of the value of wider co-benefits from mitigation, the impact of climate change on New Zealand's economy, and the trade impacts if New Zealand failed to act while other countries did.<sup>10</sup> One key finding is that while mitigation effort can be expected to shave growth by a small percentage relative to a counterfactual scenario with a weaker target, the economy itself will still continue to grow significantly. Another key finding is that excluding biogenic methane from the net-zero target for 2050 reduces the amount and cost of forest offsetting, on-farm costs, and the overall cost of the target to the economy.

## Need for better data collection and economic modelling to inform decisions

As an urgent priority, New Zealand needs to improve its data collection and economic modelling capability to inform the development of emissions budgets and emissions reduction plans. The Climate Change Commission could play an important role in fostering a community of practice for climate change mitigation modelling that leverages expertise and resources across government and non-government providers, increases the transparency and credibility of a suite of models and modelling outputs, and invites international engagement and peer review. This would benefit both the public and private sectors.<sup>11</sup> An assessment of New Zealand's current economic modelling capacity and future needs in the land-use and other sectors was undertaken by Motu in collaboration with members of the modelling community.<sup>12</sup>

## Delivering a highest-value transition for present and future generations

Despite the shortcomings of the economic analysis, we know enough to proceed. As was first stated by Sir Nicholas Stern and has been reinforced in subsequent assessments by the Intergovernmental Panel on Climate Change, the cost of inaction on climate change is far greater than the cost of action. Our opportunity is to transform the cost of action into an investment that provides a valuable return, and we must extend the time horizon used to assess that return. We must shift our policy focus from a "least cost" to a "highest value" transition that balances the needs of current and future generations, both in New Zealand and globally. Climate damages are not just a cost to future generations that can be discounted on commercial terms; they are a threat to their survival, wellbeing, and way of life. Climate action does not fit neatly into traditional cost-benefit analysis.

## Alignment with the NZ ETS and NDCs

The ZCB provides an overarching framework for the effective operation of the NZ ETS and fulfilment of New Zealand's Nationally Determined Contribution (NDC) under the Paris Agreement. It is essential for the ZCB to interact seamlessly with forthcoming amendments for reform of the NZ ETS. Key features that must be compatible across the ZCB and NZ ETS include accounting rules (especially for forestry and metrics), provisions for banking and borrowing, and limits on overseas mitigation. It will be critical to clarify how the cost containment reserve will operate in relation to the ZCB's emissions budgets and limits on overseas mitigation. Banking is necessary across emissions budgets to accommodate NZU banking and the operation of an auction reserve price in the NZ ETS. Beyond the banking requirements of the NZ ETS, banking between emissions budgets should generally be discouraged. If a weak emissions budget or introduction of new mitigation technologies were to produce a surplus at the end of a period, such surplus should not carry forward to dilute the ambition of future emissions

budgets. Gains across emissions budgets should accrue to the atmosphere. It is not clear what impact borrowing across emissions budgets could have on unit supply in the NZ ETS.

Discrepancies between the ZCB and international rules applicable to New Zealand's NDC should be assessed carefully, as they may have fiscal, trade, and reputational consequences for New Zealand. At the international level, New Zealand should advocate for permissive carry-over rules for NDCs for alignment with NZ ETS banking. The introduction of borrowing across emissions budgets could threaten the environmental integrity and delivery of New Zealand's international commitments and have fiscal implications. From a global climate perspective, purchasing overseas mitigation (with environmental integrity) would be preferable to deferring mitigation to the future by borrowing. It is possible limited borrowing could become useful in a situation where no overseas mitigation is available for purchase. In this case, in addition to limiting borrowing to no more than 1% of the next period's emissions budget, borrowing should not be allowed across two consecutive emissions budget transitions. This would prevent it from weakening the setting of future emissions budgets.

### Adapting to the effects of climate change

The introduction of national climate change risk assessments and national adaptation plans is a vitally important advance in New Zealand policy. Their preparation requires specialised technical skills and data distinct from those relevant to mitigation, as well as engagement both across departments and between central and local government. The government should carry responsibility for all national climate change risk assessments, not just the first one. The scope of national climate change risk assessments should be broadened to include the potential impacts of climate change on New Zealand's export markets and supply chains as well as global security and migration. The scope of national climate change risk assessments and national adaptation plans should encompass assessment of significant risks and policy responses covering a long-term time horizon, in addition to the next six-year period. The ZCB needs to clarify the process for government collaboration with regional and territorial authorities and consultation with iwi and Māori in the development of national climate change risk assessments and national adaptation plans. The government should align organisational reporting obligations for adaptation with other government- and market-related reporting requirements, where possible, and clarify the consequences for failure by reporting organisations to achieve and/or report progress with implementation. For ease of administration, transparency, management of confidential and commercially sensitive information, and continuity across election cycles, it might be more appropriate for this type of information to be reported to a department or Crown entity rather than directly to the Minister.

### Call for cross-party and public support

Under the principle of Parliamentary sovereignty, no Parliament can bind a future Parliament. The only way to ensure New Zealand sticks to its long-term targets is for people and their elected representatives to continue to vote for them. We encourage the Environment Select Committee to produce a bill backed by cross-party support that strengthens New Zealand's collective and enduring commitment to ambitious and transformational climate action.

## Clause-by-clause analysis

Clause	Comment
<b>Part 1: Climate Change Commission, emission reduction, and adaptation</b>	
4. Section 3 amended (Purpose)	<ul style="list-style-type: none"> <li>• An alternative purpose statement could explicitly address pathways for domestic mitigation and adaptation that achieve desirable outcomes for New Zealand while delivering on our commitments under the Paris Agreement.</li> <li>• The ZCB should more clearly define the scope of “climate change policies” to which it applies and its relationship to other policies and legislation, particularly the Resource Management Act.</li> </ul>
6. Section 4 amended (Interpretation)	<ul style="list-style-type: none"> <li>• “Emissions budget” is defined as a net amount of carbon dioxide equivalent. This is inconsistent with the definition of the 2050 target, which distinguishes between biogenic methane and all other GHGs. It would be preferable for emissions budgets to be defined using the same split of gases applied to the 2050 target.</li> <li>• The definition of “emissions budget” should clarify the scope with regard to units used to supply the cost containment reserve in the NZ ETS. The Explanatory Note indicates that units used to supply price control measures (e.g. the cost containment reserve) in the NZ ETS will not be taken from an emissions budget.</li> <li>• “Net emissions” is defined as gross emissions minus removals from the land use, land-use change and forestry sector. This definition should be expanded to include other forms of removals, including in the industrial sector and from carbon capture and storage.</li> <li>• “Offshore mitigation” is defined as a quantity of carbon dioxide equivalent. If offshore mitigation can be applied to help with meeting emissions budgets for biogenic methane (which needs to be clarified), and a same-gas requirement applies for methane offsetting, then this definition should be amended accordingly.</li> </ul>
<b>Part 1A: Climate Change Commission</b>	
5B. Purpose of Commission	<ul style="list-style-type: none"> <li>• The scope of mitigation should include increasing removals as well as reducing emissions of GHGs.</li> </ul>
5H. Matters Minister must have regard to before recommending appointment of member of Commission	<ul style="list-style-type: none"> <li>• In section 5H(1)(d)(i), it would be appropriate to include “cultural” in this list for consistency with section 5L(d).</li> </ul>

5J. Commission's functions	<ul style="list-style-type: none"> <li>• The scope of advice from the Commission should include: <ul style="list-style-type: none"> <li>• The social cost of GHGs and target-consistent emission prices in the New Zealand context</li> <li>• The potential and remedies for emissions leakage (distinct from production leakage) overseas by key industries</li> <li>• Limits to the use of forest removals to help meet the 2050 target and emissions budgets.</li> </ul> </li> <li>• The list of functions for the Commission should include: <ul style="list-style-type: none"> <li>• To conduct public education on climate change and New Zealand's response</li> <li>• To assess and improve New Zealand's capability to model the economic impacts of climate change policies.</li> </ul> </li> <li>• The ZCB should clearly delegate specific advisory and other functions to the Commission in regard to the NZ ETS, including any authority to make technical decisions on NZ ETS settings.</li> </ul>
5K. Reports to Government	<ul style="list-style-type: none"> <li>• As part of its independence, the Commission should have the ability to consider issues and prepare reports beyond government-defined terms of reference.</li> </ul>
5L. Matters Commission must consider	<ul style="list-style-type: none"> <li>• 5L(e) should be amended to read "the distribution of benefits, costs, and risks between <u>sectors, regions, socioeconomic groups, and generations</u>; and".</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Across the ZCB, the Commission should be required to report its advice publicly immediately after provision to the Minister.</li> <li>• Providing a multiple-year budget appropriation could help improve funding certainty and insulate the Commission from political volatility.</li> </ul>
<b>Part 1B. Emission reduction</b>	
50. Target for 2050	<ul style="list-style-type: none"> <li>• In 50(1)(a), net emissions should be "<u>zero or negative no later than</u>" the calendar year beginning on 1 January 20250 and "<u>zero or negative</u>" for each subsequent calendar year after 2050. If New Zealand has the capability to produce net negative emissions, it should.</li> <li>• In 50(1)(b)(i), the target for gross emissions of biogenic methane should be "<u>at least</u> 10% less than 2017 emissions." The current drafting indicates that emissions must be <i>exactly</i> equal to 10%. Not only would that be difficult to achieve with precision, but also going beyond that would violate the Act when instead it should be encouraged.</li> <li>• In 50(1)(b)(ii), biogenic methane emissions should be allowed and encouraged to decrease beyond the top of the target range both before and after 2050 if this is feasible without compromising food security. An ongoing decrease post-2050 is consistent with the scenarios in the IPCC Special Report on 1.5°C.</li> </ul>

	<ul style="list-style-type: none"> <li>• The drafting suggests that overseas mitigation, banking, and borrowing apply only to emissions budgets and not the 2050 target. If this distinction is retained, the ZCB needs to clarify how overseas mitigation, banking, and borrowing used to meet emissions budgets for a period containing a target (or sub-target) should be accounted for – or not – in the target year.</li> <li>• The ZCB should signal mitigation ambition and require monitoring for New Zealand’s cumulative domestic emissions, consumption emissions, and international transport emissions.</li> <li>• To support reduction of cumulative emissions, the ZCB should call for domestic gross and net emissions to peak as soon as possible specify a deadline peak year for gross emissions of biogenic methane and gross and net emissions of other GHGs, and add a 2030 sub-target for gross and net emissions excluding biogenic methane.</li> </ul>
5Q. Recommendations to amend 2050 target	<ul style="list-style-type: none"> <li>• The scope of target amendment should be extended to include cumulative domestic emissions, consumption emissions, and international transport emissions if these considerations are added under 5O.</li> </ul>
5R. Government response to target review recommendations	<ul style="list-style-type: none"> <li>• The Minister should have the power to amend the 2050 target only upon the recommendation of the Commission, and should have to explain the reasons for any departures from the Commission’s advice in the case of any 2050 target revision (already the case for emissions budgets).</li> <li>• The Minister should be required to respond to a target amendment recommendation within 6 months rather than 12 months unless the 6-month period includes an election.</li> </ul>
5S. Interpretation (setting emissions budgets)	<ul style="list-style-type: none"> <li>• The definition of “net budget emissions” should reflect a split-gas approach for defining emission budgets as recommended under clause 6 above.</li> <li>• The definition of “net budget emissions” should be clarified with regard to banking and borrowing across emissions budgets.</li> <li>• The definition of “net budget emissions” should be clarified with regard to emissions enabled through price-control measures (e.g. the cost containment reserve) in the NZ ETS.</li> <li>• The same definition of “removals” should apply to both emissions budgets and the 2050 target (see clause 6 above). This should encompass removals from LULUCF, the industrial sector, and carbon capture and storage.</li> </ul>
5U. Duty of Minister to set emissions budgets and ensure they are met	<ul style="list-style-type: none"> <li>• In regard to 5U(4), the drafting should clarify whether the government can increase the limit on overseas mitigation if that is the last available remedy to meet an emissions budget. This is also relevant to 5ZI(1)(c).</li> <li>• Emissions budgets should reflect peak-year requirements for emissions if adopted under 5(O) and show progressive ambition toward achieving the target (similar to the “no backsliding” requirement under the Paris Agreement).</li> </ul>
5V. Contents of emissions budgets	<ul style="list-style-type: none"> <li>• Emissions budgets should be defined using the target’s split of gases between biogenic methane and other GHGs.</li> </ul>

5W. How emissions budgets to be met	<ul style="list-style-type: none"> <li>• The drafting in 5W(1) needs to provide clear policy direction around the purpose of offshore mitigation. When read in combination with 5X(1)(e) and 5ZI(1)(c), it is not clear whether offshore mitigation can or should be intentionally factored into emissions budgets in advance, or used only in the event of an unintended shortfall in compliance with an emissions budget up to a prescribed limit.</li> <li>• To avoid confusion, this needs to cross-reference 5ZC on banking and borrowing.</li> <li>• In 5W(2), the Commission and the Minister should also consider <u>“(d) the potential supply and cost of overseas mitigation available for purchase by New Zealand during the emissions budget period:”</u>, and <u>“(e) the emissions budget implications of banked NZUs.”</u></li> </ul>
5X. Commission to advise Minister	<ul style="list-style-type: none"> <li>• In 5X(1)(d), the Commission should advise the Minister on “an indication of the proportion of the emissions budget that will be met by greenhouse gas reductions <u>and</u> removals <u>by sector</u>, and offshore mitigation; and”. Providing sectoral information will help to inform government decisions on emissions budgets and the subsequent development of emissions reduction plans. The reporting should also mirror the split of gases in the 2050 target.</li> <li>• As noted under 5W, in 5X(1)(e) it is not clear if a limited quantity of offshore mitigation is factored into an emissions budget in advance or available only to remedy a non-compliance situation in meeting an emissions budget. It is important to clarify whether the cost containment reserve in the NZ ETS will be exempt from the limit on overseas mitigation applied to emissions budgets. Any level of overseas mitigation used to increase New Zealand’s total contribution to global mitigation beyond its emissions budgets should be decided in relation to New Zealand’s NDCs.</li> <li>• In 5X(1), add <u>“(f) the appropriate limit on the amount of forest removals that may be used to meet the emissions budget, including the reasons for the proposed limit.”</u></li> <li>• In 5X(4), it is not clear how soon the Commission is required to make its advice on emissions budgets public after provision to the Minister. This will affect market expectations and emission prices in the NZ ETS. Public reporting of this information should follow market disclosure protocols.</li> </ul>
5Z. Matters relevant to advising on, and setting, emissions budgets	<ul style="list-style-type: none"> <li>• The list of matters should include <u>“the potential for policies and measures to mitigate any disproportionate distributional impacts”</u> and <u>“the potential for significant leakage of emissions outside of New Zealand”</u>. If distributional impacts can be managed appropriately, then they should not be a barrier to increasing budget ambition. Information on leakage potential would be useful for accelerating the phase-out of free allocation, which will be a driver of emissions budgets.</li> </ul>
5ZB. When emissions budgets may be revised	<ul style="list-style-type: none"> <li>• As with 5X(4), the Commission’s advice on revising an emissions budget will affect market expectations and emission prices in the NZ ETS. Public reporting of this information should follow market disclosure protocols.</li> </ul>
5ZC. Power to bank or borrow	<ul style="list-style-type: none"> <li>• The ZCB should clarify the relationship between banking and borrowing between emissions budgets, and unit supply and price-control measures in the NZ ETS.</li> <li>• Banking rules for emissions budgets should accommodate NZU banking and the operation of an auction reserve price in the NZ ETS. If international rules prohibit carry-over between commitment periods for New Zealand’s NDCs, then banking across</li> </ul>

	<p>emissions budgets (and in the NZ ETS) will represent an international target liability for New Zealand. New Zealand should advocate for permissive carry-over rules internationally in the context of an ETS, since banking is essential for effective operation of the NZ ETS.</p> <ul style="list-style-type: none"> <li>• Beyond the banking requirements of the NZ ETS, banking between emissions budgets should generally be discouraged. In principle, gains across emissions budgets (beyond NZ ETS banking) should accrue to the atmosphere.</li> <li>• Borrowing should either be eliminated or further restricted. In addition to limiting borrowing to no more than 1% of the next period's emissions budget, borrowing should not be allowed across two consecutive emissions budget transitions. This would prevent it from weakening the setting of future emissions budgets.</li> </ul>
5ZD. Requirement for emissions reduction plan	<ul style="list-style-type: none"> <li>• Amend 5ZD(1) so that “The Minister must prepare, <del>and publish, and implement</del> a plan setting out the policies and strategies for meeting an emissions budget <u>and planning to meet the 2050 target.</u>” To provide for long-term transformation, each emissions reduction plan should address policy pathways toward the 2050 target as well as in the each emissions budget period.</li> <li>• It will be important to clarify the depth and scope of emissions reduction plans and how they relate to other government sector strategies, policies, and plans (e.g. New Zealand Energy Strategy, New Zealand Energy Efficiency and Conservation Strategy, etc.).</li> </ul>
5ZE. Commission to advise on emissions reduction plan	<ul style="list-style-type: none"> <li>• The Commission's advice on emissions reduction plans should provide high-level policy direction, leaving in-depth policy development to government.</li> <li>• Where possible, public consultation on emissions budgets, emissions reduction plans, and government sector strategies, policies, and plans should be coordinated and streamlined to minimise the burdens on all parties involved.</li> </ul>
5ZH. Commission to report annually on results of monitoring	<ul style="list-style-type: none"> <li>• The scope of monitoring should be expanded to include cumulative emissions, consumption emissions, and international transport (aviation and shipping) emissions, even if there are not explicit targets and emissions budgets for these.</li> <li>• The scope of monitoring should include key performance indicators relevant to long-term low-emission transformation of each sector of the economy and performance of the NZ ETS.</li> </ul>
5ZI. Commission to report at end of emissions budget period	<ul style="list-style-type: none"> <li>• In 5ZI(1)(c), and as was noted for 5W and 5X above, it is not clear whether the “indicative” limit on offshore mitigation proposed by the Commission is binding, whether this limit is subject to decision by the Minister as part of the original notification of the emissions budget, and whether this limit can be revised to enable compliance with an emissions budget.</li> <li>• If the government has to choose between failing to meet an emissions budget and increasing the amount of overseas mitigation beyond the advised limit, it is not clear which should take precedence.</li> </ul>
5ZJ. Effect of failure to meet 2050 target and emissions budgets	<ul style="list-style-type: none"> <li>• To safeguard intended climate outcomes, remedies should apply for non-compliance with the 2050 target or an emissions budget. Options could include increasing the limit on overseas mitigation for the emissions budget in question, or increasing ambition in the subsequent emissions budget.</li> </ul>

	<ul style="list-style-type: none"> <li>Remedies should apply for failure by the Minister to set an emissions budget and/or to prepare, publish, and implement an emissions reduction plan, national climate change risk assessment, or national adaptation plan.</li> </ul>
5ZK. 2050 target and emissions budget are permissive considerations	<ul style="list-style-type: none"> <li>It should be mandatory, not discretionary, for departments, Crown entities, and regional and territorial authorities to take the 2050 target and emissions budgets into account in the exercise or performance of public functions that affect New Zealand's contribution to climate change.</li> </ul>
5ZL. Guidance for departments	<ul style="list-style-type: none"> <li>Ministerial guidance to departments on taking account of the 2050 target and emissions budgets should be mandatory, not discretionary, and should be extended to Crown entities as well as regional and territorial authorities. Departments, Crown entities, and regional and territorial authorities should be required to report publicly each year on how they have taken the guidance on the 2050 target and emissions budgets into account in the performance of their functions, powers, and duties.</li> </ul>
<b>Part 1C. Adaptation</b>	
5ZM. National climate change risk assessment	<ul style="list-style-type: none"> <li>In 5ZM(1)(b), the scope of national climate change risk assessments should be expanded to cover risks and actions over a long-term time horizon, in addition to the next six-year period.</li> <li>5ZM(3) should be amended so the Minister prepares all national climate change risk assessments, not just the first one.</li> </ul>
5ZN. Preparation of national climate change risk assessment	<ul style="list-style-type: none"> <li>This should provide for the Minister, and not the Climate Change Commission, to prepare national climate change risk assessments.</li> <li>This needs to clarify the process for government collaboration with regional and territorial authorities and consultation with iwi and Māori in the development of national climate change risk assessments.</li> </ul>
5ZO. Assessment must be presented to Parliament and made publicly available.	<ul style="list-style-type: none"> <li>The obligations in this section should be assigned to the Minister, not the Commission.</li> </ul>
5ZQ. National adaptation plans	<ul style="list-style-type: none"> <li>This should ensure the scope of national adaptation plans covers a long-term time horizon, in addition to the six-year period for which the associated national climate change risk assessment applies.</li> <li>This needs to clarify the process for government collaboration with regional and territorial authorities and consultation with iwi and Māori in the development of national adaptation plans.</li> </ul>
5ZV. Minister may request certain organisations to provide information on climate change adaptation	<ul style="list-style-type: none"> <li>5ZV(2) should clarify the consequences if a reporting organisation fails to comply. Are these facilitative or punitive?</li> <li>Provide for information to be reported to a department or Crown entity, rather than the Minister.</li> </ul>

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<sup>1</sup> IPCC (2018).

<sup>2</sup> Reisinger and Leahy (2019).

<sup>3</sup> Based on a review of evidence, the Biological Emissions Reference Group reported, "A range of options to reduce emissions from pasture-based livestock systems exist, but the reductions that can be achieved without significant reductions in profitability are limited. These options can be grouped into three broad areas: (\*) Improving the productivity and efficiency of farm systems; (\*) Reducing emissions (by changing feed); and (\*) Reducing the amount of feed eaten by reducing livestock numbers. A variety of mitigation options exist across the sector that collectively reduce biological emissions by 5–10% without necessarily reducing on-farm profitability. Actual economic outcomes for each farmer will depend on a range of factors, including how mitigation options are implemented, skill level required to implement these options, farm systems, commodity prices and emission prices (if changed). Land use change is generally required to achieve a reduction of more than 10%" (Biological Emissions Reference Group 2018).

<sup>4</sup> New Zealand Productivity Commission (2018).

<sup>5</sup> Reisinger et al. (2017); NZAGRC and PGgRC (2016).

<sup>6</sup> Anastasiadis and Kerr (2013).

<sup>7</sup> Cortes-Acosta et al. (2019).

<sup>8</sup> Parliamentary Commissioner for the Environment (2019a, 2019b).

<sup>9</sup> An independent review by Winchester (2019) of the NZIER modelling cited in the Regulatory Impact Statement affirmed the value of Computable General Equilibrium (CGE) modelling for assessing the broad sectoral and macroeconomic impacts of climate change policies. However, it noted design shortcomings in the particular model applied which were exacerbated by time constraints in preparing the study. The recommendation was that future models should: "Include both price-induced improvements in energy efficiency and price-induced reductions in non-combustion GHG emissions per unit of output," "Improve the modelling of international permits to consider the foreign exchange implications of purchasing international permits, and adding [sic] the ability to simultaneously impose a domestic emissions cap and a fixed price for international permits," "Include advanced low-emissions technologies/production methods that are not economic under current prices and policies, but may be profitable in the future," "Include endogenous forestry sequestration responses to the carbon [price]," and "Identify different types of greenhouse gases in the model."

<sup>10</sup> Ministry for the Environment (2019).

<sup>11</sup> Winchester, White, and Leining (2019) concluded: "Quantitative analyses of policies and regulations to meet New Zealand's emissions-reduction goals will require multiple models focusing on diverse aspects of the economy. New Zealand currently lags behind other leading jurisdictions in its capacity to model climate change mitigation policies. This capacity gap poses a serious risk to New Zealand's future economic development and long-term emissions targets. Many of the shortcomings of New Zealand's

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mitigation modelling capacity could be addressed by establishing a CPMI [Climate Policy Modelling Initiative]. Creating this initiative will require significant leadership from the government to establish the required funding and governance mechanisms. The CCC [Climate Change Commission] is the logical organisation to facilitate and coordinate modelling efforts, while providing the interface between modelling results and policy insights. This relies on appropriate funding for the CCC. A New Zealand CPMI will enhance the credibility and transparency of evidence-based decision-making, while assisting the transition to a low-emissions economy.”

<sup>12</sup> Hendy et al. (2018); White et al. (2018).