



# Generation Zero

Submission in response to the  
Productivity Commission's  
*Low Emissions Economy:  
Issues Paper*

13 October 2017



**ZERO**  
**CARBON**  
**ACT NZ**

# Table of Contents

<b>Introduction</b>	<b>3</b>
Generation Zero and the Zero Carbon Act	3
Overview of our submission	4
Further engagement with the Productivity Commission	4
 <b>Part One: Systems Architecture</b>	 <b>5</b>
1. Zero Carbon Act framework	5
2. Independent Climate Commission	8
3. Two baskets approach	10
4. Public support and long-term vision	13
5. Data and analysis	14
 <b>Part Two: Emissions reduction policies</b>	 <b>15</b>
6. Essential components of a mitigation strategy	15
7. Green Investment Bank	16
8. Transport and urban form	18

# Introduction

Generation Zero applaud the Productivity Commission's work-to-date in response to its Terms of Reference. Both the *Low Emissions Economy: Issues Paper*,<sup>1</sup> and the more recent research note, *Examining the UK Climate Change Act 2008*,<sup>2</sup> provide a strong platform from which to explore the opportunities for Aotearoa New Zealand's transition to a low-carbon (and, ultimately, zero carbon) economy, while continuing to grow incomes and wellbeing.

Thank you for the opportunity to submit on the *Issues Paper*.

## Generation Zero and the Zero Carbon Act

Generation Zero is youth-led organisation, founded with the central purpose of providing solutions for Aotearoa New Zealand to cut carbon pollution through smarter transport, liveable cities & independence from fossil fuels.

As the Productivity Commission has observed, Generation Zero is currently calling for all political parties to support and introduce a Zero Carbon Act.

We believe a Zero Carbon Act, backed by cross-party agreement, is the most urgent and important law our next Parliament could legislate. It would introduce direction, certainty, transparency and accountability to New Zealand's climate change strategy, and drive a fair and cost-effective transition towards a thriving, net zero carbon future.



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1. Productivity Commission, *Low Emissions Economy: Issues Paper* (August 2017).  
2. Productivity Commission, *Examining the UK Climate Change Act 2008* (September 2017).

## Overview of our submission

Our primary submission is that New Zealand's 'systems architecture' is currently inadequate. To successfully transition to a lower carbon economy while growing incomes and wellbeing, New Zealand needs a stronger legislative framework in the form of a Zero Carbon Act. Our submission is in two parts:

- **Systems architecture:** In the first part of the submission we respond to the *Issue Paper* questions related to high-level 'systems architecture'. Further to our primary submission that New Zealand needs to introduce a Zero Carbon Act, we submit that a two baskets approach, treating long-lived and short-lived greenhouse gases separately, should inform New Zealand's climate change strategy.
- **Emissions reduction policies:** The second part of our submission focuses on the emissions reduction policy plans formed under the high-level systems architecture of a Zero Carbon Act. To be economically and politically sustainable, New Zealand's emissions reduction plan will need to be comprehensive, fair, sustainable, and cost-effective. We also consider how Green Investment Banking could contribute to New Zealand's transition to a lower carbon economy.

## Further engagement with the Productivity Commission

Our Zero Carbon Act policy blueprint has been collaboratively developed through engagement with lawyers, climate scientists, and many other experts. We are considering these issues on an ongoing and iterative basis.

In the months ahead, we intend to release further papers outlining the operational details of our proposed Zero Carbon Act, such as how New Zealand might use a two baskets approach to better inform its climate change strategy. This ongoing work may assist the Productivity Commission with its inquiry.

We would welcome the opportunity to meet in person with the Productivity Commission to discuss the content of this submission, our Zero Carbon Act proposal, and the Low Emissions Economy inquiry. Please do not hesitate to contact us.

## Our contact details

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# Part One: Systems Architecture

## 1. Zero Carbon Act framework

**Q26:** *What are the main uncertainties affecting New Zealand businesses and households in considering investments relevant to a low-emissions future? What policies and institutions would provide greater confidence for investors?*

**Q28:** *Is New Zealand's current statutory framework to deal with climate change adequate? What other types of legislation might be needed to effectively transition towards a low-emissions economy?*

## The importance of well-designed Systems Architecture

We agree with the Productivity Commission that Aotearoa New Zealand's transition to a lower emissions economy will occur within a complex network of interrelated, values-based, social, economic, and institutional systems. We also agree with the Commission that:<sup>3</sup>

*In order to ensure a system that effectively and coherently reduces emissions at least cost and greatest net benefit to New Zealand, the underlying institutional foundation, or "systems architecture", must be well designed.*

We submit that New Zealand's current emission reduction 'systems architecture' is inadequate. New Zealand needs a stronger legislative framework in the form of a Zero Carbon Act, based on the UK Climate Change Act model.

We largely agree with the conclusions reached in the Productivity Commission's research note, *Examining the UK Climate Change Act 2008*, as summarised in this excerpt:<sup>4</sup>

*The UK's experience shows that ambitious climate change legislation is possible (given the right preconditions). The Act appears to be a valuable tool for helping to achieve long-term climate change goals by setting a clear emissions reduction pathway via the carbon budget system and by providing a framework that ensures climate change stays on the political agenda, with procedures and reporting obligations driving ongoing action and improving transparency and accountability. Nonetheless, the legislation only provides the framework; it is not a substitute for ongoing political commitment to a low emissions economy. Should New Zealand enact framework climate change legislation, the UK Act provides a useful model to consider but care would need to be taken to ensure legislation is appropriately tailored to suit the New Zealand context.*

In particular, we agree that the UK Act is a "valuable tool" and a "useful model" towards developing strong framework legislation for New Zealand, which must nevertheless be "appropriately tailored to suit the New Zealand context". These principles have driven the development of our Zero Carbon Act policy blueprint to date.

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3. Productivity Commission, *Low Emissions Economy: Issues Paper* (August 2017), p 50.

4. Productivity Commission, *Examining the UK Climate Change Act 2008* (September 2017), p 1.

With regards to the “*right preconditions*” permitting an ambitious legislative framework to be successfully introduced, we submit that the issue of political and social will is more nuanced than suggested by the Productivity Commission’s research note. New Zealand’s current lack of adequate systems architecture is, by its very absence, a factor which undermines social and political support for emission reduction initiatives. We discuss this in more detail in response to Q27 and Q40.

## **Zero Carbon Act: a fair, sustainable, cost-efficient pathway to net zero**

Our proposed Zero Carbon Act will require the government to set out a fair, sustainable, and cost-efficient pathway for New Zealand to achieve a long-term emissions reduction target.<sup>5</sup> We believe this target should be net zero carbon emissions by 2050, with methane and other short-lived gases subject to a different long-term target under a two baskets approach.

The wider objectives of the Zero Carbon Act are to ensure New Zealand has a coherent emission reduction (and adaptation) plan, and to increase transparency and certainty for businesses and communities. Crucial to achieving these objectives is the creation of a framework designed to ensure that the government is held to account on its commitments, which establishes robust decision-making processes, and which utilises the expert advice and oversight of an independent Climate Commission. This latter point is discussed further in response to Q29.

The Zero Carbon Act will require the government to develop policy plans to achieve interim targets (‘carbon budgets’), set 12 years in advance. Meeting these targets will require strategic long-term planning across electoral cycles. This will serve to depoliticise climate change policy and, combined with the Zero Carbon Act’s reporting and accountability provisions, provide communities and businesses with the certainty they need to invest in low carbon solutions.

The importance of setting a clear long-term target and planning backwards from this goal cannot be understated. The cost/benefit analysis of policy options will differ markedly depending on the timeframe and objectives against which they are considered.

Policies and investments instituted with the purpose of minimising short-term cost, but which later prove incompatible with a low carbon economy, risk:

- undermining emission reduction efforts over the long-term;
- inhibiting New Zealand from realising the benefits of low carbon economy;
- projecting counterproductive signals to the market;
- creating stranded assets and inefficiencies; and/or
- requiring the delayed introduction of unnecessarily costly and disruptive transition efforts to compensate.

Kiwirail’s decision to replace electric trains with diesel trains, for example, is a product of our current short-term thinking and risks all of these negative outcomes.

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5. Such an approach aligns with New Zealand’s obligations under the Paris Agreement. In addition to the headline Article 2 goals to limit global warming to well below 2°C (and pursue efforts to achieve 1.5°C), Article 4(19) of the Paris Agreement explicitly calls on parties to “*formulate and communicate long-term low greenhouse gas emission development strategies*”.



The Zero Carbon Act's emphasis on long-term planning is critical to the development of an emissions reduction pathway which is fair, sustainable, and cost-efficient. A clear long-term target is the cornerstone of this systems architecture. Carbon budgets and policy plans must be set consistently with the long-term target. If the long-term target is not certain, or can be easily changed for politically expedient reasons, this will undermine much of the framework's value.

The Zero Carbon Act is uniquely suited to cross-party agreement. It sets out legally-mandated outcomes and process, without prescribing specific policies. It combines long-term clarity on policy direction with flexibility in its delivery.

## A framework tailored for Aotearoa New Zealand

With regard to tailoring the legislative framework to suit the New Zealand context, our Zero Carbon Act policy blueprint departs or improves upon the UK model in numerous ways. We summarise the most important of these here:

- **Te Tiriti o Waitangi:** We strongly take the view that Te Tiriti o Waitangi must underpin the systems architecture guiding New Zealand's transition to a low carbon economy. Our proposed Zero Carbon Act will honour, and require targets and policies to be made consistently with, the tino rangatiratanga of iwi and hapū enshrined in Te Tiriti. It will require decisions to be informed by tikanga Māori, Māori worldviews towards climate change, and Māori interests. The Climate Commission will also be required to have expertise in these areas, and must build meaningful partnership with iwi.
- **'Firewall' principle:** The Zero Carbon Act is a legislative framework designed to drive New Zealand's transition to a lower carbon economy by setting out a long-term pathway which is as clear and certain as possible. Accordingly, targets set under the Act can only be met by domestic emission reductions. To clarify, this 'firewall' between domestic targets and international commitments will not detract from New Zealand's capacity to assist with emission reduction efforts in developing countries by buying international carbon credits, contributing to the Green Climate Fund, or other means. It will simply ensure that these international contributions do not create unnecessary uncertainty for domestic investors and communities regarding the direction of New Zealand's own transition.
- **'Two baskets' approach:** We submit that a two baskets approach, where long-lived and short-lived greenhouse gases are treated separately, should inform New Zealand's climate change strategy. We discuss this in more detail in response to Q37 below.

We would welcome the opportunity to meet in person with the Productivity Commission to discuss our Zero Carbon Act proposal in more detail.

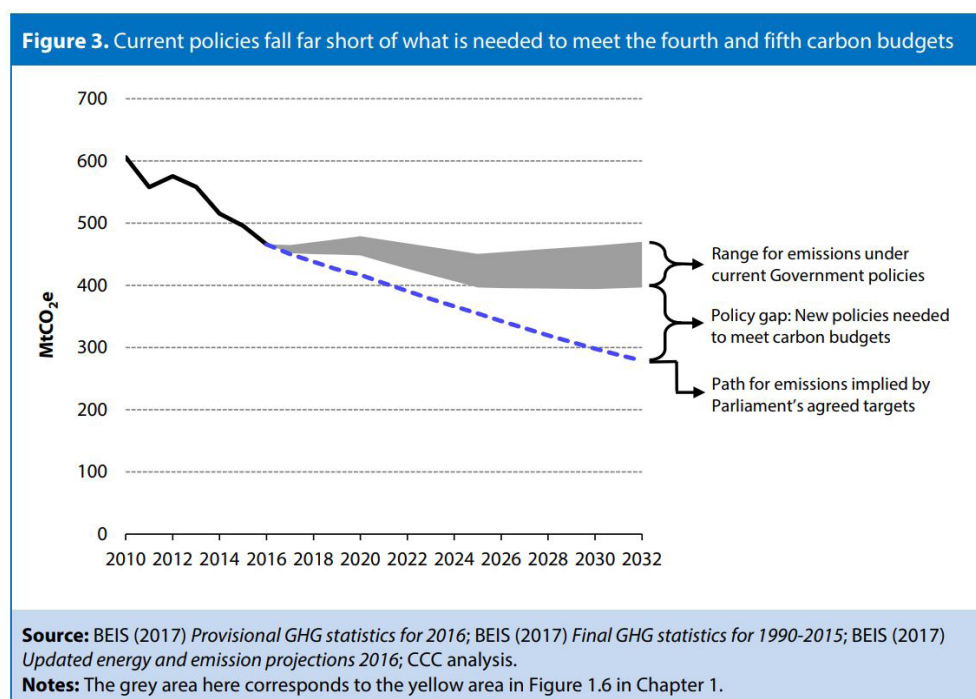
## 2. Independent Climate Commission

**Q29:** Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?

New Zealand needs an independent body to provide accountability and advice on New Zealand's climate change commitments. We think the UK's arrangement, where an independent commission is fully integrated into their systems architecture, provides a useful model.

The UK's Committee on Climate Change performs a valuable function in providing advice to the Government and holding it accountable for meeting its commitments. Its accountability function is vital in ensuring the UK stays on track to meet its interim and long-term emissions reduction targets.

The UK Committee's most recent report on closing the policy gap, for example, identified an urgent need for new policies to meet the UK's fifth carbon budget.<sup>6</sup> Through this report, the UK was made aware well in advance by a credible source of the need to work harder to reduce its emissions. On 12 October 2017, the UK Government released its *Clean Growth Strategy* emission reduction plan through to 2032, which includes direct responses to the UK Committee's concerns.<sup>7</sup> Over the next few months, the UK Committee will review and respond to the UK Government's plan.



This graph highlights the UK Government's 'policy gap' under the UK Climate Change Act 2008. Extracted from the UK Committee's 2017 Report to Parliament – *Meeting Carbon Budgets: Closing the policy gap* (29 June 2017).

6. UK Committee on Climate Change, 2017 Report to Parliament – *Meeting Carbon Budgets: Closing the policy gap* (29 June 2017).  
7. UK Government, *The Clean Growth Strategy: Leading the way to a low carbon future* (October 2017).



This long-term perspective and honest and robust advice is missing from New Zealand's climate change discourse. Under our current institutional arrangements, there is no framework requiring independent reflection on our progress towards a low emissions economy. Given the gravity of climate change in human and economic terms, the communities and businesses of Aotearoa New Zealand should be able to find out from an independent and impartial source whether we are likely to meet the targets that are set, and whether existing emission reduction policies require change.

Under the Zero Carbon Act, we propose that New Zealand should have a Climate Commission performing similar functions to the UK Committee. Legislation should provide a clear mandate for the Commission to:

- Give advice on what interim emissions reduction targets ('carbon budgets') are achievable and will put New Zealand on a fair, sustainable and cost-effective pathway towards its long term target.
- Give advice on what policies will be effective towards meeting interim and long-term targets.
- Give advice on an effective adaptation response to climate change-related risks.
- Report annually on New Zealand's emissions on an overall and sectoral basis.
- Hold the Government to account for meeting its emissions reduction commitments by writing robust and impartial reports.

It is important that these functions are woven into the systems architecture of a Zero Carbon Act. There is no point the Commission providing advice in a vacuum. Therefore, there must be corresponding obligations on the Government to consider and respond to advice prepared by the Commission before the Government sets targets and publishes its policy plans. If the Government proposes to depart substantially from the Commission's advice, it should be required to give reasons for doing so. Further, if the Commission prepares a report stating that New Zealand is unlikely to meet its climate budgets, the Government should be required to respond.

These procedures must be clearly outlined in legislation, so that the Commission's work has a clear mandate to feed into the policy making process.

To effectively perform its functions, the Climate Commission must be independent of the Government. We agree with the factors identified by the Productivity Commission's *Issues Paper* that point to the need for regulatory independence.<sup>8</sup> In particular, an independent body would help depoliticise New Zealand's response to climate change as much as possible, and ensure a stable long-term strategy is taken. This stability and certainty is important to businesses and individuals who are likely to be affected by climate-related policy.

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8. Productivity Commission, *Low Emissions Economy: Issues Paper* (August 2017), pp 52-53.

To set the Climate Commission up to be an effective and credible body, it should be constituted to bolster its independence and expertise. The Commission should have members with expertise in a range of climate change related topics, such as science, agriculture, policy design, business, technology, and Te Tiriti o Waitangi and Māori interests. Members should be appointed with cross-party consultation within Parliament. It should be either an Officer of Parliament or an Independent Crown Entity so that the risk of political interference with its functions is minimised.

One possible argument against having a Climate Commission is that we already have a Parliamentary Commissioner for the Environment (PCE). This is not convincing because it assumes the Climate Commission and the PCE will do the same thing. The PCE performs a valuable function in New Zealand's current institutional framework by focussing on maintaining, improving and protecting the quality of the environment. He or she prepares reports on all aspects of the environment, not all of which are closely linked with climate change policy. The PCE's reports are generally one-off pieces of work, not ongoing.

The Climate Commission, on the other hand, would have a narrow focus on climate change related matters, on which it would report in more detail and on an ongoing basis. It would overburden the PCE for him or her to pick up these responsibilities. In her 2017 report *Stepping stones to Paris and beyond: Climate change, progress, and predictability*, the PCE herself recommended formation of a separate Climate Commission as a core pillar of a UK style legislative framework.<sup>9</sup>

### 3. Two baskets approach

**Q37:** *Should New Zealand adopt the two baskets approach? If so, how should it influence New Zealand's emissions reductions policies and long-term vision for the future?*

We believe that the two baskets approach should be used in formulating New Zealand's climate change strategy. There are multiple ways this could be done, and we support further consideration and debate on this matter.

In our view, the most critical implications of the two baskets approach are:

- Prioritising immediate reductions in CO<sub>2</sub> and N<sub>2</sub>O emissions;
- Building a long-term vision of net zero emissions of long-lived GHGs and substantially reduced methane emissions; and
- Consideration of long-lived GHGs through a cumulative emissions lens.

One key question is at what level the two baskets framework should be applied. In our Zero Carbon Act blueprint, we propose having separate targets and pathways for long-lived and short-lived GHGs in legislation. We adopted this position partly for the purpose of clarity.

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9. Parliamentary Commissioner for the Environment, *Stepping stones to Paris and beyond: Climate change, progress, and predictability* (July 2017).



Another equally valid option is to continue with a single CO<sub>2</sub>-equivalent target, but for the target and pathway to be underpinned by two baskets thinking. In this case, the distinction between long-lived and short-lived GHGs would come through in the planning of how the target and emissions budgets would be met (i.e. contributions by sectors and emissions sources). This increases the flexibility around how targets are met, but decreases the certainty on the actual climate impacts of those targets.<sup>10</sup>

An unresolved issue with the two baskets approach is how to integrate forestry. This is part of a larger debate about the extent to which forestry offsets should be treated as equivalent to gross emissions reductions.<sup>11, 12</sup> Sequestration from permanent forests have a stronger claim to being equivalent to reductions in CO<sub>2</sub> emissions, although there are some important considerations such as albedo effects and the resilience of the forest ecosystem under rising temperatures. However, as Simon Upton has suggested, carbon storage in plantation forests and harvested wood products might more closely resemble the effect of short-lived GHGs. This is a complex and technical issue, which we propose should be dealt with by an independent Climate Commission, once established. We intend to do further work on the topic ourselves.

We believe that the separation of fossil fuel and industry emissions from the land sector (biological emissions and carbon sinks) is worth consideration as an alternative paradigm. While this model may be less scientifically coherent, it better aligns with related economic activities and sectors, and so arguably makes more sense from a policymaking perspective.

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10. Allen, M., *Short-lived promise? The science and policy of cumulative and short-lived climate pollutants* (2015) Oxford: Oxford Martin School, University of Oxford.

11. Steffen, W., Fenwick, J. & Rice, M., *Land Carbon: No Substitute For Action on Fossil Fuels* (2016) Melbourne: Climate Council of Australia.

12. Upton, S., *Managing biological sources and sinks in the context of New Zealand's response to climate change* (22 September 2016) NZ Resource Management Law Association Conference, Nelson.

This focus on land-use based sources and sinks could increase implementation efficiencies and provide opportunities for additional benefits like improved water quality, additional habitat development, whole farm systems, and management of soil quality and erosion. Moreover, this paradigm prevents uncertainty in measurement and accounting from interfering with targets for fossil fuel emissions. This framework could co-exist with two baskets thinking, particularly through prioritising action on the long-lived GHGs.

Beyond the prioritising of immediate reductions in CO<sub>2</sub> and N<sub>2</sub>O emissions, we have not developed strong positions on how the two baskets approach should be reflected in specific policies. However, it would clearly influence the design of the Emissions Trading Scheme, and could potentially lead to separate pricing for different gases or sectors, among other alternative mechanisms.

Finally, it is important to emphasise that the adoption of a two basket approach should not delay immediate action on methane. Reducing methane emissions today will help slow near-term warming, reducing damage and buy more time for adaptation. Furthermore, global CO<sub>2</sub> emissions have stabilised in recent years, and must begin reducing immediately in order to be on track to the Paris goals. We are therefore approaching the timeframe in which current methane emissions could have a significant impact on the peak warming.<sup>13</sup>



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13. Allen, M., *Short-lived promise? The science and policy of cumulative and short-lived climate pollutants* (2015) Oxford: Oxford Martin School, University of Oxford.



## 4. Public support and long-term vision

**Q27:** *What approaches, such as regulatory frameworks or policy settings, would help embed wide support among New Zealanders for effective reduction of domestic greenhouse gas emissions?*

**Q40:** *What does your long-term vision for a low-emissions economy look like? Could a shared vision for New Zealand be created, and if so, how?*

We acknowledge the Productivity Commission's observations that:<sup>14</sup>

*Given the importance of the political economy, communicating the importance of the need to transition, as well as the benefits that are likely to accrue to New Zealand as a result, will be critical in mobilising the required social and political will. It is a political reality that if the public does not accept the need to change, as well as the fact that the change is likely to be uneven (ie, it will affect some people more than others), it will be very difficult for politicians to enact policies required to transition to a low-emissions economy.*

*... A shared vision contributes towards enabling political action to implement ambitious policies (such as occurred with the passing of the UK's Climate Change Act), and helps to ensure that policy and institutional decisions are made that are consistent with and committed to this vision and are not side-tracked by vested interests or short-term priorities. As the World Bank (2015) notes, a strategy that lacks substantial buy-in by affected groups is unlikely to be successful.*

We also agree with this statement from the Productivity Commission's UK Climate Change Act research note:<sup>15</sup> *"The UK experience highlights the importance of cross-party support and political leadership in securing ambitious climate change legislation."*

Political leadership and well-designed systems architecture can, in tandem, play a central role towards the development of a shared vision and wider support for effective emission reduction measures.

At present, the inadequacy of New Zealand's systems architecture contributes to the politically-driven, short-term thinking that characterises our approach to climate change. The unpredictability and uncertainty of this approach increases the risk of New Zealand's emissions reduction policies being unnecessarily disruptive, costly, and inequitable in their impact on different sectors and social groups. These undesirable outcomes disincentivise innovation and investment, and undermine public desire for further change.

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14. Productivity Commission, *Low Emissions Economy: Issues Paper* (August 2017), pp 51, 64.

15. Productivity Commission, *Examining the UK Climate Change Act 2008* (September 2017), p 28.

We submit that it is the absence of well-designed systems architecture in New Zealand which has a circular effect of inhibiting *"the required social and political will"* to introduce the very legislative framework that would:

- remedy the cycle of uncertainty and short-termism which undermines wider public support for emission reduction initiatives;
- lead to the development of a coherent emissions reduction plan; and
- better enable the benefits of a lower emissions economy to be publicly communicated and strategically pursued.

Breaking our cycle of uncertainty and short-termism will require political leadership and cross-party recognition that a smarter, more stable approach is possible, in the form of a Zero Carbon Act framework.

The long-term focus of a Zero Carbon Act, backed by cross-party support, would contribute significantly to the development of a stronger shared vision for New Zealand. This vision would be further enhanced by the authoritative and apolitical outputs of an expert Climate Commission.

The Zero Carbon Act's clear domestic targets, structured decision-making processes, and transparent reporting requirements would also create certainty for communities and businesses, promote public engagement, and increase buy-in from affected groups towards the fair and cost-effective emission reduction policies needed to realise our shared vision.

## 5. Data and analysis

**Q31:** *What types of analysis and underlying data would add the greatest value to this inquiry?*

The Productivity Commission's inquiry should gather information on the observable and measurable effects of transitioning to a lower carbon economy (e.g. economic impact, environmental impact) as well as the views and experiences of those intimately involved in, or affected by, this transition. For example, the Productivity Commission already acknowledges there is currently poor data and analysis with respect to *"the values and norms that are relevant to understanding whether specific emissions-related policies are likely to achieve acceptance"*.<sup>16</sup>

To this end, the inquiry should include, for example, community workshops that bring stakeholders together in person in order to obtain qualitative feedback and a deeper understanding of the benefits and impacts of transitioning to a lower carbon economy, particularly with regard to wellbeing.

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16. Productivity Commission, *Low Emissions Economy: Issues Paper* (August 2017), p 56.



# Part Two: Emissions reduction policies

## 6. Essential components of a mitigation strategy

**Q36:** *What are the essential components of an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable?*

**Q30:** *How can adaptability best be incorporated into the system supporting New Zealand's low-emissions transition?*

To be economically and politically sustainable, we believe that New Zealand's emission reduction strategy will need to be comprehensive, fair, cost-effective, environmentally sustainable and consistent with Te Tiriti o Waitangi, as described in our Zero Carbon Act policy blueprint.

Comprehensiveness means taking an economy-wide approach to New Zealand's emission reduction strategy. The strategy must encompass all sectors, drive coordinated decision-making and analysis across government, and be sufficiently funded and resourced.

A fair strategy means giving effect to equity considerations, such as intergenerational justice and the principles of a 'just transition'.<sup>17</sup> In practice, this means adhering to a policy-making framework which ensures that vulnerable communities are supported and not adversely impacted, that there is a just transition for workers in industries where job losses will occur, and that clear signals are given as early as possible to enable communities and businesses to plan for the impact and opportunities of emission reduction policies (as well as the effects of climate change, such as sea level rise).

Cost-effectiveness, as highlighted earlier in this submission, means adopting long-term strategies which minimise cost and maximise benefits for New Zealand. In particular, this means setting targets and plans that avoid passing the cost of transition to young and future generations.

To be economically and politically sustainable, it is imperative that New Zealand's emission reduction strategy considers the holistic environmental impact of transitional measures, not only the extent of GHG reductions.

Te Tiriti o Waitangi must underpin New Zealand's transition to a low carbon economy. Our proposed Zero Carbon Act will honour, and require targets and policies to be made consistently with, the tino rangatiratanga of iwi and hapū enshrined in Te Tiriti.

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17. Just Transition Centre, *Just Transition: A Report for the OECD* (2017)

Finally, as suggested by Q30, New Zealand's strategy must be sufficiently adaptable and dynamic in response to change in technology and international politics. The flexibility of our proposed Zero Carbon Act, which permits the government of day to implement its preferred policy mix to achieve its targets, recognises the importance of adaptability in policy-making. In general, a strategy that avoids over-reliance on any one technology (including carbon sequestration) or source of energy will be more resilient and adaptable.



## 7. Green Investment Bank

**Q23:** *How can New Zealand harness the power of financial institutions to support a low-emissions transition?*

Transitioning to a low carbon economy is going to take capital. We submit that opening a state-owned Green Investment Bank is one way to support this transition.

A major obstacle for businesses wanting to be a part of this change will be accessing the capital needed for them to innovate. A Green Investment Bank could create the right incentives to redirect private capital into the sustainable, low carbon economy. The bank would act as a catalyst for investment in the low carbon economy, allowing people to divest from polluting industries and into the profitable, green investments of the future. This would help ensure New Zealand's transition into the low carbon economy is as smooth as possible.

The UK set up the world's first Green Investment Bank in 2012 as part of a government initiative to set the UK on course to a green economy. Since then, it has become a market leader in green finance, investing in all sorts of established and emerging technologies, from wind and hydro to biofuels and low carbon transport. The bank has led £15 billion (NZ\$24.5b) of investment into green infrastructure,<sup>18</sup> averaged a 10% return to investors in its 2015-16 financial year, financed 30 green projects, produced 20.3 TWh of renewable energy – enough to power 4.9 million homes – and saved 4.8 million tonnes of greenhouse gases from entering the atmosphere.<sup>19</sup>

These results show a clear demand for green financial intermediaries in the market and their ability to achieve significant results, as well as high returns for their investors.

A Green Investment Bank in New Zealand has the potential to be an engine of job growth and a critical driver of the national economy, whilst helping the transition to a green economy. The bank's key priorities would be financing low carbon infrastructure in New Zealand, as well as providing the capital needed for all the innovation opportunities available in the low carbon economy. Another major priority would, of course, be providing adequate returns to investors. This is vital as the fund needs to be making good returns if it is to succeed. To do this, the fund would need to invest in projects that are at the later stages of development, ensuring higher success rates and good returns.

One of the key challenges for New Zealand moving to a low carbon economy is our agricultural sector. While New Zealand farmers have made notable efficiency gains in the last 20 years, agricultural greenhouse gases are projected to rise steadily through to 2030.<sup>20</sup> However, this also creates an opportunity for New Zealand to become a world leader in innovative agricultural solutions and is just one example of the ways that a Green Investment Bank could help in New Zealand's transition to the low carbon economy.

The bank could direct a flow of private funds into this sector using financial instruments such as Green Bonds, allowing the work that is already being done by institutes such as AgResearch to truly take off and spur the innovation needed for New Zealand to not only keep its clean and green image, but also to remain competitive in a global market that increasingly demands ethical and environmentally friendly goods.

With demand for innovative new solutions and research and development into clean and green technologies growing by the day, a Green Investment Bank could help catalyse the shift to a new economy. The longer we hold off, the more the potential to innovate will decline as countries overtake us, making the transition to functional green economy progressively more difficult.

The support of financial institutions, such as a Green Investment Bank, will be a necessary component of a transition to a low-emissions economy, supplementing other actions across government, the private sector, and communities.

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18. Green Investment Group, "What We Do" <[Greeninvestmentgroup.com/what-we-do/](http://Greeninvestmentgroup.com/what-we-do/)> (accessed 29 September 2017)

19. Green Investment Group, *UK Green Investment Bank plc: Annual Report and Accounts 2015–16* (13 July 2016)

20. <<http://www.mfe.govt.nz/climate-change/nz-ets-and-nzs-carbon-budget-in-the-2020s>>

## 8. Transport and urban form

Low carbon transport and urban form has been a focus for Generation Zero since 2012. We have pushed for public and active transport infrastructure to receive a greater share of central government funding. Our local teams have campaigned for public transport and cycleway developments, and quality compact urban design ("density done well"), in Auckland, Hamilton, Wellington, Christchurch and Dunedin.

We believe that these low carbon transport solutions offer huge co-benefits to New Zealand, particularly through improving public health and making our cities more liveable. While electric vehicles are integral to decarbonising transport, simply shifting to electric cars will not deliver anywhere near the same benefits.

A key barrier is that inadequate transport infrastructure, combined with sprawling low-density development, deprives people of the choice to get around without a car. But evidence from New Zealand and abroad shows that when we provide quality choices, people use them. Prime examples include the Northern Busway and upgrades to Auckland's rail network, both of which have vastly outstripped earlier patronage projections.<sup>21, 22</sup>



21. Greater Auckland, "Northern Busway Success" (23 September 2013)

22. Greater Auckland, "Rail reaches 20 million trips" (31 August 2017)