Submission by

to the

Climate Change Commission

on the

Draft first package of advice to the Government

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INTRODUCTION

1. We welcome the opportunity to provide feedback on the Climate Change Commission's ('the Commission') draft emissions' budget as presented in its 31 January Draft Advice for Consultation.

2. We note submissions have also been made by related member-driven organisations ExportNZ and the Sustainable Business Council (SBC) in conjunction with the Climate Leaders' Coalition.

3. We have developed a response to the draft advice following a comprehensive workshop with BusinessNZ and BusinessNZ Energy Council (BEC) members, four sectoral workshops and direct feedback on early drafts of this submission. More about BusinessNZ, BEC and its members can be found in appendix one.

4. We support the objective of transitioning New Zealand and the globe to a net zero emissions future. Our membership supports the aim to contribute to global emissions reduction as business will play the most significant role in achieving those ambitions.

5. We are pleased the Commission acknowledges the role of business and we recommend it reframes its advice to government to better reflect this. We do not see New Zealand's emissions reduction targets as solely government targets, but rather as the basis for a partnership between government and all society's actors who, in order to achieve those targets, will need to commit capital, take risks and change how they behave.

6. We acknowledge the importance of achieving our carbon reduction goals fairly and transparently. As a trading country, we are conscious of the need to show to the world that we are keeping pace with the decarbonisation pathways of our trading partners. However, we also need to recognise that if other countries do not play their part our international competitiveness is at risk.

7. We think achieving the proposed pathway will require a huge effort and cooperation in every part of the economy including, not least, our education system. It will require leadership, not something that can be modelled. Businesses stand ready to work with government on this challenge. That said, there are a number of aspects of the Commission's advice to government we would like it to revisit. We look forward to the Commission's final advice.

8. The following will focus on several high-level issues and address the specific questions the Commission has asked.

PRIMARY RECOMMENDATIONS

The role of the ETS

9. We would like the Commission to be clearer on this assertion:[1]

The Government also has choices around the extent to which it relies on the NZ ETS or other policies to make these emission reductions happen. The more that non-ETS policies are used, the more likely it is that the NZU price in the NZ ETS can be lower while still achieving the same overall amount of emission reductions.

10. We think the ETS should be allowed to do its job and other interventions should follow only where there is a clearly articulated positive net benefit for other non-price policies. Non-price policies should focus on outcomes and promote efficiency; they should not involve specific regulation that disincentivises innovation.

11. Reliance should primarily be placed on policy instruments that act at the system level (e.g., a carbon price) before additional policy measures are introduced. In this way, various markets within that system can collectively adapt to find the most efficient response. In addition, whilst the ETS is a powerful market tool, there may be steps government can take by way of education to reinforce the requirement for behaviour change. However, any policies developed to directly signal the behaviour changes to meet the emissions' targets alongside the ETS should be subject to a cost benefit analysis and regulatory impact statements.

12. With respect to the reduction in free allocations of carbon credits to emission intensive trade exposed industries, the Commission will be familiar with the argument that companies that transfer elsewhere in the world may well end up using more fossil fuel, especially if they move to countries with no emissions trading scheme. We are extremely concerned about carbon leakage but want to highlight that the loss of industry from New Zealand will also be a loss of jobs. We understand the modelling assumes full employment with no consideration given to the possibility that the workforce will likely reduce as a result of the changes to the ETS and additional changes the Commission is recommending.

13. We reiterate – our firm view is that the primary tool for managing behaviours and therefore emissions is the ETS.

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[1] Climate Change Commission, 1 February 2021 Draft Supporting Evidence for Consultation Chapter 17 page 5

Modelling and economic outcomes

14. The Commission's draft advice paints a comprehensive picture of what needs to be done for New Zealand to get to the lowest gross emissions possible and in a way that meets our own goals and our international commitments. However, the outcome foreshadowed in the advice relies on that pathway being followed and there are many things that could go wrong. We would like to see more scenarios and greater sensitivity testing of possible economic outcomes in the pathway to low emissions as per the Commission's proposed budgets. We would like the Commission to suggest to government the tests government should undertake as it looks at the advice through a broader lens. It might be that the Government will use the Commission's models to carry out those tests while it works through the plan, and that would be acceptable. The Commission should also note to government that any adoption of policies set out in the advice should still be subject to normal cost benefit analyses and regulatory impact statements.

15. There are several assumptions in the modelling that should be tested because if they are wrong, the impact on GHG reduction and economic growth and their potential to cause hardship could be significant.

    — Carbon price: The advice signals that the long-term abatement cost for investment needs to be $140/tCO2e by 2030 and the carbon price might be in the order of $170/tCO2e by 2030 and we understand the carbon price must reach these levels to drive many of the changes required. However, there is no recognition of the risk in this scenario. Businesses that find it hard to abate will bear a cost. Businesses and individuals may not have the wherewithal to respond to a rising carbon price even with the policies government pursues. If the carbon price does get ahead of the economy's ability to respond, the costs will be higher than modelled and this effect may be worth testing.

    — The workforce: The C-Plan modelling is based on the assumption of a full employment model. We are concerned that the Commission's analysis of the potential workforce impact requires further work to fully inform the risk to the labour market given the scale of the planned structural change. No analysis is provided of what the new jobs will be, the skill level required, how our education system will prepare the workforce, how job training will adjust and, critically, whether there will be enough jobs to sustain the workforce as we transform to a low carbon economy. The nature of 'green jobs and the requisite skill shift are not articulated. The plan also appears overly optimistic in its assumption that the education system will respond quickly to the changing nature of industry and be able to deliver a skills pipeline able to meet workforce demand from the local labour supply. The Commission should advise of the risk to the workforce that will accompany the transformation to a low emissions economy, and this should be assessed by the Government before the Commission's policy recommendations are adopted. We also

suggest making the assessment a time-critical action which should also advise on the options available to government to mitigate these risks.

— Immigration: The modelling also does not recognise New Zealand's reliance on immigration to enable companies to find skills not readily available but particularly relevant to industries such as oil and gas which have a highly mobile global workforce. The Commission has factored a continuation of net immigration at a similarly high level as in recent years into its modelling. A reduction in net immigration would make emission reduction goals easier to achieve. We suggest that this is a scenario that needs testing in the Commission's modelling.

16. We are left still wondering:

— How important each assumption might be for the overall economic impact?

— How these assumptions were generated?

— Whether alternatives might be considered for future analysis and advice?

17. Getting the baseline right in the Current Policy Reference (CPR) is an essential part of CGE modelling. The more ambitious the baseline, the lower the economic impact of meeting the net zero targets.

— Are all the assumptions consistent with a carbon price of $35 in real terms for the entire period to 2050? For example, is that the basis for MPI's forestry removals and MoT's EV uptake?

— Is it correct that CPR assumes world action on carbon is stronger than New Zealand's action?

18. Three important assumptions were not reported at all: real wages, land prices and rates of return on capital.

19. For transport, we would like the Commission to stress test its assumptions on EV uptake. The decarbonisation of the transport sector relies heavily on the switch from ICE to BEV light vehicles, yet we see real risks with securing the BEV supply the Commission trajectory relies on. If the assumed BEV uptake does not bear out, other sectors will have to step in to offset the residual emissions. This may potentially require higher marginal abatement costs, thus affecting long-term GPD.

20. For HIP, several assumptions rely on private decision makers, availability of technology and coordination that could undermine the actual emissions reductions and GDP outcomes. Assumptions that should be better tested before the advice goes to the government include:

— Tiwai will leave in 2024, and Methanex will leave in 2029, providing electrification capacity to the rest of New Zealand

- New Zealand will have access to sufficient levels of decarbonisation process heating plant, expertise, and capital for businesses to undertake their required transition before 2035, and 2050
- Coordination between EDBs and end users is seamless, causing no delay to electrification of process heat
- There is sufficient generation capacity in the North Island, coming online at the appropriate time, to electrify all process heating plant, negating the need for the existing gas network. There is no hold-up due to any RMA issues
- The capacity of energy storage in New Zealand will allow peaking stations to be exited within the required timeframes. This in part decouples electricity and carbon pricing
- Electricity pricing remains relatively low (at current levels) meaning businesses can economically decarbonise regardless of the carbon price
- Building energy usage decreases due to efficiency improvements in new and existing stock, while the total building footprint increases to meet increased housing demand.

21. For waste, based on international metrics, there is large scope for the reduction of waste to landfill and a significant increase in waste recovery which the modelling does not test.

22. In the agriculture and forestry areas, the key assumption and the key risk are whether the price signals the modelling uses will lead to the precise volume of land use change the Commission relies on. For example, what NZ ETS prices and other incentives realistically lead to land use change from livestock and agriculture to horticulture and exotic and native forestry. We would also like to see the Commission test:

- whether its assumptions about NZ ETS prices are consistent with its forecast of reducing exotic forestry planting from 2030
- whether the availability of land suitable for native forestry planting per year will double from existing levels from 2030
- what price signals will lead to the conversion of land to horticulture nearly quadrupling from existing levels from 2024 onwards.

A partnership between government and business

23. Many of the actions New Zealand must take to achieve emissions budget levels will be made by the private sector. Businesses will have to change their behaviour, make new investments with different criteria, and take some of the commercial risk that will arise from the quest to meet the emissions budgets.

24. We would like to see the Commission's advice to the Government framed more around a partnership between government and business than is currently the case. Delivering

on the pathway will require businesses to make many decisions consistent with the Commission's expectations, to make investments and risk capital and encourage customers to change their behaviour to be consistent with the pathway's intent. We think an additional principle should be included to reflect the key role businesses play in achieving the proposed pathway.

A vision of an integrated energy system

25. We agree with the Commission's suggestion that a 100% renewable electricity target should be aspirational. However, we think the Commission's recommendation should go further. Given the Commission's insight into the pathway to low emissions and the role of a renewable energy target, we ask the Commission to develop its recommendations to government to include the development of a vision of an integrated energy system. By this we mean asking government to look at the roles of electricity, natural gas, hydrogen, liquid biofuels and biogas, and the part demand side participation across all forms of energy supply could play in an integrated system with a significantly lower emissions profile overall.

26. The BusinessNZ Energy Council (BEC), BusinessNZ's brand focusing on the transformation of energy, has a great deal of experience in modelling energy scenarios. This is quite a different approach to forecasting outcomes, which is what most scenario exercises do. BEC engaged with the Paul Scherrer Institute - which utilised the World Energy Council scenario model - and energy leaders from across the value chain, including academia, government, and business, to develop a New Zealand specific version of the model – TIMES NZ. Some of the output from that work appears in this submission.

27. We would welcome the opportunity to work with government to set out plausible, internally consistent models of the integrated energy system that could be used by government to support energy policy. First, we would like the Commission to develop the idea of an integrated energy system vision for its advice to government and would happily work with the Commission to help it to do so.

FURTHER DETAILED ANSWERS

Consultation question 1 Principles to guide our advice

28. We support the principles the Commission has relied on but suggest there is an additional principle along the following lines that would help achieve its budgets:

— **Principle 8: Recognise private sector role.** Many of the actions New Zealand will (must) take to achieve the emissions budget levels will be taken by the private sector. Businesses will have to change their behaviour, make new investment with different criteria, and take some of the commercial risk that will arise from the quest to meet the emissions budgets.

Consultation question 2 Emissions budget levels

29. We support the goal of net zero emissions and support the Commission's proposed all gas net emissions budget in principle. Nevertheless, there is a risk that some of the sector reductions modelled are overly ambitious. Consequently, in the future, more pressure might be brought to bear on other sectors if the modelled reductions are not achieved. However, we recognise that the time to act is now, and that risk should be balanced with opportunities for the business community.

Consultation question 3 Break down of emissions budget

30. We support the need for emissions budgets as indicated by the Commission. However, rather than noting a specific target for each of the long-lived gases, we propose that this should be left open. The ETS should act in this case and drive the specific CO2, NO2, F-gases, and methane outcomes rather than specific targets.

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

31. While we understand that emissions budgets should be supported by domestic action, we do not support the Commission's recommendation that the limit on offshore mitigation should be zero for the first three emissions budgets.

32. The international market for carbon units is still a work in progress under Part 6 of the Paris Agreement. While a system of unit quality assurance is being developed, it makes sense to limit the use of international credits in the short term. However, it is unclear how the Cost Containment Reserve (CCR) volumes will be backed up over the medium term without access to this market. In previous submissions on the CCRA we said: "We therefore urge the Government to accelerate its work on identifying options for accessing international carbon markets (with safeguards on integrity) and require the Government to provide more clarity on how CCR volumes will be sourced if access to international markets is delayed."

Consultation question 5 Cross-party support for emissions budget

33. We support the Commission's enabling recommendation 1 that the Minister for Climate Change seeks cross-party support on emissions budgets. We endorse the Commission's recommendation that in addition to the existing requirement for the Minister to consult representatives of political parties on emissions budgets before these are notified, the Minister should also seek to ensure that the emissions budgets are debated in the House of Representatives so that the positions of each political party are on the parliamentary record.

Consultation question 6 Coordinate efforts to address climate change across Government

34. We support the Commission's enabling recommendation 2 to coordinate planning, strategies, and funding requirements to reduce emissions across ministries and agencies. We agree with the proposal that:

    — Government should include in its first emissions reduction plan, due by 31 December 2021, policies and strategies that will set New Zealand up to deliver the second and third emissions budgets and 2050 targets.

    — Government should include in its first emissions reduction plan, due by 31 December 2021, the Government agency and Minister responsible for delivering on each of the policies adopted.

    — Government should establish, by no later than 31 March 2022, Vote Climate Change.

Consultation question 7 Genuine, active, and enduring partnership with iwi/Māori

35. We support the Commission's enabling recommendation 3 that, in transitioning New Zealand to a thriving, climate-resilient and low emissions future, central and local government should take action to ensure a genuine and enduring partnership with iwi/Māori.

Consultation question 8 Central and local government working in partnership

36. We support enabling recommendation 4 that central and local government should work together through the development of necessary partnerships between them. We support the proposal that government should have published a work plan by 31 December 2022 outlining how alignment and funding will be addressed and the milestones for achieving this plan.

37. We consider that it is entirely appropriate for government to provide funding and financing mechanisms particularly where changes in policy amount to a regulatory taking or impact on property rights i.e., impact on business viability arguably, for potentially the wider public good.

38. We consider the Managed Retreat and Climate Change Adaption Act provisions relating to compensation where property is taken, or its use or value are restricted, require strengthening (in the case of the Act's section 85, this means the reversal of the current presumption of no compensation). Currently, compensation is the only relief available and at that, there is an exceedingly high threshold to be met. Compensation

will be paid only if the taking or proposed taking would render the land incapable of reasonable use.

39. If local authorities are required to provide compensation for regulatory takings, we would expect them to take more care when regulating private interests in the public interest. The need for regulatory takings might then be expected to be low, perhaps based initially on one or two test cases.

Consultation question 9 Establish processes for incorporating the views of all New Zealanders

40. We support enabling recommendation 5 that central and local government develop new and more effective mechanisms to incorporate the views of all New Zealanders when determining how to prioritise climate actions and policies to meet emissions budgets over the next 30 years, providing for a more inclusive policy development. However, and to reiterate a point made earlier in this submission, the heavy lifting will have to be done by business. There is a risk that business decisions and timeframes are impacted by over-consultation.

Consultation questions 10 & 11 Locking in net zero

41. Questions 10 & 11 refer to the Commission's findings that current policies will not achieve net zero and that that is the Commission's focus. This is the section where the Commission notes the focus on net emissions "would fail to drive meaningful decarbonisation and instead use up land resources for the purpose of offsetting avoidable emissions". This leads to a distinction between the roles of new, exotic forests and new, permanent native forests. It also distinguishes between decarbonising sources of long-lived gas where feasible and focusing on the work of carbon sinks to offset residual long-life gases.

42. The Commission notes that achieving these key transformations will "require strong accelerated and sustained action to 2050". We agree, but as businesses we are left wondering whether the ambition is realistic and whether there is a risk the required intensity of action will be diluted by other priorities. One example of risk is the emphasis on relying so strongly on native planting.

43. The cost of establishing a greenfield native forest, as proposed, is high and likely to be between $5,000-$10,000 per hectare. There is also a high risk of failure, especially in drier areas, and a requirement for ongoing pest control. Exotic forests absorb carbon at 3-7 times the rate, and have a higher overall capacity per hectare, than native forests. This is especially so, if the trees are grown for longer periods, or as permanent forests. Good examples are growing redwoods or eucalyptus as permanent forests, or pine forests for periods of 100 years or more. Using exotics would mean we need to

afforest a much smaller area than proposed by the Commission's draft report, and at much lower cost.

44. We note the Commission's plan leads to more afforestation of land overall. Combining this with appropriate native planting could help achieve the best of both worlds - a mixed forestry model is adopted to sequester carbon quickly and utilize best-fit productive forests, as well as to link the ecological and environmental co-benefits associated with native planting. We would like to see the Commission test the proposition that native afforestation is cost effective and a good investment of taxpayer funds and be clearer on the point in its advice.

Consultation question 12 Our path to meeting the budgets

45. We support the overall path the Commission has proposed to meet the first three budgets. However, the proposed budget figures are a function of the modelling which is, in turn, a function of a number of assumptions.

46. We expect the modelled outputs to be sensitive to industry exits on specific dates, the availability of gas and the need for coal during the transition, wholesale electricity prices, the electricity sector's ability to deliver security of supply, biomass supply, the costs faced by hard to abate industry and the degree to which polices can target behaviour that the advice assumes the ETS will not.

47. We are also concerned that the risks of the proposed path being followed are significantly understated and the consequences of the economic output being met are high. We would like to see the development of sensitivities on the elements of the economic outcomes in the final advice so government can judge the risks and the consequences of not meeting the pathway. The Commission should acknowledge that a cost benefit analysis and regulatory impact statement (RIS) approach has not been applied to its policy recommendations and should be.

Consultation question 13 An equitable, inclusive, and well-planned climate transition

48. We support the Commission's finding that the transition to a low emissions society needs to be well-signalled, equitable, and inclusive in order to maximise opportunities, minimise disruption and inequalities, and be enduring as a result.

49. We support the recommendation that the Government develop an Equitable Transitions Strategy linked to the Government's Economic Plan which outlines:

    — How the Government will build the evidence base for assessing the distributional impacts of climate change policy decisions that align with tikanga values

— A process for factoring distributional impacts into climate policy and designing social, economic and tax policies in a way that minimises or mitigates negative impacts

— Guidance for developing localised transition plans customised for, and co-developed with, local government and affected communities.

50. We look forward to responding to the draft Equitable Transitions Strategy linked to the Government's Economic Plan.

51. We are concerned at the lack of detail around the future workforce and the impact on businesses as per necessary action 1. As we state above, we would like to see more sensitivity analysis done on the economic modelling aspect of the advice before the advice is finalised for the Government.

52. In the section "How can this be managed through improving productivity, education, skills and innovation?" The Commission states [1]:

The education, and science and innovation systems in Aotearoa are critical for ensuring low emissions economic growth.

53. The approach taken to shaping the emerging workforce and the requirement for the education system to educate and train that workforce is treated lightly. These matters pose a great risk for New Zealand, particularly given that the education system is currently going through a significant reform likely to come to fruition as the Commission's industrial recommendations need to be announced. Disruption across the education and training system occurring at the same time as economic disruption has the potential to further exacerbate skill shortages that currently exist across several industries, creating a handbrake to increasing productivity. If there is less work for the workforce and if the education system does not adjust for the jobs that do emerge, the cost to New Zealand will be significant. The modelling is light on assessing this risk and the Commission has glossed over the risk in its advice. We see no clear articulation from either the Government or the Commission that the new jobs will require a workforce commensurate with New Zealand's population.

54. Further, the use of new technologies from overseas and the need for immigration flows to support knowledge transfer and adoption are neither acknowledged nor explored. These matters should be addressed before the Commission's advice is forwarded to the Government.

Consultation question 14 Transport

55. We have certain observations about some specific positions and some omissions.

1. Climate Change Commission 2021 Draft Advice for Consultation p 96

56. Overall, we strongly caution the Commission against being too prescriptive on the de-carbonisation options for different transport uses and would like the tone of the advice to be technologically neutral. We would like the Commission to talk about the opportunities but also to give more clarity on how trade-offs are to be made between the various options for transport decarbonisation, and the cost implications of those decisions. Typically, marginal abatement costs (MACs) are used to determine least-cost abatement options, and we would like to see these presented in the Commission's analysis. The carbon-price trajectory alone does not allow us to understand how prices have determined decisions on abatement options.

57. We query if the risks for delivering the Commission's trajectory have been adequately identified. Our assessment is that the Commission's chosen path to 2035 is more ambitious than our own modelling (see next section on TIMES-NZ). We are not disputing the Commission's estimates but would like to ensure all key risks that come with greater ambition have been uncovered so that the advice on government actions fully takes account of costs, benefits, and potential trade-offs.

Comparison of Commission's and TIMES-NZ modelling of transport

58. As part of the TIMES-NZ modelling project, the BusinessNZ Energy Council, businesses, academia, and government agencies have worked together to prepare two potential scenarios of New Zealand's energy future to 2060. These scenarios – Kea and Tui – explore how the future energy mix might look, and the range of trade-offs and choices we might need to make along the way.

59. For this response, we have compared our TIMES-NZ estimates on transport emissions with those presented in the Commission's analysis, as shown in Figure 1. The figure shows that the Commission's estimates of the potential emissions reductions in transport are much more ambitious than those from TIMES-NZ. This is evidenced by comparing the more conservative and the more ambitious scenarios separately, i.e., Tui with Headwinds, and Kea with Tailwinds, respectively. It can also be seen that the expected emissions reductions under the Commission's chosen path to 2035 are higher than in TIMES-NZ's most ambitious scenario (Kea). We therefore query whether the Commission's scenarios represent a realistically achievable rate of change. Figure 2 shows that from 2030, the pace at which the LPV fleet can be electrified is greater in the Commission's chosen path to 2035. We would like to see some stress testing of assumptions made around EV uptake, as discussed further in the section on BEV below.

Figure 1 – Comparison of transport emissions in TIMES-NZ and Commission modelling

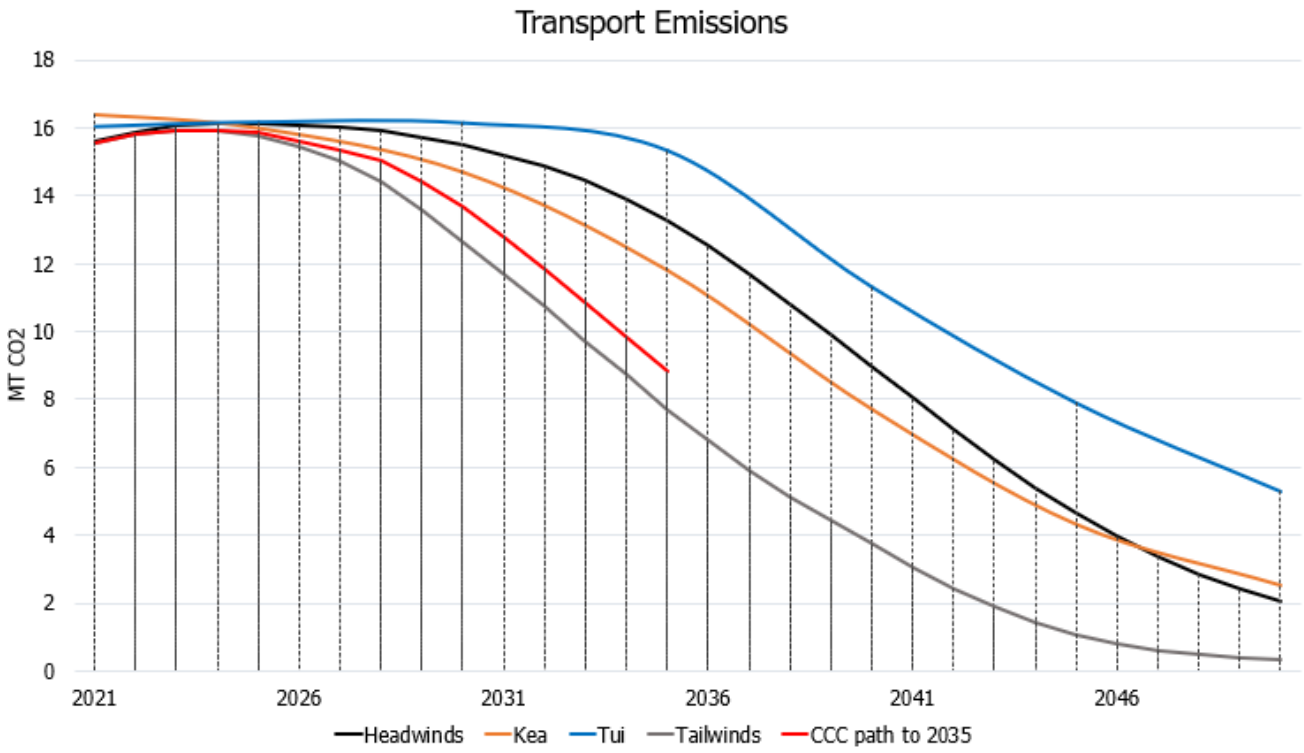
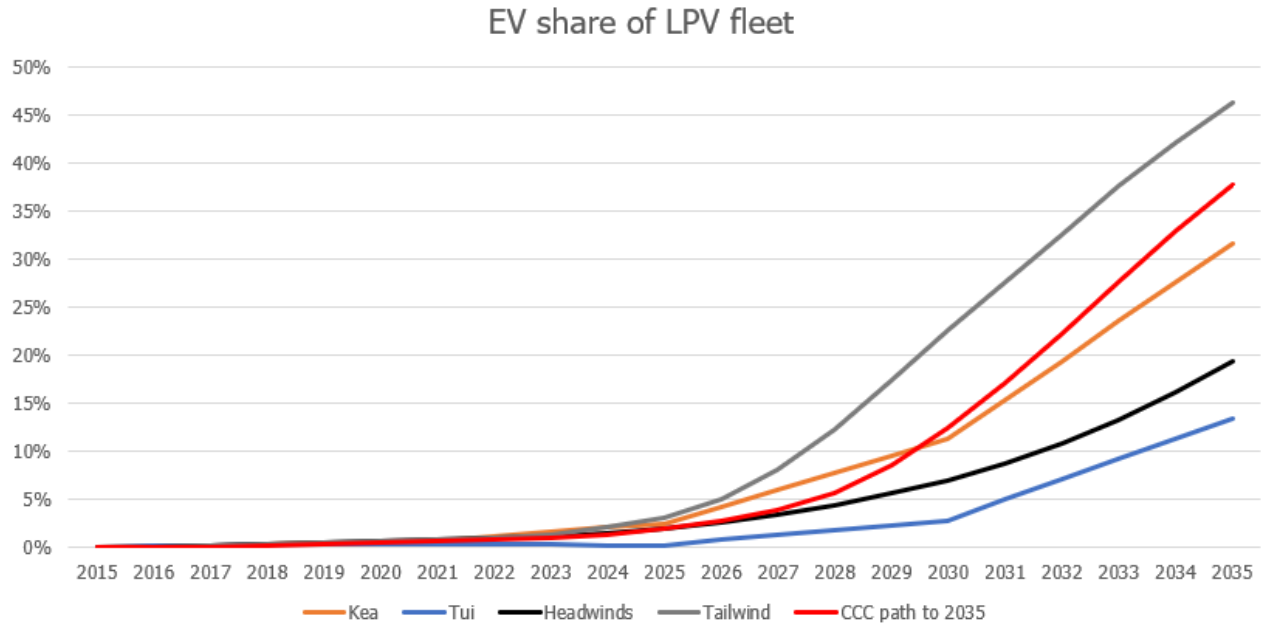


Figure 2 – Comparison of EV share of LPV fleet in TIMES-NZ and Commission modelling



Source: BusinessNZ analysis

Develop an integrated national transport network to reduce travel by private vehicles and increase walking, cycling, low emissions public and shared transport

60. We support developing an integrated national transport network and agree it will require a regional approach allowing commercial providers and Councils to organise solutions that best suit local circumstances. The expectation placed on Councils should be that first- and last-kilometre solutions are in themselves low-emissions, and that the way they are organised should allow travellers to easily access low emission solutions. Nonetheless, we also recognise there are risks and costs in developing such solutions which would need a close focus and tight approach to avoid poor and costly outcomes and should also be subject to a cost benefit analysis and economic case studies.

61. Although we support in principle the advice for encouraging working from home arrangements, we think such decisions should also consider the social and wellbeing impacts of reduced social interaction. Urban planning may be required to facilitate the development of localised co-working spaces to mitigate the loss of social interaction. A sense of community and social connectedness should be encouraged in any transportation and urban planning.

62. We support the development of a mobility strategy and emphasise that the strategy must provide clarity on the timelines over which lower-carbon transport options are introduced. Changing behaviour is a deliberate choice informed by the alternative infrastructure that might or might not be expected to become available. We need a strategy that is transparent about when such options can be realistically achieved.

63. Although we generally agree with the recommendation of improving mobility outcomes, the transformational element of this change needs to be highlighted more strongly. We think there needs to be a shift from the historical focus on supply-side interventions (e.g., increased supply of infrastructure) to actions that drive a demand response. Actions would need to be oriented towards increasing vehicle occupancy and providing reliable and integrated services for urban mobility through intelligent transport systems. This is a transformational change that will require a complete rethink of how New Zealand's transport networks operate, to make them smarter and more integrated. This transformation will also require incentives to encourage subscribing to new transport system services, as the convenience of urban travel by personal car will be hard to replace. This kind of strategic thinking around mobility needs to be taken up now, as capital investment decisions are being made nationally and locally. Expedience is also required because the needed behavioural change will take time to occur. We would like these aspects to come through more strongly in the Commission's advice.

64. To enable the transformation above, a good understanding is also required of the factors that drive mobility choices in the New Zealand context, and how they differ by location and personal circumstances. We would like the Commission to recommend

relevant research is undertaken to ensure that the measures designed to shift demand or modal choices are effective.

Accelerate light electric vehicles uptake

Electrification

65. We agree that the Government should be encouraged to provide ambitious but realistic targets for the electrification of the light vehicle fleet in particular. Supporting policies should ensure vehicle importation is made as easy as possible. As technology costs continue to fall, upfront costs will not be a barrier when choosing between ICE and low-carbon options. Electrification will play an important role in decarbonised transport, and because the technology for EVs is more advanced than for other low-emissions alternatives, regardless of the end mix of low emissions fuel types in 2035, we should target accelerating light vehicle electrification.

66. Advice on the pace and the nature of transport de-carbonisation should be grounded on evidence of vehicle fleet turnover by different vehicle classes and types of ownership. For example, the turnover of privately-owned vehicles is likely to be lower than for publicly owned or commercially owned vehicles. The higher turnover of commercially owned fleets is an opportunity to increase second-hand EV supply in the New Zealand market in time (whilst also ensuring the safety standards for these vehicles are appropriate, as discussed further below).

67. With decarbonisation efforts intensifying in jurisdictions worldwide, competition for BEV imports is also growing, currently creating global production constraints as the market is developing. The Commission's vehicle electrification ambition is large, and there is a risk that electrification on such a large scale will not be realised due to constrained global EV supply. Therefore, the Commission recommendations need to direct and align policy with how we might overcome these challenges and mitigate risks. Stronger policy action to support EV uptake would send clear market signals to global vehicle manufacturers and to domestic importers. This would increase the attractiveness of New Zealand as a destination for EVs and mitigate some of the supply risks.

68. We agree that this question needs to be dealt with in partnership with the private sector, but for the purpose of this advice we think that the uncertainty around EV supply to New Zealand needs to be better recognised and policy advice to mitigate EV supply risks should be a focus for the Commission. Given the great emphasis placed on the electrification of road transport, any lags in supply could significantly affect the ability to meet budgets.

69. We support introducing an emissions standard for vehicles entering New Zealand. There is a real risk that New Zealand could become a dumping ground of older BEVs as other countries decarbonise their fleets. The standard should help mitigate the risk.

However, the quality of vehicles entering New Zealand should be measured not only by their emissions intensity, but also by their safety parameters, and the extent to which car components can be integrated into a circular economy at the end of vehicle lives. We would like to see greater recognition of such issues that are not specifically related to emissions.

70. There are tax reform initiatives that could remove some barriers to the adoption of specific actions. The Commission could advise on removing the current disincentive to the provision of electric vehicles to employees which arises due to the way fringe benefit tax on employer-provided motor vehicles is calculated. It could also ensure that rules allowing for tax deductibility of, or the ability to provide non-taxable allowances to compensate for expenses incurred when working from home, are clear and consistent given the increased prevalence of working from home.

71. Last, we support the advice for a collaboration between the public and private sectors to roll out EV battery refurbishment, collection, and recycling to ensure the electrification of the fleet is sustainable. We discuss this further in the consultation question 18 on waste.

Equitable transition

72. With regard to actions for an equitable transition, these should be time critical. The timeline for electrifying light passenger vehicles is ambitious, and as we accelerate to reach the target, we cannot afford turning the corner without due consideration of equity impacts along the way. The Government must ensure that low-income households, people with disabilities, and those who live in remote areas can also benefit from electrified passenger transport. We do not want the transformation in transport to perpetuate existing inequality. Instead, we want these transformations to be an opportunity to empower parts of the society that have previously been disadvantaged.

73. It will be important for EV uptake to be supported by smart charging capability. Smart charging can shift EV charging demand away from peak demand periods enabling higher network utilisation and deferring network upgrades, resulting in lower electricity prices to consumers. As energy bills make up a larger proportion of low-income household expenses, households stand to gain a lot from reduced energy bills. We would like the message on an equitable uptake of EVs to come through more strongly in Commission's advice.

Increase the use of low carbon fuels for trains, ships, heavy trucks, and planes

74. With commercial vehicles and heavy freight, we caution against being too prescriptive. The cost issues are the same as for light vehicles but the timing and mix of fuel sources will depend on a variety of developments along the way.

75. Low-carbon fuels have a role to play in helping decarbonise transport sectors where alternative options are not available in the short and medium terms, e.g., rail, marine and aviation in addition to heavy trucks. However, this should not take away the focus from other low-carbon fuels, e.g., hydrogen or electrification. We support the Commission's recommendation on introducing low-carbon fuel standards as a technology-neutral policy, and we think this should be a time-critical necessary action. This would expedite the policy support needed for scaling-up low-carbon fuel uptake.

Liquid biofuel

76. There is a viable production pathway to 2025 using local feedstocks for sustainable aviation fuel (SAF) production. For marine and rail, we observe that the Commission's modelling of the path to 2035 allows emissions from these sub-sectors to increase relative to current policy (which we interpret as due to increase in freight volumes, including a mode shift away from road). Although these emissions allow the budgets to be met (as they are relatively small in the context of transport as a whole), this outcome is clearly inconsistent with the overall trajectory. After all, these sub-sectors will be expected to decarbonise to retain their social licence to operate.

77. We therefore think a time-critical necessary action is for the Government to first research the biofuel opportunity in New Zealand and undertake a feasibility study on producing biofuels in commercial quantities for different types of transport uses. The biofuel opportunity for transport should be researched as part of the bioeconomy strategy discussed further below in the HIP section. The research and the feasibility study will provide clearer evidence on feedstock availability, the strength of demand and the commercial viability of biofuel conversion technologies over a specific timeframe. It will also help identify the major constraints in supply chain development (e.g., access to land) and determine the optimal allocation of feedstock where there is competition for it from other industries. We would like to see this package of work being undertaken in collaboration with the private sector to identify the policy and investment settings needed to develop the domestic production of biofuels. There would also need to be a technical working group to address the issue of OEM and the regulatory approval of final fuels.

Other low-carbon fuels

78. With regard to hydrogen, we think the Commission should be more optimistic. For long-haul heavy freight, hydrogen is more appropriate than BEV due to payloads. Some of New Zealand's largest freight carriers have already started procuring hydrogen fuel cell electric trucks.

79. We also think that assumptions on the potential for shipping electrification, with emissions disappearing by 2050, are too ambitious. For ships, the focus should be on the major gains that can come from incremental change as new ships are designed and produced, as well as from the optionality of drop-in biofuels.

Consultation question 15 Heat, industry, and power sectors (HIP)

80. Overall, we support the thrust of the package of recommendations and actions for the HIP sectors but there are several points we would like the Commission to reconsider. These include areas that could be strengthened and points where the desired outcomes could be made clear, but the relevant sector is left to find the least cost most effective route there.

National Energy Strategy

81. Siloed thinking risks unintended consequences and poorly allocated resources. Interconnectivity between the electricity, industry and transport markets is already emerging, and throughout the economy the carbon price is binding decision-making together.

82. We therefore support the development of a long-term whole-of-energy strategy to decarbonise the transport, industrial, primary, commercial, and residential sectors, developed in conjunction with business. Such a strategy needs to be comprehensive, and prompt, to allow businesses to plan for their own transition. We think the Commission should recommend a strategy that sets a vision for all parts of the sector, including electricity, natural gas, alternative fuels including biofuel, hydrogen and other power fuels, demand side participation and any other aspect associated with meeting our energy needs. All these energy sources and energy management sources are in different stages of maturity and will play different roles in the future. Critically, they are integrated and all parties both on the supply side and demand side would benefit from seeing a high-level plan of how these energy sources might evolve. Below we outline the work we have been doing around understanding our integrated energy sector out to 2060.

83. The prospect of increasing complexity in energy markets suggests caution in designing policy frameworks. The sector-developed TIMES-NZ model analysis is useful to help New Zealand think about how the future energy mix might look, and the range of trade-offs and choices it might need to make along the way. Energy transition needs technology and society working together for the best outcomes. These models can help energy leaders manage uncertainties and make more informed decisions in a world where multiple futures can play out.

84. The strategy should underpin the policies and market necessary to achieve a resilient and low carbon energy future. An informed and holistic approach from government with respect to the energy sector is needed. Policy makers, businesses and consumers need more timely analysis and delivery of insights. We will look to leverage off the unique capability that resides in the TIMES-NZ model. The TIMES-NZ model is well-placed to assess the complex interactions in New Zealand's energy system and most value will be gained by using the model to move boldly and smartly together to engage effectively with many diverse stakeholders in the energy system transition.

85. We are concerned that the role of low carbon emissions and clean fuels (such as biofuels, hydrogen, and other power fuels) has been largely excluded from the Commission's advice. We see there is a place for these, considering liquid, gaseous, and solid fuels for blending with and the replacement of fossil fuels, in line with many other international agricultural economies.

86. We would like to see a strong low carbon emissions fuel connection to sequestration and planting strategies to give businesses clarity on the forward availability of alternative solid fuels.

Repurposing infrastructure to support decarbonisation

87. We would like the Commission to consider the opportunity to repurpose existing infrastructure to support New Zealand's journey to net zero carbon by 2050. Any regulation to ban new gas connections could lead to stranded assets – such as our current gas infrastructure in the North Island. Biogas is widely used around the world and existing infrastructure accommodates it. The Commission should be fuel agnostic i.e., focused on emissions outcomes. We urge the Commission to reframe necessary action recommendation 9c around the emissions profile of the gas used, thereby allowing the owners of the assets the ability to pursue these other options.

88. Continuing to use gas infrastructure and appliances has real value because:

- It helps to fund the infrastructure required to meet other uses of gas that the Commission acknowledges will need to continue for decades to come (such as high temperature process heat and electricity peaking and dry-year cover)
- It promotes consumer choice. We know that consumers value their gas connections and appliances for a range of different reasons and purposes (controllable flame cooking, instantaneous water heating that never runs out)
- It minimizes stranding and replacement costs. By decarbonising gas fuels, this will avoid the cost of replacing or displacing existing gas infrastructure as well as household internal plumbing and appliances
- It increases energy system resilience. One of the key strengths of the New Zealand energy system is its diversity of supply sources and distribution channels. This is worth preserving.

100% renewable electricity supply

89. We suggest the Commission restate the cost of pursuing the 100% renewable target, so it can be seen in the context of the Commission's broad advice. We would like the Commission to highlight this recommendation alongside principle 4: avoid unnecessary cost. The advice echoes the advice of the Interim Climate Change Committee to leave the 100% renewable electricity supply target as aspirational. The Commission said:

Going from 99% to 100% renewable electricity only reduces emissions by a small amount (less than 0.3 Mt CO2e) at an emissions abatement cost of over $1,200 per tonne of CO2e. It is also very likely to result in much higher retail electricity prices than in the business-as-usual future.

90. We also note that while the last percent of emissions reduction from electricity is high cost and reduces emissions finally by a small amount, it ignores the degree of difficulty the market will have in delivering security of supply without any recourse to thermal for any role e.g., peaking, or dry year risk. Given the emphasis the advice puts on electrification, there is a case for greater security of supply in electricity, not less. In our TIMES-NZ narratives we noted:

Careful investment in the resilience of our electricity system is required to ensure the wider economic reach of electricity is not compromised by the very problem it is trying to fix. Climate change will bring a stormier, windier future. While renewables are now more affordable, a big question is how to make them secure when they are heavily reliant on weather patterns.

91. Government has high expectations of the market under five separate and enduring public policy objectives: adequate investment, efficient market transactions, security of supply, equity, and the environment. The effect of the 100% renewable electricity policy (a response to the environment policy objective) is to create anxiety that the market may not deliver seasonal security of supply – often referred to as dry year risk. If government invests in a state-funded project as the result of the NZ Battery investigation, it will have to do so in a way that continues to meet the market's other policy objectives.

92. Our advice to government is that all opportunities to address the dry year risk must be considered. We are firmly of the view that the dry year solution must include solutions the private sector can deliver. There has been considerable discussion about Lake Onslow as the answer. We believe this option needs to be fairly compared with a range of other current and emerging energy storage technologies, including chemical battery technology as well as hydrogen options. There is a need for a wide range of technologies to be considered. We suggest a range of geographies for both centralised and decentralised options to incorporate risk management as a co-benefit. We urge the Commission to recommend that government works with the private sector so that the most cost-effective solutions are brought to the market and that government re-entering the wholesale market is the last resort.

93. However, we are concerned about the possible impact of government persisting with the 100% renewable electricity target. The wholesale electricity market is an "energy only market" and was created without the constraint of supply having to be from renewable sources. It has delivered security of supply to date. The sector is making great strides in replacing fossil fuels as mid merit and base load electricity generation. However, it would be rash to remove the option of fossil fuel fired generation for

peaking and as dry year back up before the sector is confident that it can otherwise deliver security of supply and reliability. The remainder of the Commission's recommendations rely heavily on electrification, and by implication demand will rise significantly, so a great deal of investment in renewable generation is required. It would be unwise to risk putting undue pressure on the wholesale market by forcing it to go completely without fossil fuel back up prematurely. We submit the Commission should say that explicitly.

60% Energy Target

94. Targets can be helpful but need to be backed by robust policies aimed at achieving outcomes. Targets are helpful to the extent they have widespread buy-in, identify an overall direction of travel that helps frame the actions of market participants and embody the right balance of trade-offs between the range of potential outcomes sought. Such targets help business, local government, and consumers gauge commitment levels. But targets can also make government a hostage to fortune and, since political costs can be hard to change in practice, risk raising the cost of meeting emissions targets or reaching targets at all.

95. We would like to see more commentary around the need for more efficient consenting pathways for both renewable generation projects, and for transmission and distribution infrastructure to move this energy to where it is needed.

96. Mandatory targets with hard and fast plans to achieve them can easily become inflexible millstones that stifle innovation and misdirect resources. Balance is required as businesses want targets to provide direction and investment confidence. For targets to be credible and to support a stable energy policy environment, we broadly need to understand how we might reach them.

97. Our TIMES-NZ energy scenario work shows that emissions are strongly related to economic, energy productivity and population growth and a significant reduction will likely require large reductions in carbon intensity. The question that needs to be addressed, with business as the primary solution provider, is how effort can best be harnessed across the energy sector to achieve the necessary transformation, while balancing risks such as from investment and carbon leakage. This needs to be done in an open and transparent way, especially as we seek to reconcile the aspirations of the sector with the emission-reduction commitments made.

98. We suggest a baseline set of key outcomes-based indicators to monitor progress towards our goals, allowing for a more informed conversation about the policy trade-offs required to reach them.

The modelling assumptions

99. Many submitters will have raised issues around the electricity price assumptions, the dependency on a very precise exit date for two key industrials and many other matters. Our issue with the modelling assumptions is the lack of sensitivity testing. In the private sector we would conduct sensitivity tests and stress tests for key input assumptions with modelling that supports such a significant piece of advice.

100. As we progress towards 100% renewable electricity by 2030 (in line with government policy) and an increase in demand for possibly half as much again as today's demand, price formation in the wholesale market will change dramatically. Thermal generation will become less available to fill key roles of peaking and hydro firming, while must-run renewable generation will increase significantly. One scenario is that high prices will be even higher and more frequent while low prices may also become more frequent. Average prices may be higher or lower.

101. Meanwhile, the timing of exits by Methanex and Rio Tinto are private decisions. Rio Tinto has indicated they expect to leave in 2024 but there is a lot of water to go under the bridge before then. They have said they would leave countries on a particular date before, and renegotiated. Methanex has not publicly signalled an exit.

102. The Commission must carry out sensitivity tests around outcomes that rely on the workings of the electricity and gas markets – the markets its advice relies on – if its advice is to have credibility.

Emissions from industrial processes

103. We are conscious that emissions from industrial processes are a specific area where carbon leakage could occur. This is a key area where New Zealand can choose to either take a leadership role and seek to maintain local production of materials including aluminium, methanol, and steel, or to create policies that incentivise these activities to be undertaken in other countries. For example, we note the following information with regard to methanol:

— 40% of the world's methanol is produced from coal; and

— 94% of all methanol produced is not linked to any form of carbon tax.

104. We propose that policies under development affecting these industries take this potential leakage into account.

Buildings

105. While we are supportive of legislating building performance standards, for both commercial and residential facilities, we are not supportive of necessary action 9c which recommends setting a date by when new natural gas connections will not be permitted. The problem the Commission is addressing, and the outcome it seeks, are

emissions reduction, while this recommendation focuses on infrastructure that can be repurposed for low emissions use. For example, in several countries biogas and hydrogen are used in the same infrastructure that previously relied on natural gas. This recommendation interferes in the sector's willingness to innovate and the potential opportunities for it to reduce emissions.

Urban Planning

106. Urban form influences emissions from a variety of sources including waste, transport, and energy. Robust quantitative evidence and analysis remain limited regarding the impact urban form, density, mobility and land use and planning have on emissions. Further investigation is necessary to develop a thorough understanding of the correlations and connections between urban planning, design, and infrastructure and climate change mitigation and adaptation. This understanding will be instrumental in informing the design of policy interventions to reduce emissions from urban areas, transport networks and buildings.

107. Achieving emissions reduction through changes to the built environment and urban form takes time. Emissions here are influenced by numerous pieces of legislation, including the Resource Management Act 1991 (RMA), currently under review. An integrated and coordinated approach to planning land use, infrastructure and transport investment and development will ensure decision-making is focused on clear outcomes without impacting on businesses' ability to make commercial decisions.

Consultation question 16 Agriculture

108. We generally support the package of recommendations and actions for the agriculture sector, with its focus on a holistic approach. The links with national environmental standards, water quality, biomass production etc are very dynamic. However, we note that the Commission's methane targets are ambitious and will be challenging to achieve. The pathway modelled by the Commission for biogenic methane is unlikely to be realistic as it is based on changes in farming practices and current technologies that appear to be a "best case" scenario. The Commission should do further sensitivity work, particularly for assumed future productivity improvements, and the stacking and scalability of current mitigation solutions. Any reduction in milk production will have an economic impact for farmers and the national economy and should be made explicit.

Support for accelerated and secured investment in R&D

109. We support the Commission's call for accelerated and secured investment channels for R&D to meet the 2030 and 2050 targets. We believe some of these, e.g., a fast-tracked pathway for methane reduction technologies, could yield major rewards e.g., the potential for methane inhibitors to lower emissions by 30 per cent. Future technology solutions for biogenic methane can benefit farming and give New Zealand's

overall pathway to 2050 added flexibility. A long-term plan and investment for targeted research and the development of new technologies to reduce biogenic methane emissions are critical.

Need for a flexible approach

110. We believe that given the uncertainties about the effectiveness of mitigation technologies in the primary sector, it will be important that regular reviews take place to ensure climate change policy is flexible and refined to take account of changing scientific and economic evidence. Furthermore, policies must allow the primary sector to identify and pursue the most cost-effective mitigation methods as these become technically and commercially viable.

A cooperative approach that avoids carbon leakage

111. We emphasise that these investments will require a genuinely cooperative partnership between the primary sector and government to achieve low-emissions food production for both New Zealanders and export markets. Given the importance of the primary sector for New Zealand's economy, it will be important to avoid policies that suppress profitable primary production in New Zealand and are higher cost ways of abating emissions. Such policies could cause losses in market share for efficiently produced, relatively low emissions primary exports and their replacement in those markets by high cost, higher emissions products. Outcomes of this kind would be both detrimental to the New Zealand economy and the goal of reducing climate change.

Behaviour change will be critical

112. We believe behaviour change will be important to achieving targeted agricultural emissions reductions. More resources and advisory support will be needed to achieve meaningful change in farm management practices.

Voluntary offsets

113. Many primary sector firms are engaged in exporting and marketing in multiple countries. To achieve carbon neutrality or net zero status, these firms often need to use voluntary offsets. This involves purchasing and cancelling emissions units such as NZUs. The Commission states that it is widely recognised as necessary to enable a credible carbon neutral claim that a voluntary offset should contribute to additional emission reductions or removals. This means that voluntary offsetting should deliver something extra on top of what would occur anyway due to business-as-usual activities, including those due to government policies like the NZ ETS. Another aspect of voluntary offsetting is avoiding double claiming, a type of double counting where more than one entity counts an emission reduction against an emissions reduction target.

114. Voluntary offsetting is important to many businesses so, as encouraged by the Commission, we believe that government should explore options for enabling voluntary mitigation and clarify the types of claims that can be made. This should be a priority.

Ensure the safety of food

115. We agree with the Commission's emphasis on ensuring regulations that allow new technologies to be brought to market as quickly as possible while ensuring other risks, for example, those to food safety, are properly addressed.

High potential in wetlands

116. Wetlands are very effective at capturing carbon. Though more needs to be done to understand and account for this, as suggested by the Commission, we believe greater emphasis should be put on wetlands as part of the overall strategy.

Improve information for decision making

117. We support improving the recording of information for decision making on sustainable land use. However, we note that this information should be targeted to ensure it is what the sector needs.

Consultation question 17 Forestry

118. We do not fully endorse the package of recommendations and actions for the forestry sector.

Exotic afforestation

119. We agree with the Commission that pine forests have an important role to play in achieving the 2050 target. They can continue to provide one of the most cost-effective ways of capturing carbon over coming decades, allowing other cost-effective technologies and methods time to be developed both within New Zealand and offshore and to come on stream. Examples of these technologies and methods could include methane inhibitors, as discussed in the agriculture section above, and lower emission sheep and beef genetics, particularly the use of genomics, as well as a wide variety of other possibilities.

120. The continued use of cost-effective exotic afforestation therefore provides crucial option value in our country's efforts to tackle climate change. Given the uncertainties inherent in other mitigation options, arguably at least comparable to the risks of loss of carbon from exotic and native forests, it could be prudent to allow the ETS price signal to drive investment in this area. This price signal will naturally adjust as new emissions reducing technologies and methods emerge. As the Commission suggests, other factors will need to be considered, such as employment and equity outcomes.

Focus on natives is challenging

121. We believe that increasing land devoted to exotic forest while paring back so called "favourable policy settings" looks challenging. Work will be needed on what incentives will be necessary to convince private landowners to plant natives rather than exotics. As noted above, these incentives may stem from the biodiversity and water quality benefits. It will also be important to understand where the labour force required for this will come from. We note that while there are co-benefits from native forests, these also exist for exotic forests and can include biodiversity, water quality, and erosion control. Exotic forests can control erosion more quickly than native forests.

122. The cost of establishing a greenfield native forest is high and likely to be between $5,000 -$10,000 per ha. There is also a high risk of failure, especially in drier areas, and a requirement for ongoing pest control. Exotic forests store carbon 3-7 times faster and at much higher levels than native forests. This is especially so, if the trees are grown for longer periods, or as permanent forests. Good examples are growing redwoods or eucalyptus as permanent forests, or pine forests for periods of 100 years or more. Using exotics would imply that we need to afforest a much smaller area than proposed by the Commission's draft report, and at much lower cost. While we believe that a mixed forestry model is the best solution for New Zealand, we question whether incentivising native afforestation is cost-effective, and a good investment of taxpayer funds compared with other decarbonisation activities required for our transition.

The benefits of forest management need to be understood better

123. We believe there should be an evaluation of the benefits which improved pest control in the DOC estate would provide. There need to be incentives that recognise the increased carbon sequestration in such pest managed forests and the provision of pest management services to landowners.

Aligning planning requirements would be sensible

124. Currently, forests of greater than 100 hectares can use the field measurement approach to measure the amount of sequestered carbon. The Commission wants forest management plans for all permanent forests over 50 hectares to monitor the forest's permanence and to limit exposure to risks such as climate change impacts, governance failure, and community impacts.

125. We suggest that rather than introducing another threshold, it could be appropriate to make the measurement of stored carbon mandatory for such forests as this would monitor the risks of governance failure and climate change impacts. The Commission should also note that the ETS has recently introduced a provision on how to deal with adverse events in forests, and it is important that this be retained.

Some valuable activities need better coverage in policy

126. There will be important practices that may not be well covered by current policy, for example growing manuka for honey production, oil production for cosmetics, or short rotation crops for energy, etc. Manuka requires replacement in either case. Given the economic value of these activities, it is important the policies that cover them are clear.

Prioritisation is needed

127. We consider there have been quite a few policy initiatives that affect forestry and land use over recent years, undermining the confidence needed to make long term investments. The Commission therefore needs to be aware that further changes, especially involving land use constraints, are likely to be counterproductive. It might therefore be beneficial to pace and manage the changes by prioritising them and stretching out the timeframe for lower priority policy initiatives.

Consultation question 18 Waste

128. We support the general thrust of the Commission's recommendations in relation to Waste. However, we would like to make the following suggestions.

Standardise waste Infrastructure

129. Waste management and recycling methodologies are very different around the country. We would like to see the waste levy used to enhance and standardise infrastructure to ensure maximum impact of the proposed measures.

Focus on the Bio Economy

130. We believe the most important aspect of waste is understanding how it fits into the Bioeconomy and what should be occurring with what waste and where to provide the least-cost solution for New Zealand overall. As part of the proposed energy strategy, we recommend a comprehensive study be undertaken to inform an overall plan. Items to consider include:

— Where are different types of waste coming from?

— Are there thermal/electrical loads around high waste areas?

— Where should compost be prioritised over other organic disposal methods?

— Where should anaerobic digestion be prioritised over other organic disposal methods?

— Can anaerobic digestion/pyrolysis be utilised to provide inputs into energy systems, including:

- North Island Natural Gas network?

- Local energy hubs for large industries?
- Liquid fuel consumption market, including petrol, diesel and LPG?

— Can hydrogen be blended and in the long term replace biologically derived fuels where applicable?

131. With the above in mind, organic material could be processed in anaerobic digestors to generate biogas for injection into the North Island gas pipeline. It is more valuable to many users as biogas rather than electricity and the material coming out of the digester can also be used for soil amendment rather than being locked up in a landfill. To enhance the effect of this, residential connections to the network could be curtailed while industries with hard to replace thermal fuel needs utilise the biogas.

Further Product Stewardship work needed

132. Some finished overseas products have a competitive advantage when compared with those in NZ and widening the refrigerant ban on these is fully supported.

133. We would like the Commission to clarify how a more wide-ranging Product Stewardship regime could work, with differences relating to where the products are consumed (New Zealand vs overseas) and produced (New Zealand vs overseas), and how shipping would fit into such a scheme.

134. Small organisations (such as farmers) do not understand what needs to be done with their refrigerant replacement, and the contractors servicing them are often small and lack the knowledge and experience of what is required. Additional product stewardship work is required to improve this.

Waste Information is lacking

135. Lack of waste data is a key issue. We would like the Commission to suggest that a comprehensive study should be undertaken to understand what waste is available where, in what quantities. This will have an important input into the Bioeconomy.

136. We also understand there is a lack of knowledge by waste emitters about options for waste disposal. We recommend an education programme is undertaken to upskill emitters as to their options, and the benefits of these.

137. Collaboration across sectors (emitters and energy users) is required to reduce lumpiness of supply and enable better utilisation of expensive assets. This relates directly into the Bioeconomy study.

Vehicles

138. Vehicles are not specifically covered, and we believe they need to be addressed across several areas:

- Disposal of cars and car parts needs overall coordination as there are many small organisations of different capacity all around the country and much automobile waste ends up in landfill
- Systematic component disposal options (such as bins onsite) would make recycling and waste reduction much easier
- Car dismantlers could be accredited (mandatory) to ensure compliance with recycling systems
- Consumers need to understand the options/processes to ensure good decisions are made
- Disposal can occur in low density areas – central support to ensure options are available everywhere is likely to be required.

Consultation question 19 Multisector strategy

139. We support the Commission's recommendation on integration as per necessary action 15.

140. We support the Commission's recommendation on supporting behaviour change as per necessary action 16.

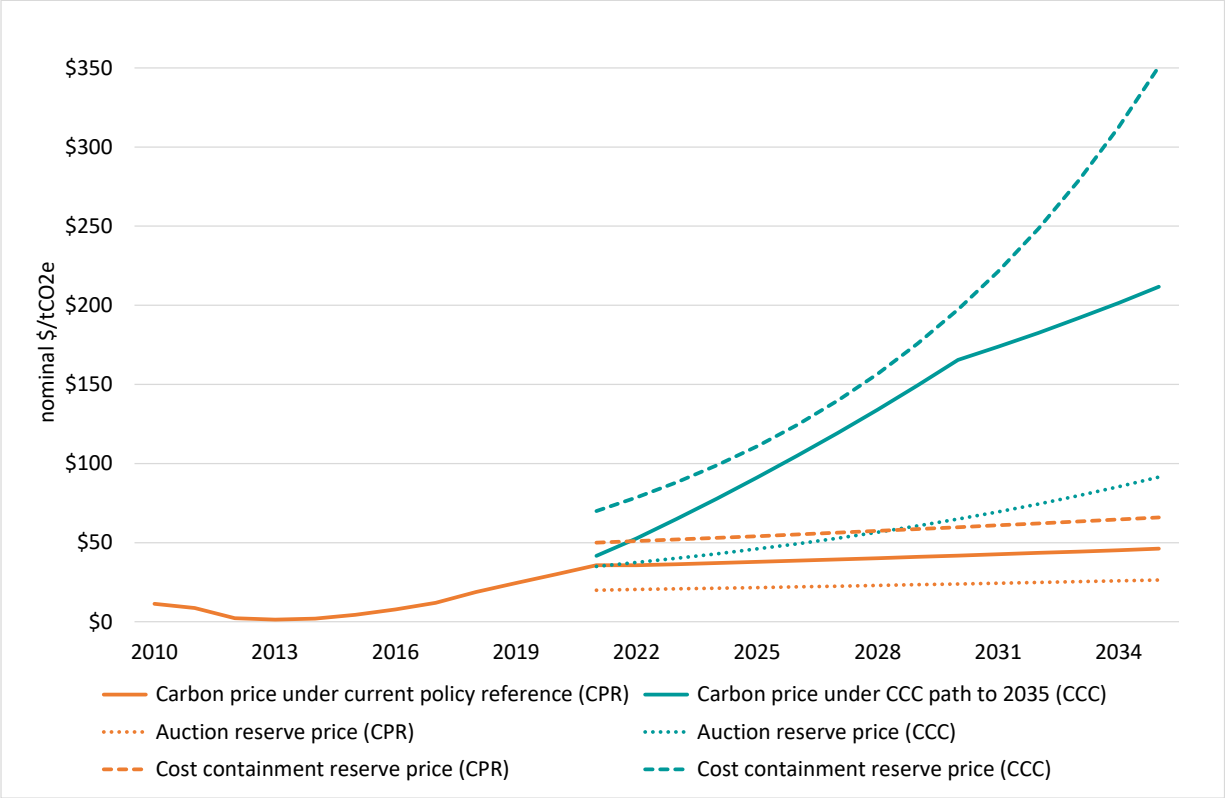
141. We support the Commission's recommendation to require entities with large investments to disclose climate-related risks as per necessary action 17.

142. We support the Commission's recommendation to align investment for climate change outcomes as per the time critical necessary action 6 in principle. As we have discussed above in relation to the size and education of our workforce and below on the impact of a rising carbon cost, we think the Commission has not provided enough rigour in its analysis of the impact of its recommendations on the private sector.

143. The Commission suggests the Government adopts a policy of factoring in a long-term abatement cost of $140/tCO2e by 2030 rising to $250/tCO2e by 2050 in real prices in its investment analysis. We urge the Commission to work with the business sector prior to finalising its advice to government to better understand the uncertainties businesses will face going through this transformation and the impact of moving from a carbon price of around $39/tCO2e today to $140/tCO2e in 9 years.

144. We have some concerns with the Commission's approach to the carbon price through time-critical necessary action 7 and necessary action 19. In addition to its proposed approach to long-term abatement costs discussed above, the Commission proposes that the parameters used in carbon auctions, the auction reserve price, and the cost containment reserve, be adjusted significantly as shown in 2 below.

Figure 2: Current and proposed ETS Auction Reserve prices and Cost Containment reserve prices



145. As we have already seen with the introduction of the cost containment reserve, this is likely to become a self-fulfilling prophecy. The Commission has signalled its view of the long-term abatement cost and the near-term carbon price through the policies it recommends in this section. We feel not enough attention is given to emitters with hard to abate emissions and consumers who are caught between costs going up and the ability to respond to price signals. The proposed approach to the ETS raises several issues we think the Commission should address in more detail before finalising its advice to government.

146. We would like to see more collaboration with the business sector and more sensitivity in the modelling about the possible rate of transformative change and the carbon price. We think the cost of the transformation will be greater if the business environment and the carbon price get out of sync. In particular:

— will the workforce be educated and available for the new economy, will the technologies be available, will the policies be firmed up and implemented so that businesses are able to manage the uncertainties and risk as the carbon price ratchets up?

— will households, especially low-income households, be able to keep up with the assumed carbon price path. What are the risks of emissions leakage as a result of

the proposed carbon pricing and what the benefits of change to New Zealand's carbon footprint to offset the costs?

On balance, while there are a number of aspects of the multisector strategy as per consultation question 19, we have reservations about whether all policies would be in place and businesses would have the time, the workforce and the supply of technology necessary to adjust to the increased carbon costs in the period indicated.

147. We would also like the Commission to provide more clarity on the implications of carbon price levels before 2030 for the carbon price over the long term. The Productivity Commission's inquiry into the low-emissions economy[2] suggests that taking strong action on the carbon price in 2030 positions New Zealand to lower emissions prices beyond 2030. However, this dynamic effect does not seem to come through in the Commission's modelling, which estimates the 2030 price of approximately $140/tCO2e by linearly discounting the 2050 price of $250/tCO2e at a rate of 3%.

Consultation question 20 Rules for measuring progress

148. On balance, we have several questions we would like to clarify before indicating support for the proposed rules for measuring progress towards emissions budgets and the 2050 target.

149. The Commission recommends the following package of rules for measuring progress:

b. To use a modified activity-based framework for land emissions accounting, with a 1990 base year and 'averaging' for post-1989 forests, substantially aligning emissions budget accounting with the approach used for accounting for the first NDC.

150. We are unclear what "averaging" means in this context. Today, we use a stock accounting approach (carbon sequestered now = Carbon stock at the beginning – carbon released via harvesting+ carbon sequestered through afforestation+ growth). "Averaging", as proposed to be implemented in the ETS, will apply to newly afforested areas from next year but is not supposed to be mandatory for currently planted forests. If the Commission is implying it is using this type of averaging for everything, the approach would underestimate the carbon in permanent forests, which will always continue to accrue carbon, with no "average" available. This also applies for proposed afforestation in native forests. Such treatment creates a lot of questions we would like to see clarified in the final advice to government including:

[2] https://www.productivity.govt.nz/assets/Documents/lowemissions/4e01d69a83/Productivity-Commission_Low-emissions-economy_Final-Report_FINAL_2.pdf

— how would the Commission expect government to deal with forests (>100 ha) that use a measurement approach and often sequester 25-50% more carbon than is reflected in the published yield tables?

— would the Commission's proposed change affect participants in the ETS or be used only for our national accounting/reporting of carbon stock?

— if the Government uses this approach for national accounting and reporting only, how would the differences to the sequestered carbon be reconciled?

151. BusinessNZ would like to see the Commission clarify the following proposed approach from budget recommendation 5:

c. Within the modified activity-based land emissions accounting framework, to:

i. Include the land areas and uses corresponding to afforestation, reforestation, and deforestation, as confirmed for the first NDC.

There appears to be no change, but we would like the Commission to confirm this.

152. Also, from budget recommendation 5:

ii. Exclude forest management, the activity relating to the impact of management practices on pre-1990 forest carbon stocks, despite its inclusion in NDC accounting because the forest management reference level has not yet been set for the period through to 2030 and we have been unable to assess how it manages accuracy and uncertainty risks. Improved management of pre-1990 forests nevertheless remain important and should be encouraged through policy.

This has been discussed for a while and MPI/TUR seems to support a policy that credits the increased sequestration of replanted pre-1990 forests to growers. There are significant productivity gains from carbon sequestration as a result of 30 years progress in genetics, and these benefits can be quantified reasonably easily. Scion has done a lot of work in this area. We cannot see any reason to exclude these benefits which would amount to a large national benefit, as the majority of our forests are pre-1990. We would like to see the Commission revisit this.

153. Another item in budget recommendation 5 we would like to see revisited:

iii. Include harvested wood products (HWPs) from post-1989 forests, but not HWPs from pre-1990 forests because they are accounted for as part of forest management which is excluded from emissions budget accounting.

The sector is supporting this but expects growers to receive a benefit from the HWP sequestered carbon in HWPs.

iv. Include a natural disturbances provision, aligned with the first NDC and the 2013 IPCC Kyoto Protocol Supplement. The Commission will judge whether to invoke the provision in its reports that monitor progress each year and at the end of an emissions budget period.

154. From our perspective this sounds reasonable, but we would like the Commission to establish the threshold that has to be crossed before government acts.

v. Encourage the Government to develop methods for tracking emissions and removals by sources and sinks not yet included in the country's domestic or international target accounting, such as organic soils and biomass (including small lots of trees and regenerating vegetation), with a view to allowing them to be included in future target accounting.

155. We would like the Commission to test the viability of this with MPI/TUR before finalising its advice. Generally, the lead time for changes is not mentioned anywhere, and this will likely affect the costs, budgets, and timetables of the proposed changes.

Appendix One - Background information on BusinessNZ and BEC

BusinessNZ is New Zealand's largest business advocacy body, representing:

- Regional business groups EMA, Business Central, Canterbury Employers' Chamber of Commerce, and Employers Otago Southland
- Major Companies Group of New Zealand's largest businesses
- Gold Group of medium sized businesses
- Affiliated Industries Group of national industry associations
- ExportNZ representing New Zealand exporting enterprises
- ManufacturingNZ representing New Zealand manufacturing enterprises
- Sustainable Business Council of enterprises leading sustainable business practice
- BusinessNZ Energy Council of enterprises leading sustainable energy production and use
- Buy NZ Made representing producers, retailers and consumers of New Zealand-made goods

BusinessNZ is able to tap into the views of over 76,000 employers and businesses, ranging from the smallest to the largest and reflecting the make-up of the New Zealand economy.

In addition to advocacy and services for enterprise, BusinessNZ contributes to Government, tripartite working parties and international bodies including the International Labour Organisation (ILO), the International Organisation of Employers (IOE) and the Business and Industry Advisory Council (BIAC) to the Organisation for Economic Cooperation and Development (OECD).

The BusinessNZ Energy Council (BEC) is a group of New Zealand's peak energy sector organisations taking a leading role in creating a sustainable energy future. BEC is a division of BusinessNZ, New Zealand's largest business advocacy group. BEC is a member of the World Energy Council (WEC). BEC members are a cross-section of leading energy sector businesses, government and research organisations. Together with its members BEC is shaping the energy agenda for New Zealand.

Our vision is to support New Zealand's economic wellbeing through the active promotion of the sustainable development and use of energy, domestically and globally. With that goal in mind, BEC is shaping the debate through leadership, influence and advocacy.