Briefing: Strategy for mitigating the impact of ERP2 actions

Date submitted: 2 October 2024
Tracking number: BRF-5302
Sub Security level: CLASSIFICATION
MfE priority: Urgent

Actions sought from Ministers		
Name and position	***Action sought***	***Response by***
To Hon Simon WATTS **Minister of Climate Change**	Provide direction on your preferred approach. Provide feedback to officials. Forward this to relevant Ministers	07/10/2024

Actions for Minister's office staff
Return the signed briefing to the Ministry for the Environment (ministerials@mfe.govt.nz). **Forward** the briefing and appendices, if agreed, to the following Ministers: **Minister for Energy and Transport,** Hon Simeon BROWN **Minister for Social Development and Employment** Hon Louise UPSTON **Minister of Agriculture and Forestry,** Hon Todd MCCLAY **Minister for Building and Construction,** Hon Chris PENK **Minister for Māori Development** Hon Tama POTAKA **Minister for Youth** Hon Matt DOOCEY **Minister for the Environment,** Hon Penny SIMMONDS **Minister for Regional Development** Hon Shane JONES **Minister for Rural Communities** Hon Mark PATTERSON
Appendices and attachments
1. Appendix One: Summary of agency and consultation feedback on ERP2 impacts 2. Appendix Two: ERP2 distributional impacts CGE modelling results and limitations 3. Appendix Three: Climate Change Commission distributional impacts advice

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Minister's comments

Strategy for mitigating the impact of ERP2 actions

Key messages

1. The Climate Change Response Act 2002 (CCRA) requires that the second emissions reduction plan (ERP2) includes a strategy that mitigates the impact that reducing emissions will have on different groups.[1] This paper outlines the expected impacts of the proposed ERP2 policies, explains how the existing support package mitigates those impacts, and tests whether you would like to develop additional interventions.

2. The ERP2 discussion document proposed that the basis of the Government's strategy to mitigate the impacts of reducing emissions would be anchored in the suite of existing support mechanisms and emphasised the Government would determine whether additional support is required once final decisions are made on the content of ERP2, and the impacts become clearer through additional modelling and analysis.

3. Now that consultation has closed, the key judgement we are seeking from you is if you are satisfied that the existing package of support sufficiently mitigates the expected impacts on affected groups. If you wish to develop additional interventions, we seek your direction on how they will be included in the ERP2, due for publication by December 2024.

What we found – impact analysis

4. We found that disproportionate impacts are expected for the following groups:

   i Lower-income households – increased economic costs primarily because they are disproportionately affected by emissions pricing and less equipped to move to low-emissions technologies.

   ii Māori and iwi – risk of negative impact on employment from land-use changes and over-represented in lower-income households that are more affected by emissions pricing (broader Treaty impacts are addressed separately in BRF-5276).

   iii The agricultural sector – risk of negative impact on output and employment from ETS-driven land-use change to forestry, as well as the implementation of an agricultural emissions pricing system by 2030.

   iv Rural communities – risk of negative economic and social impacts, and increased risks from natural hazards from the increased shift from agriculture to forestry.

   v Future generations – additional economic burden will be created for future generations to maintain existing forestry-based removals and/or to achieve gross emissions reductions. Also, additional costs to manage increased natural hazards and biosecurity risks from increased forestry.

5. The expected scale of these impacts is largely consistent with impacts identified in the discussion document, and the impacts expected from ERP1.

[1] Section 5ZG(3)(c) of the CCRA

What are we doing already

6. The Government is approaching climate change in a way that will meet our climate targets while minimising the costs to New Zealanders. This approach will minimize the cost of the transition to New Zealand as a whole, as well as supporting the Government's wider economic strategy to grow the economy and enable new employment opportunities.

7. Although the Government has tried to minimise impacts where possible, it recognises that some groups may need support through the transition. Our starting point for support policies is the package of existing, funded support mechanisms that exist for managing economic shocks, as signalled in the discussion document. This primarily consists of inflation-indexed government financial assistance and income support system, government employment services, the 'climate dividend' tax bracket adjustment and existing targeted supports for iwi and Māori.

8. Our analysis has shown that the existing package will mitigate some of these impacts, but there are likely to be impacts for affected groups that existing interventions may not fully mitigate. Existing supports are also not specifically linked to climate mitigation impacts and are not targeted to the groups most affected.

Possible additional interventions

9. 9(2)(h) [redacted]

[redacted]

[redacted]

12. Our view is that the existing support package could meet the CCRA requirement as general supports would mitigate, although not necessarily eliminate, impacts on the various affected groups. The strategy could set out details of how general supports would be available to specifically affected groups (the draft chapter does this). Additionally, many impacts are expected to occur gradually. This gives affected groups the opportunity to prepare and adapt over time, and our overall economy will similarly adjust over time.

13. 9(2)(g)(i) [redacted] The Climate Change Commission has recommended stronger support to manage the impacts of mitigation policies, and this is echoed by public submissions on the ERP2 discussion document. Both sources highlighted outstanding impacts that, in their assessment, are insufficiently addressed by existing support policies.

14. Additional interventions could be justified in order to more effectively mitigate impacts of the transition.

15. We recommend you direct us to develop an approach for monitoring and responding to distributional impacts as they emerge over time. This could help you to more effectively monitor the impact of your planned ERP2 actions on stakeholders and provide optionality for future interventions, should they become justified. It would also align with your recently agreed adaptive management approach for meeting emissions targets [BRF-5138].

16. We invite your direction on whether you're comfortable with the existing support package, or whether you would like to explore additional targeted policies for specific groups.

Next steps

17. If directed, we will work with other agencies and report back on options for additional policies for inclusion in your strategy for mitigating ERP2 impacts. ERP2 timelines mean that it will not be possible to include fully developed actions in the final ERP2 document, but we will include high-level information on both the overall strategy and potential additional policies, including areas of focus and funding sources, if desired.

18. We update the draft ERP2 chapter as per your direction.

Recommendations

We recommend that you:

a. **note** that the Government is approaching climate change in a way that will meet our climate targets while minimising the costs to New Zealanders. This approach is expected to minimize the cost of the transition to New Zealand as a whole, as well as supporting the Government's wider economic strategy to grow the economy and enable new employment opportunities.

b. 9(2)(g)(i) [redacted]

c. 9(2)(h) [redacted]

9(2)(h) [redacted]

d. **note** advice from the Climate Change Commission on mitigating distributional impacts, including recommendations 9 and 10 in particular.

e. **note** feedback from ERP2 consultation on expected impacts from ERP2 policies and the existing support package included in the ERP2 discussion document.

f. **agree to** direct MfE to develop an approach for monitoring and responding to distributional impacts as they emerge over time.

Yes | No

g. **agree to:**

   i **either** confirm the use of the existing support package to mitigate ERP2 impacts, as outlined in the draft chapter attached to the cover note for this package of briefings [BRF-5423].

   Yes | No

   ii **or** direct MfE to work with other agencies to develop additional support policies to include in the ERP2.

   Yes | No

h. **forward** this briefing and its appendices to relevant Ministers.

Yes | No

Signatures

Simon Mandal-Johnson
Manager
Climate Strategy
2 October 2024

Hon Simon WATTS
Minister of Climate Change

Date

Strategy for mitigating ERP2 impacts

Purpose

19. To outline the expected impacts of the Government emissions mitigation policies on different groups of New Zealanders and seek your direction on your preferred approach to a strategy to mitigate the impacts of the second emissions reduction plan (ERP2).

Background

20. Over the next few weeks, you will receive a series of papers to support you in making decisions to finalise ERP2. The recommended reading order of the briefings you have received this week is set out in a cover briefing [BRF-5423].

21. Section 5ZG(3)(c) of the Climate Change Response Act 2002 (CCRA) requires that ERP2 includes *"a strategy to mitigate the impacts that reducing emissions and increasing removals will have on employees and employers, regions, iwi and Māori, and wider communities, including the funding for any mitigation action"*.

22. Additionally, section 3A(ad) of the CCRA more specifically requires that ERP2 must include "a strategy to recognise and mitigate the impacts on iwi and Māori of reducing emissions and must ensure that iwi and Māori have been adequately consulted on the plan".

23. In March, you took Ministerial ownership of this work programme, in line with your overall legal responsibility for ERP content. In our previous advice to you on distributional impacts, we recommended that you make decisions on whether to pursue additional tailored policies closer to the final drafting of ERP2, once the details on the scale and distribution of policy impacts were clearer.

24. The ERP2 discussion document noted that the basis of a strategy to mitigate the impact of reducing emissions will be the suite of existing support mechanisms and emphasised the Government would determine whether more support is required once final decisions are made on the content of ERP2, and the impacts become clearer through additional modelling and analysis.

25. We are in the process of preparing a final draft of ERP2 and have updated analysis from agencies and feedback from consultation. We seek your direction on your preferred approach to the strategy to mitigate ERP2 impacts so we can update its chapter.

9(2)(h) [redacted]

9(2)(h)

[redacted]

Analysis and advice

What we found – impact analysis

32. Our analysis of the expected distributional impacts is based on three primary sources:

    i **Qualitative analysis from MfE and other agencies** – Analysis of potential impacts on different groups from individual ERP2 policies, including non-economic impacts.

    ii **Submissions from consultation** – 474 submitters (from a total of 1846) commented on distributional impacts, providing views on expected impacts, the supports outlined in the discussion document and other possibilities for support.

    iii **Interim computable general equilibrium (CGE) modelling** – This modelling analyses the Government's overall ERP2 policies and uses a model to determine the economic impacts on different groups out to 2050.

[2] See section 3A(ad) of the Act

33. Our focus is on impacts resulting from Government policy, not any impact of the broader transition to low emissions[3]. 9(2)(h) [redacted]

34. This briefing highlights the most significant expected impacts. A more detailed summary of consultation feedback and agency analysis on impacts is attached as Appendix One.

35. This briefing presents interim modelling. We do not anticipate a significant shift between interim and final modelling figures. If there is a substantial shift in modelling figures that could impact on your decision, then we will update you and seek further direction. The final ERP2 impacts chapter will include final modelling figures. More details on the findings and limitations of the modelling are attached as Appendix Two.

36. It's important to note that this analysis largely focuses on groups that are expected to face negative impacts in order to best inform decisions on how they can be supported. However, moving to a low-emissions economy is also expected to drive economic opportunities and positive benefits for many New Zealanders.

Overall impacts

37. CGE modelling suggests that the overall impacts of the Government's mitigation efforts are relatively small. Under ERP2 policies, overall household consumption is expected to be 0.39 per cent lower in 2050 than it would be without any efforts to reduce emissions.

38. The NZ ETS is the Government's major tool for reducing emissions and will be one of the major drivers of costs for households. Under the recently announced NZ ETS settings annual household expenditure caused by emissions pricing is expected to be about $610 in 2026 and $690 in 2029, up from $440 today.

39. Through consultation we heard from a broad range of stakeholders about how the proposed ERP2 policy package would impact groups. A portion of that feedback was concerned with the overall impacts of the policy package for New Zealand broadly. Other submitters expressed concern that the physical effects of climate change (such as more frequent extreme weather events) will have disproportionate impacts on certain groups, though this is outside the scope of your requirement under the CCRA.

Impacts on lower-income households

40. Lower-income households, including a disproportionate number of disabled people and people from Māori and Pasifika communities, are expected to be more affected by Government mitigation policies, primarily because they are disproportionately affected by emissions pricing.

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[3] For example, we're not focused on impacts on New Zealand firms from increased climate demands from customers or supply chains.

41. This is because lower-income households spend a relatively greater portion of their income on emissions-intensive items[4] and have less capacity to substitute those items for low-emissions options, which sometimes come with high up-front costs. Lower-income households also have less disposable income compared with higher-income households, so feel the additional costs from emissions pricing more keenly.

42. This finding was supported by submitters who particularly highlighted the cost to lower-income households of transitioning to lower-emissions vehicles and transport.

Impacts on Māori households/economy

43. Section 3A of the CCRA also requires that ERP2 gives effect to the principles of the Treaty of Waitangi. We are briefing you separately on expected Treaty impacts on iwi and Māori [BRF-5276]. This section focuses on more general distributional impacts on Māori.

44. Based on CGE modelling, Māori households are expected to be more affected than non-Māori households, but the difference is relatively small. On average, across all households, Māori are expected to experience a decrease in consumption of 0.4 per cent compared with 0.37 per cent for non-Māori households.

45. Māori have a particularly strong connection to the land and are heavily involved in the primary sector, both as owners and as employees.[5] The Māori primary sector asset base is estimated to be $23.4 billion. Māori have a disproportionate involvement in lower quality land[6], which is generally used for sheep and beef farming and is expected to be the most affected by land use changes. Compared to other landowners, Māori landowners face multiple barriers to managing and developing their land, including land ownership and governance structures and access to capital and advice. As such, they are disproportionately affected by expected land use changes from agriculture to forestry.

46. However, this impact is largely driven by voluntary land-use changes from farm owners as NZ ETS settings make forestry relatively more profitable. This means iwi and Māori landowners may benefit from a shift to a more profitable land use but does not negate the impacts on Māori employment.

47. Moving land to NZ ETS forestry also restricts choices for future generations of iwi/Māori who would be required to maintain the forests indefinitely or face a steep financial cost to change land use back out of forestry. However, for iwi who wished to return land to native forestry, the NZ ETS makes this more economically feasible (although exotic afforestation is more financially beneficial). Submitters agreed with this, with several raising the generational impacts of land use change for Māori and supporting the incentivisation of native afforestation as a possible mitigating action.

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[4] Davis C, Hart B, Stubbing B. 2024. Analytical note: Household cost-of-living impacts from the Emissions Trading Scheme and using transfers to mitigate regressive outcomes (24/02). Wellington: Treasury

[5] Māori own and manage an estimated 30 percent of plantation forest land, 10 percent of land used for kiwifruit and dairy production, and 25 percent of land used for sheep and beef production (Insights Into Farmer Behaviour Responses to Emissions Pricing – February 2022)

[6] 80% of Māori land is classified as Land Use Capability (LUC) 6,7 or 8 (Insights Into Farmer Behaviour Responses to Emissions Pricing – February 2022)

48. Māori are relatively more likely to start from a position of greater socio-economic disadvantage and will be over-represented in lower-income households that are more affected by emissions pricing.

49. There are further cultural considerations that may impact Māori in the way that land is used. If ERP2 policies (such as Electrify NZ, which aims to enable New Zealand to meet its goal of doubling renewable energy) require Māori land, then it's important Māori are properly engaged through the implementation of those policies to avoid cultural, economic or social impacts. Many submissions also highlighted cultural considerations, particularly the impact of land use change to exotic forestry that could negatively impact the cultural connection that Māori have to the land.

50. Many Māori submitters shared that the plan would have cultural impacts on them or their way of life, however the submissions were not clear on the precise nature of these impacts or how they relate to ERP2 policies.

Sectoral impacts (impacts on employees and employers)

51. CGE modelling found that agriculture is expected to be the most negatively affected sector.[7] However, this impact is largely driven by voluntary land-use changes from farm owners as NZ ETS settings make forestry relatively more profitable. Because agriculture is largely owner-operated, the impacts on individuals are likely not as negative as indicated by modelling. This does not negate the impacts on agricultural employees who will not benefit from the sale or conversion of land.

52. The implementation of a pricing system by 2030 will also negatively impact on the sector, but the exact impact will depend on the design of the pricing system.

53. These impacts also flow through into agricultural manufacturing, where manufacturing of meat and dairy products are expected to be similarly affected.

54. Employees and employers in other sectors are less impacted, but additional detail on their expected impacts can be found in Appendix Two.

Impacts on regional communities

55. CGE modelling found that regional impacts were largely driven by regional industry mixes and the most affected regions are those with heavier reliance on dairy, sheep and beef farming, such as Southland, the West Coast and Manawatū-Whanganui.

56. Analysis from MPI suggests the evidence on the exact impact on rural communities from the expected shift from agriculture to forestry is mixed. Some research has found higher employment from production forestry compared with sheep and beef farming, while other research has found the reverse. The impact likely varies significantly depending on forest and farm type, and regional circumstances.

57. However, all sources suggested that agriculture and production forests provide significantly more relative employment than carbon/permanent exotic forestry as they require greater ongoing management practices.

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[7] Note that this modelling includes different assumptions around the impacts on agriculture than those used in the ENZ model. More detail is included in Appendix Two.

58. This means that for some regions a shift in land use could be positive, while for others it could be negative. There remains the risk of disruption to rural communities, particularly where land is shifted to permanent forestry. Regardless of overall employment figures, changes in industry will require workers to develop different skills.

59. Rural communities are also expected to be more impacted by increased fuel prices from the NZ ETS, as they have less access to public transport and suitable low-emissions vehicles.

60. Beyond economic impacts, a key theme from submissions is that farmers are vital contributors to local communities and that forestry is often operated by larger-scale businesses who are less integrated in community life. MPI suggests that where forestry will add to overall regional employment, the location of employment from forestry is likely less localised/rural than agriculture and more focused around main regional centres.

61. Submitters also raised concerns that reduced job availability from land use change could force migration away from regions, noting this may come at a significant impact to those who need to move for work opportunities (eg, economic cost, mental health impact, loss of connection to whenua and cultural practices) and lead to other challenges for those communities (eg, impacts on local schools, small business closures, fewer volunteer firefighters, degradation of community-based support).

62. More forestry also increases regions exposure to risks related to forest fires and the impact of slash and erosion in event of flooding, all of which will be further exacerbated as the impacts of climate change are increasingly felt.

Impacts on future generations

63. The strategy that the Government outlined in the discussion document assumes a significantly lower rate of gross emissions reduction and higher rate of removals through forestry compared with the demonstration pathway. This has distributional impacts on future generations in two major ways:

    i It leaves future generations with high levels of gross emissions that will need to be either reduced or continued to be offset with further forestry, both of which come with costs and economic trade-offs.

    ii It leaves future generations with large areas of forestry that must be maintained to prevent the release of stored carbon and limits future flexibility of land-use, including where forestry may not be the most productive use of the land. More forestry also increases future adaptation risks related to forest fires and the impact of slash and erosion in event of flooding.

64. While future technological developments may reduce the costs of decarbonisation relative to today and mitigate some of this impact, timing on these developments and the extent of savings is uncertain.

65. These future impacts were raised by many submitters, who see that the decisions that the Government today should be taken in the interests of all New Zealanders – present and future. Comments were largely focused on the burden that future generations will have to reduce gross emissions, the long-term impacts of land-use change and exotic afforestation, and the risk in assuming that lower-cost mitigation technology will be available.

What are we doing already

66. The Government's is approaching climate change in a way that will meet our climate targets while minimising the costs to New Zealanders. This approach is expected to reduce the impacts faced by several affected groups and is reflected in our modelling of impacts. It will also support the Government's wider economic strategy to grow the economy and enable new employment opportunities.

67. Agencies have considered potential distributional impacts when designing mitigation policies, adjusting policy design to reduce impacts where possible.

68. Some of the largest distributional impacts, including on regional communities, Māori, and manufacturing stem from impacts on the agriculture sector and conversions from agriculture to forestry. The Government's limits on farm conversions registering in the NZ ETS will help to address some of these impacts by restricting shifts from agriculture to forestry. The delay on the pricing of agricultural emissions also reduces the impact on the agricultural sector and rural communities. Substantial support for research and development of mitigation tools and technologies for agriculture also offset some of these impacts.

69. Impacts on Māori can be minimised by ensuring that the implementation of emissions reduction policies uphold Treaty settlements and statutory obligations. Sector-led engagement with iwi and Māori is key to mitigating legal and economic impacts, especially where land use intersects with emissions policies, ensuring Māori interests in key sectors like forestry and agriculture are protected.

Existing support package

70. Our starting point for analysis is centred on the package of existing, funded, support mechanisms, particularly those that help manage shocks in the labour market. New Zealand has an existing, effective government financial assistance and income support system designed to temporarily assist individuals through times of employment disruption or, more generally, individual hardship. This includes jobseeker support, superannuation, winter energy payments and many more. While these can apply for a broad range of reasons, they can also support some individuals affected by the impacts of Government climate policies.

71. Government provides a range of employment services to help people prepare for, get into and stay in employment, including people affected by a changing labour market. These services include early-response services such as careers advice and job search support, and assistance with work-readiness and skills development (including, for example, financial assistance to access training or retraining, such as through Apprenticeship Boost). The Government's 'Climate Dividend' tax bracket adjustments will put more money back into the hands of New Zealanders who pay income tax, which can partly offset the overall cost increases that stem from mitigation policies.

72. The Māori Climate Platform is in development and proposed to focus on investing in Māori-climate led actions across different Māori groups to deliver tangible outcomes for Māori communities in support of the goals of both national adaptation plans and ERPs.

73. 9(2)(f)(iv) [redacted]

74. The Government also supports Māori through sector-led programs such as the Māori Agribusiness Extension Programme and Māori-led Approaches to Reducing Biological Emissions, which support Māori landowners in transitioning to sustainable practices. These mitigate agriculture-linked impacts on Māori. The integration of mātauranga Māori through projects like Te Arataki - Tatai Taiao also ensures cultural and environmental impacts are addressed, supporting Māori-led resilience and mitigation efforts.

75. The Climate Data Initiative and Adaptation Framework currently under development, will equip New Zealanders with tailored data and tools related to climate mitigation, allowing for informed decision-making to manage economic and social effects of climate policies.

76. A draft ERP2 impacts chapter that reflects the existing support package is attached to BRF-5423. The draft chapter illustrates how an existing support package could appear in ERP2.

Assessment of effectiveness of existing support package

Climate Change Commission advice

77. You are required under Section 5ZI(1)(a) of the CCRA to consider the recommendations of the Climate Change Commission (Commission) when finalising ERP2 [BRF-4759]. This briefing outlines the Commission's advice and recommendations related to distributional impacts for your consideration.

78. The Commission made recommendations related to distributional impacts in their advice on ERP2. Overall, the Commission recommended stronger support to manage the impacts of mitigation policies because of the level of disruption involved and to ensure that emissions reduction efforts can be sustained. Our advice is that the existing support package does not meaningfully agree with most of the Commission's advice and recommendations. Their advice would be more fully incorporated if you direct stronger support in your strategy to mitigate ERP2 impacts, as outlined below.

79. More details on the Commission's advice and an evaluation of how it is addressed by current support is attached as Appendix Three.

Factors that support effectiveness of the existing support package

80. Although Government policies leave some groups relatively worse off compared to if there were no mitigation efforts, all sectors and regions are modelled to have higher output in 2050 under the Government's mitigation policies than their output today. This means that groups overall are still expected to be better off than today.

81. Many of the impacts are expected to occur gradually over time, and the Government has signalled its direction and the expected impact on different groups. This allows individuals to prepare in advance for expected changes and mitigates the impact compared to sudden, unforeseeable shocks.

82. The impacts on lower-income households are partly offset by the indexing of many existing support payments to the consumers price index. This means that as the cost of goods and services increases due to efforts to reduce emissions, some benefits will increase as well. Recent Treasury analysis found that around 80 percent of household equivalised disposable income decile 1–4 households received CPI-indexed payments, and these payments compensate for around 50 percent of increasing costs from emissions pricing.

83. The impacts on future generations are expected to be significant, but will not eventuate for many years, likely decades. The Government therefore has options to develop additional measures to address impacts over time.

84. However, in the short term the Government should consider these long-term impacts when implementing its approach to emissions reduction and adjust its approach to reduce the impacts as much as possible.

85. The Māori Climate Platform provides a significant targeted funding source that can help address the distributional impacts on Māori. Agriculture-specific support for Māori will also help mitigate one of the largest sources of impacts on Māori.

Factors that risk effectiveness of existing support package

86. A major gap is that the majority of support policies are universal supports that are not specifically linked to climate mitigation impacts and that are not targeted to the groups that are most affected by Government climate mitigation policies. They are unlikely to be seen as climate supports by those affected by mitigation policies,[8] and their applicability and sufficiency could be questioned. We saw this come through in consultation, where submitters were asked whether the existing support package is adequate 90 per cent of responders said it is not. Additionally, 60 per cent of submitters who commented on distributional impacts said that more support is needed.

87. This particularly applies to lower-income households, who are expected to be more impacted by mitigation policies and are less resourced to invest in low-emissions tools that can reduce the impacts they face, but receive no targeted Government support to offset this increased impact. Some supports including the 'Climate Dividend' and public EV charge point network provide less benefit to lower-income households.

88. 9(2)(g)(i) [redacted]

89. Our modelling and analysis of potential impacts is limited given how the effects of the ETS and other mitigation policies interweave with the New Zealand economy and society in a complex and often unpredictable way. Without ongoing monitoring, it will be challenging for the Government to respond to distributional impacts that emerge over time.

Your direction is needed on whether to explore additional support options

90. The table below highlights how well the existing support package addresses expected impacts and presents high-level options for further support.

Affected group	9(2)(g)(i) [redacted]	Preliminary identification of options for further support

[8] For example, many submitters were positive about a climate dividend but were not aware that the dividend was the tax-bracket adjustment that had already been announced.

9(2)(g)(i)

Rural communities	[redacted]	Targeted retraining and transition support for affected workers/regions.
Agriculture and agricultural manufacturing sectors	[redacted]	Targeted retraining support for affected workers.
Māori and iwi	[redacted]	Strengthen existing targeted support for Māori, particularly climate action fund and Māori agribusiness support.[9]
Lower-income households	[redacted]	More targeted support for low-income households to adopt low-emissions technologies.
Future generations	[redacted]	*To be determined in future ERPs when impacts are clearer.*

91. In addition to the specific groups identified above, there remains great uncertainty as to where and when impacts may fall.

92. 9(2)(h) [redacted]

93. Our view is that the existing support package could meet the CCRA requirement as general supports would mitigate, although not necessarily eliminate, impacts on the various affected groups. The strategy could set out details of how general supports would be available to specifically affected groups (the draft chapter does this).

[9] More options have been provided separately as part of the briefing on the expected Treaty impacts on iwi and Māori [BRF-5276].

94. Additional interventions could be justified in order to more effectively mitigate impacts, improve outcomes for New Zealanders and help maintain social license for the Government's efforts to reduce emissions.

95. We recommend you direct us to develop an approach for monitoring and responding to distributional impacts as they emerge over time. This could help you to more effectively monitor the impact of your planned ERP2 actions on stakeholders and provide optionality for future interventions, should they become justified. It would also align with your recently agreed adaptive management approach for meeting emissions targets [BRF-5138].

96. We seek your direction as to whether:

   i you are satisfied that the existing support package sufficiently mitigates the expected impacts on New Zealanders affected by Government climate change policies and ; or

   ii you wish to strengthen the existing support package with additional targeted support for affected groups.

97. As Minister of Climate Change, you have few direct levers to address distributional impacts. If you believe that further support policies are needed, we will need to engage with other agencies to explore options in more detail. Your influence will be required to encourage other Ministers to support and resource additional support policies.

98. If you wish to include further support policies, ERP2 timelines mean that it will not be possible to include fully developed policies in the final ERP2 document. In this case, we will work with other agencies to develop options as much as possible and signal in ERP2 where we have identified the need for additional support and that work is underway to develop an appropriate response. We would include as much detail as possible, including timeframes and expected funding source[10] for the policies.

Te Tiriti analysis

99. Treaty impacts on iwi and Māori are addressed in the parallel briefing [BRF-5276].

Next steps

100. We have prepared a draft ERP2 distributional impacts chapter that illustrates what the Government's position would look like without additional policies. We invite any feedback on this draft, which is part of the draft plan appended to BRF-5423.

101. Please indicate whether you are comfortable with using the existing support package for your strategy to mitigate ERP2 impacts, or if you would like to explore additional targeted policies for specific groups.

[10] The CCRA requires that an ERP details the funding source(s) for its strategy to mitigate impacts.

102. If necessary, we will engage with other agencies to explore additional support policies, as per your direction and report back with options for your consideration.

103. We recommend that you share this briefing and its appendices to Ministers with portfolio responsibilities for parts of ERP2.

Appendix One: Summary of agency and consultation feedback on ERP2 impacts

Appendix Two: ERP2 distributional impacts CGE modelling results and limitations

Appendix Three: Climate Change Commission distributional impacts advice

BRF-5302 Appendix One: Summary of agency and consultation feedback on ERP2 impacts

General feedback from submissions

474 of the 1846 submissions received during public consultation answered questions on the impacts of the proposed plan. 90 per cent of submitters who commented on whether there should be more support from Government in mitigating the impacts of policy, said there should be more support. When discussing ways to support impacted groups 67 per cent of submitters suggested more financial support for affected households and 18 per cent suggested more training, upskilling, information and advice for affected groups.

Summary by sector of consultation feedback and agency qualitative analysis on impacts of ERP2

Topic/ Sector	***Summary of agency analysis of sector impacts***	***Consultation analysis***
Emissions Trading Scheme	MfE has used a combination of modelling (on NZ ETS settings) and intervention logic (on land use change) to determine expected impacts of policies. ***Impacts on households*** • The NZ ETS can increase costs for households. This is particularly relevant when considering annual NZ ETS unit supply and price control settings (NZ ETS settings). We do not expect this to be a significant impact. However, pricing mechanisms like the NZ ETS are regressive, meaning they impact lower income households proportionately more than higher income households. • We know that emissions costs disproportionately impact lower socio-economic groups. This is because lower-income households spend a greater portion of income on emissions-intensive items than higher-income households and because lower-income households have less capacity to substitute towards low-emissions options, particularly in the short term. • Older people can have low levels of financial resilience, particularly those who rely on NZ Superannuation alone. Older people who spend more time at	*Quantitative:* • 25 submitters directly identified impacts from NZ ETS policies (out of 91 submitters who commented on this topic). • The NZ ETS was mentioned by over 100 submitters who commented on impacts of the plan – particularly in relation to increased costs for households, power bill rises and intersecting policy areas such as forestry. *Qualitative:* • A key theme in submission comments was that more should be done to mitigate the impacts increased

	home, may be more impacted by increased energy prices and even avoid using the energy that they need. • Although rising prices should incentivise consumers to reduce their consumption of emissions-intensive goods and services, low-emissions alternatives take time to become widely available and affordable, or sometimes come with high up-front costs. This means some households, particularly those on lower incomes may have less capacity to move their consumption towards low-emissions options. • The impact of emissions prices on households and the economy is an additional matter the Minister of Climate Change must consider when setting regulations about NZ ETS settings. ***Impacts for forestry and land use change*** • The NZ ETS incentivises afforestation through the value of NZUs earnt for carbon sequestration by forests. This value provided by the NZ ETS means that some agricultural land uses (e.g. sheep and beef farming) are less economically viable than exotic forestry. The shift in land use from agriculture to forestry can have a negative impact on rural communities (eg due to closure of farms and flow on impacts for related employment opportunities) and New Zealand's exports. The restrictions on whole farm conversions to exotic forests registering in the NZ ETS policy is proposed to positively mitigate/dampen this impact. • Māori have direct interests in the NZ ETS as foresters and holders of emissions units (NZUs). For Māori with forested land registered in the NZ ETS (e.g. received through Treaty settlement such as Ngati Raukawa), the value of NZUs is important for the value of Māori assets i.e. NZUs and forested land. The Government's objective of, and actions for, supporting NZ ETS market credibility and confidence, protecting property rights, and providing regulatory predictability would be expected to support these rights and interests. • Restrictions on whole farm conversions to exotic forestry registering in the NZ ETS are expected to impact those who do not already hold relevant land and	transport and energy costs have on **lower-income households,** because of NZ ETS settings. Submitters believe that there is a higher level of mitigation needed, given that the Government has prioritised the NZ ETS as a key tool to deliver emissions budgets and that universal supports are insufficient alone. • Some submitters expressed concern that the NZ ETS approach set out in ERP2 may disadvantage **smaller domestic businesses**. • There were a number of comments about the NZ ETS as a key tool favouring exotic afforestation and the impact this will have on **future generations**, who will have fewer land-use options and will wear the risks associated with larger amounts of single-species forests.

	intend to plant it and register in the NZ ETS. However, they are likely to have a positive impact on rural communities. ***Other considerations*** • Some of the more specific actions included in the ETS chapter (industrial allocation updates and market governance & assurance) could have distributional impacts which will depend on decisions yet to be made. • Industrial allocation updates will directly impact relevant industrial allocation recipients. We will be in a better position to identify which recipients following decisions on, and publication of, industrial allocation regulations later this year. • The focus of the market governance actions is to improve the transparency of market information, the integrity of the market, and to enhance participants' understanding of how the market works. These actions are not likely to have significant distributional impacts, but this will depend on final policy design.	
Energy	***CCUS*** • Analysis on the impacts of CCUS has been undertaken by MBIE using insights from literature, stakeholder engagement and reports from Wood Beca and Ara Ake on the potential of CCUS in New Zealand. • While CCUS is in enablement stage it is up to individual businesses whether they use the technology. It is uncertain whether the creation of a regulatory regime will result in CCUS use in New Zealand, beyond the geothermal sector who already utilise a version of CCUS (based on engagement with potential CCUS users). If businesses use CCUS there may be positive economic benefit from creation of jobs in CCUS activities and retention of jobs in industry and gas production that use of CCUS makes viable. There may also be economic benefits of additional gas being unlocked for households and businesses. Potential negative environmental risks are expected to be managed through robust regulation.	• Many submitters were concerned that rising electricity prices will slow the transition and hit **lower-income households** the most. • Some submissions raised questions about the potential impacts on residents of areas near to new renewable energy sites (eg, wind and solar farms). Concerns were focused on disruptions from noise and increased traffic that impact the enjoyment of property. • Submitters from **rural communities** shared that they are less able to make a switch to renewable energy due to

	• If businesses deploy CCUS there may be the following distributional impacts: • Employees: There may be additional job opportunities in CCUS activities, which may be suitable for people that work in the energy sector. Employees may also benefit from retention of jobs in gas production or industry if CCUS makes these activities commercially viable. • Employers: CCUS may support the viability of gas production and industrial businesses. • Regions: Regions with significant gas production or industrial activity (eg Taranaki) may particularly experience the economic benefits of CCUS. • Iwi and Māori: The sites with the most CCUS potential in the near future are natural gas reservoirs in Taranaki. Iwi in that region could be impacted more. There may be new economic opportunities for Māori groups should there be CCUS projects in their rohe (tribal area). • Wider communities: Electricity and natural gas consumers could enjoy more stable electricity and natural gas prices if CCUS unlocks additional gas production. • Depending on the time it takes to put in place the regulatory regime and implementation by businesses, some impacts could take place within the next five years. As noted above, the impacts of CCUS decisions depend on businesses deciding to use this technology. ***Electrify NZ*** • Electrify NZ includes several initiatives aimed at making it easier and cheaper to consent, build and maintain renewable electricity generation, distribution and transmission. • Workstreams are at different stages of policy development and are likely to have varying distributional impacts, depending on final policy decisions. However, even with final policy decisions, there is limited ability to assess	existing grid challenges, and that these impacts could be compounded by increasing amounts of severe weather events as a result of climate change. • Some submitters shared that as **renters** they are not able to make building changes (invest in solar, etc.) and that landlords have little incentive to change from the status quo as they are less driven by the relative costs of energy when not paying for it. • Employers and employees in the **Taranaki region** expressed concern about the future of industry in the region as New Zealand transitions away from gas and coal over time.

	distributional impacts on some work streams. For example, the Fast Track Approvals Bill and the offshore renewable energy regime only provide a regulatory framework for developers/applicants to use, at their discretion. While these regimes may set certain eligibility criteria, future system-users (ie, applicants) will submit specific information on the proposal (eg, timing, location, scale). Until applications are received and assessed, distributional impacts are unknown. • Proposals for the offshore renewable energy regime have been publicly consulted on through two discussion documents between 2022 and 2023. The Environment Select committee is currently considering Fast Track Approvals Bill, which included a public consultation period in March-April 2024. The remaining projects will also be subject to public consultation. Feedback could assist in identifying potential distributional impacts for some workstreams. • Treaty impacts analysis has been undertaken for parts of the Electrify NZ programme (Offshore renewable energy regime, Fast Track Approvals Bill, Resource Management Act Amendment Bill 2).	
Transport	Reducing transport emissions by supporting more electric vehicles can have many benefits, such as reducing air and noise pollution, improving physical health and mental wellbeing, and making our towns and cities more liveable. ***10,000 public EV charge points and the retention and review of the Clean Car Standard*** ○ The main current barrier to light EV uptake is the high upfront cost. Assumptions include that, as technology improves, the cost disparity to light ICE vehicles will decline and therefore this barrier also declines. ○ A secondary barrier to light EV uptake, which directly influences consumers, is 'range anxiety' (fear of not being able to charge a vehicle while travelling longer distances). It is assumed that a denser network of public EV charging points reduces range anxiety. ○ EVs can provide energy cost savings. As a result, consumers save money on energy costs, and the EV uptake results in a net reduction in costs for society.	• A large number of submitters are concerned that a Government preference for private electrification, with no support to enable people to make that transition if they **cannot afford an EV** (which is not just lower-income households) is inequitable. Further, many submitters shared that the proposed EV charging infrastructure provides benefits to existing EV owners, which are generally a wealthier demographic. • Some submitters are concerned that a focus on electrification of private vehicles has a disproportionate impact

	o Light ICE vehicles are a contributor to air and noise pollution and associated impacts on health. Transitioning from diesel (and to a lesser degree, petrol) vehicles to light EVs will lessen this negative health impact. ***Heavy vehicles (freight and related sectors)*** o Currently, the main barrier to Zero Emissions Heavy Vehicle (ZEHV) uptake is the high upfront cost of these vehicles. Assumptions include that, as technology improves and global production increases in the longer term, the cost disparity of ICE vehicles and the payload disadvantage will decline. o Diesel heavy vehicles are the primary contributor to air pollution and associated impacts on health in the transport sector. Transitioning from ICE heavy vehicles to ZEHVs will lessen this negative health impact. o ZEHVs can provide energy cost savings. This could result in lower energy costs for businesses, although this will depend on how payloads compare with ICE heavy vehicles. ***Public transport*** o Public transport improves access to social and economic opportunities for households. Depending on the quality and cost of public transport, services may reduce transport disadvantage (eg, for those who cannot drive). o Public transport can have co-benefits in reducing air pollution and road congestion on the transport network, which has a corresponding economic benefit related to health and productivity. Where more people use public transport, greater optimisation and efficiency gains can be generated from past investments. o The decarbonisation of the public transport fleet will support greater operational efficiency of the public transport fleet and could enhance national energy resilience to rising oil prices.	on communities who can't drive (**disabled community, youth**) or can't afford to own a car. • One industry submitter commented that **domestic coastal shipping** is very cost-sensitive industry with slim profit margins and will feel any impacts of heavy transport policy changes more harshly. • Some submitters shared concerns that **employers and employees** in some types of business may be unable to transition to electric courier/freight vehicles without reform in employment laws (vehicles may need longer to charge than current break times/driving hour regulations allow). • Submitters were concerned that the skill set changes in employment for this sector (eg, servicing and mechanics) could disadvantage **employees.**
Agriculture	The impact of pricing needs to be factored alongside ETS settings that also drive land use change from sheep and beef to Forestry. Forestry policies (such as land use change restrictions) will have an impact on the degree pricing affects sectors.	*Quantitative:* • Over half of the comments we received about impacts on regions and communities from policies talked about

	Impacts for Māori • Māori own and manage "an estimated 30 percent of plantation forest land, 10 percent of land used for kiwifruit and dairy production, and 25 percent of land used for sheep and beef production" (Reid, Smiler et al., 2019, p.6). • Māori farms tend to be larger than non-Māori farms, so individual Māori farms may feel larger impacts compared to non-Māori smaller farms. In 2022, the average size of a Māori farm was 865 hectares, more than three times as large as the average New Zealand farm (279 hectares). This allowed Māori farms to hold higher numbers of livestock comparatively. On average, Māori farms had more than two times as much stock as that of all New Zealand farms (3,780 compared with 1,769). • Māori agricultural enterprises may feel more of the impacts because they are over-represented in the negatively impacted sectors, and find it harder to attract finance (eg, to imbed on-farm changes) due to management structures. • Māori workers form a disproportional component of the affected sectors/work forces (eg, Māori make up around 40% of the meat processing workforce), resulting in, e.g., a disproportional impact on their communities. ***Impacts for rural communities*** • Rural communities will be impacted as land use change from sheep and beef to forestry evolves. This arises from the fewer workers needed to operate forestry (c.f., farming and processing), and the changes in skills required. **Impact analysis of policies** ***Development of mitigation tools and technologies*** • Availability of tools is likely to have positive economic and social impacts.	the impacts of the agriculture and forestry policies. *Qualitative:* • A number of submitters shared worries that land-use change from agriculture to forestry will have impacts on the choices that **future generations** have for food production. • Some submitters expressed concerns that New Zealand as a whole, including **rural communities** could face more food insecurity (because of changing food-producing land to forestry). • We heard from **Māori agriculture and forestry industry** submitters, particularly in Gisborne area, that a lot of Māori collective land is erosion prone and could benefit from native afforestation to protect local communities. • We heard a range of concerns from submitters about the impacts of policy changes in the agriculture sector on rural communities, including: ○ That **Māori** are disproportionately represented in employment in the agriculture sector – any

	• There are, however, likely to be fewer tools available to mitigate sheep and beef farming emissions than dairy emissions. This could cause disproportionate criticism for those parts of the industry that are unable to uptake technology to support faster emissions reduction. • Māori are disproportionately represented in sheep and beef farming so this could impact Māori more. ***Developing measurement of on-farm emissions for use by 2025*** • The emphasis of this work is the standardisation of emissions calculation and the improvement of existing emissions calculations. Consequently, the distributional impacts are low. • While there will be a small "cost" for farmers (eg, in the time using the tools), this should be relatively evenly felt across the sector. ***Implementing a fair and sustainable pricing system by 2030*** • This depends on the design of the pricing system. Previous modelling done for a split-gas farm-level levy suggests that the sheep and beef sector will be more strongly impacted by emissions pricing (Land use change to forestry). • Additionally, sheep and beef farming is not as profitable as dairy, making impacts more significant. • Māori agricultural enterprises will feel disproportionally more impacts given the amount in the sector.	impacts to sector employees will reflect this. ○ The ongoing **employment** impact in transitioning farmland to forestry, as fewer employees are needed to manage permanent forests. ○ That farming communities are very strong, and a reduction in farmers could have negative impacts on broader **rural communities**.
Forestry	***Employment impact analysis*** • The relative employment figures between agriculture and forestry can vary significantly depending on forest and farm type, region, as well as over time.	*Quantitative:* • Over half of the comments we received about impacts on regions and communities from policies talked about

	• Agriculture and production forests provide significantly more relative employment than carbon/permanent exotic forestry, due to having more ongoing management practices. Some research suggested that production forestry provides more relative employment than sheep and beef (PwC), while another stated specifically that sheep and beef provided more employment in the Wairoa region (Beef & Lamb). This suggests that existing land use proportions (between Ag and Forestry) in different regions may affect the impact on regional employment from land use change. In addition to this, the relationship between relative employment between agriculture and forestry is likely prone to change over time (e.g. from mechanisation) and the reduced need for labour in these sectors. • Detailed studies in Australia suggest that changing land use from agriculture to plantations can result in either a net gain or a net loss of employment, depending on what type of agricultural land use is replaced and the type of plantation being established; and that changing land use to plantations is associated with complex spatial changes in the location of jobs, which means there are employment benefits for some communities and losses for others. • Production forests are generally located approximately a maximum of 100 – 150 kilometres from market (i.e. port or Mill), however this depends on the infrastructure present in the region (i.e. rail vs roading). The impact that a forest will have on forestry employment in the region will depend on the type of forest and whether the region has domestic processing facilities or a port. Forestry will add to the employment of the region, but likely in, or around the main centres rather than out in the more rural areas where the forests (and farms) are located.	the impacts of the agriculture and forestry policies. *Qualitative:* • Some submitters pointed out that the forestry industry has a higher rate of workplace injury and accidents than farming, and that Government action to expand this sector without accompanying **workplace health and safety** reform will result in higher numbers of those accidents. • Submitters from **downstream communities** are concerned about increased environmental risks from slash associated with increasing amounts of forestry. • Many submitters are concerned that the forestry proposals will lock in land use for forestry and burden **future generation** with more gross removals (due to the net-based approach). • A range of submitters raised the **positive impacts** of permanent native afforestation over time – including long-term sequestration, biodiversity, resilience to extreme weather and pests. • Some submitters are worried about the impacts land use change will have the on livelihoods and identity of

		communities, particularly the **meat and dairy industry.** • Some submitters discussed negative impacts on **Māori agriculture and forestry industries**, particularly in the Gisborne area, where a lot of the Māori land is erosion prone, and suggested sustainable native afforestation could be a solution here if Government chose to provide support for it. • Some submitters raised that **Māori** are disproportionately represented in employment in forestry and will, therefore, be disproportionately affected by any employment changes in the sector. • Some submitters were concerned about the impact of increased pine afforestation on **nearby communities** (due to wildling pines in native areas that need to be managed). • **Agricultural communities** are concerned that land use change to forestry will impact rural employment, community and sense of place, services, increase burden on rural fire fighters and may displace agricultural workers who can find no alternative work in the area (and that conversion to forestry will not create the same

		amounts of FTE employment opportunities).
Waste	In relation to WMF investment in resource recovery infrastructure, the scale of impact is significant but already existent. In 2020, New Zealand's resource recovery infrastructure deficit was estimated at \$2.1 – \$2.6 billion (with an additional \$0.9 million deficit for enabling services). ***Impacts*** Waste infrastructure is not currently equitably placed around the country. Some regions have access to fully developed material recovery facilities (MRF's) and other options, while others are limited to landfills of varying technological advancement. The WMF can minimise this inequity by supporting the development of infrastructure in lesser serviced regions, including through regional facilities that multiple territorial authorities can access. Many territorial authorities do not have sufficient funding to develop their own resource recovery infrastructure. *Waste policies have been designed to mitigate these impacts* • We have undertaken initial feasibility studies to understand whether "lower" classes of landfill, produce sufficient emissions to justify their inclusion in regulation. This work is active. • Requiring all landfills to be equipped with landfill gas capture could have an inequitable impact across the landfill system. These impacts include the up-front cost of installation, which may be a significant burden for smaller sites and for non-municipal landfills that do not receive high quantities of organic waste. • Added benefits may be available to operators who capture landfill gas and then use it to generate power. This model is adopted by prominent waste operators in New Zealand.	• There was limited feedback on possible impacts of proposed policies. This aligns well with the assessment that MfE officials have undertaken that there are limited impacts, and the efforts made to mitigate possible impacts in policy design.

	Engagement with industry will be key to understanding the appropriate pace and scale of any changes that are recommended through the landfill gas capture investigation. Changes to bring New Zealand up to international efficiency standards and that respond to UNFCCC recommendations will likely necessitate some change to the status quo.	
Non-forestry removals	There may be some distributional impacts (both economic and non-economic) from developing a policy framework to progress recognition of non-forest removal. Policy development is still in the early stages and has yet to model the impacts of these removal activities. ***Māori impacts*** • Māori have a higher proportion of the population living in rural areas, compared with the total population, and may be impacted if this policy incentivises significant conversion of farmland to non-forest removals. • Removals that support biodiversity co-benefits may yield cultural benefits to Māori landowners in terms of restoring te taiao to a more balanced and sustainable ecosystem. Depending on the type of removal activity supported, other commercial co-benefits might such as manuka honey production, the commercialisation of bio-actives from sustainably produced native flora, and eco-tourism. • Under Article 2 of Te Tiriti, Māori were guaranteed rangatiratanga over their lands, forests, and other taonga. In addition to ownership rights, Māori have rights and obligations relating to land and other taonga. Some of these have been recognised in Treaty settlements. Any policy would need to uphold these rights. For example, the ownership of foreshore and seabed would need to be carefully considered through the development of any blue carbon removal activities. • Could enable a wider range of Māori landholders to make money from planting plants.	• Feedback in submissions largely focused on the possible positive impacts in utilising more nature-based solutions. For example, a number of submitters talked about the benefits that permanent native afforestation could have for soil quality, biodiversity, the future look of the environment, resilience to extreme weather and pests and the positive impacts that native forestry could have for Māori (compared to exotic forestry).

Impacts for farmers and rural communities

- Recognising non-forest removals in a market system could have some impacts on rural communities. If this policy incentivises conversion of farmland to non-forest removals, this could result in a reduction on jobs or hours worked on communities affected by land use change. An example of this is the potential recognition of rewetting drained organics, which could result in productive dairy farms retiring. However, this also provides an opportunity for farmers (especially sheep and beef farmers) to retire marginal land and transition to more sustainable land use practices without losing revenue on that land.
- Alternative land uses, especially on marginal land, could create opportunities for farmers to offset a future price on their agricultural emissions.

By 2030 we can expect:

- Increased interest from landowners and business to invest in non-forest removal activities.

- This could lead to increased investment in these types of removal activities.

- Incentivisation of protection of existing removal land categories.

By 2050 we can expect:

- All land use categories measured, accounted for and incentivised through suitable, high integrity mechanisms.

- Restoration of degraded land categories such as wetlands and peatlands.

BRF-5302 Appendix Two: ERP2 distributional impacts CGE modelling results and limitations

Modelling overview

1. To inform our analysis on distributional impacts, MfE commissioned independent computable general equilibrium (CGE) modelling of the impacts of climate mitigation policies. The modelling estimates the aggregate impacts of ERP2 on the economy and then breaks these down into insights on distributional impacts on different groups and parts of the economy.

2. We do not yet have final modelling because of delays to the finalisation of ERP2 policies and must rely on interim modelling in order to finalise the distributional impacts strategy within ERP2 timelines.

3. We do not anticipate a significant shift between interim and final modelling figures, but this could change depending on final Ministerial decisions on mitigation policies. If there is a substantial shift in modelling figures that could impact on your decision, then we will update you and seek more direction. The final distributional impacts ERP2 chapter will include final modelling figures.

Limitations of modelling

4. CGE modelling of this nature is inherently complex and uncertain and while it reflects our best possible estimates, it has several known limitations:

   i The modelling effectively extends the current economic structure out to 2050, it doesn't imagine what the future economy will look like, with new goods, services and exports.

   ii The model doesn't account for the impacts of climate change on society and the economy nor the benefits of mitigating these impacts. The economic effects of climate mitigation actions are mostly negative compared to a scenario without these actions, but the model doesn't consider the long-term benefits of reducing climate risks or the potential economic damage from climate change itself.

   iii Modelling extends only to 2050 and doesn't account for the outstanding gross emissions at that point, which will still require mitigation or ongoing offsets.

   iv The ETS price used in the models for the ERP2 and current pathways is exogenous and assumes a short-term increase in ETS price before becoming stable at $50 per tonne from 2032 onwards. This price is significantly below the price required to reach net emissions by 2050.

   v The model assumes that total economic output remains stable, so if climate policies reduce the output of a sector, activity in other sectors will increase. This doesn't account for the possibility of overall economic contraction such as recessions or capital flight offshore.

   vi The model does not account for price-response substitution. This means that firms and sectors reduce their output as costs increase, but never reach a point where they become unprofitable and stop operations. The modelling is therefore likely to understate firm closures and unemployment.

vii Uptake of EV and other technologies are averaged across households and don't consider the challenge or impact of high upfront costs on lower-income households, meaning the overall impacts on lower-income households are likely understated.

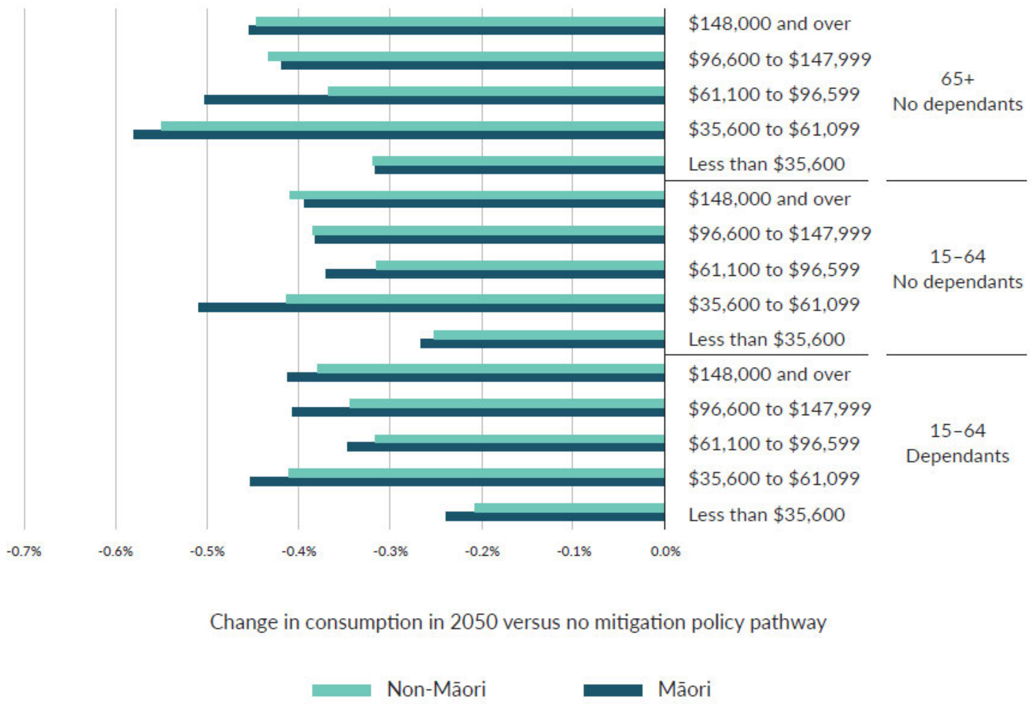
Findings of modelling

5. Modelling results show the expected difference in output or consumption in 2050 between the proposed '**ERP2 pathway'** (includes impacts of expected ERP2 measures), the '**current pathway'** (existing climate mitigation policies) and a '**no mitigation policy pathway'** (a hypothetical counterfactual with no climate mitigation policy). Figures provided reflect a percentage difference between outcomes in the ERP2 pathway and no mitigation policy pathway unless otherwise specified.

6. At an economy-wide level, the modelling suggests that ERP2 climate mitigation actions will lead to real gross domestic product (GDP) that is about 0.39 per cent lower in 2030 than it would be in a hypothetical no mitigation policy scenario. The impact on GDP is expected to remain at similar levels through to 2050. Overall ERP2 policies are expected to slightly improve outcomes compared with existing policies, where GDP was expected to be 0.4 per cent lower in 2050.

Impacts on households

Figure 1: Expected impact of ERP2 policies on household consumption, by household income and ethnicity, 2050



Note: Deviation in real consumption in 2050 under the ERP2 pathway from real consumption in 2050 under the counterfactual 'no mitigation policy' pathway.

Source: Torshizian, E, Adams P and Stroombergen A (2024) *Economic impact of New Zealand's Second Emission Reduction Plan.* Report to Ministry for the Environment by Principal Economics Limited in collaboration with The Centre for Policy Studies and Infometrics Limited.

7. Overall ERP2 policies are expected to slightly improve outcomes for households: household consumption decreases by 0.39 per cent compared with 0.4 per cent under current policies.

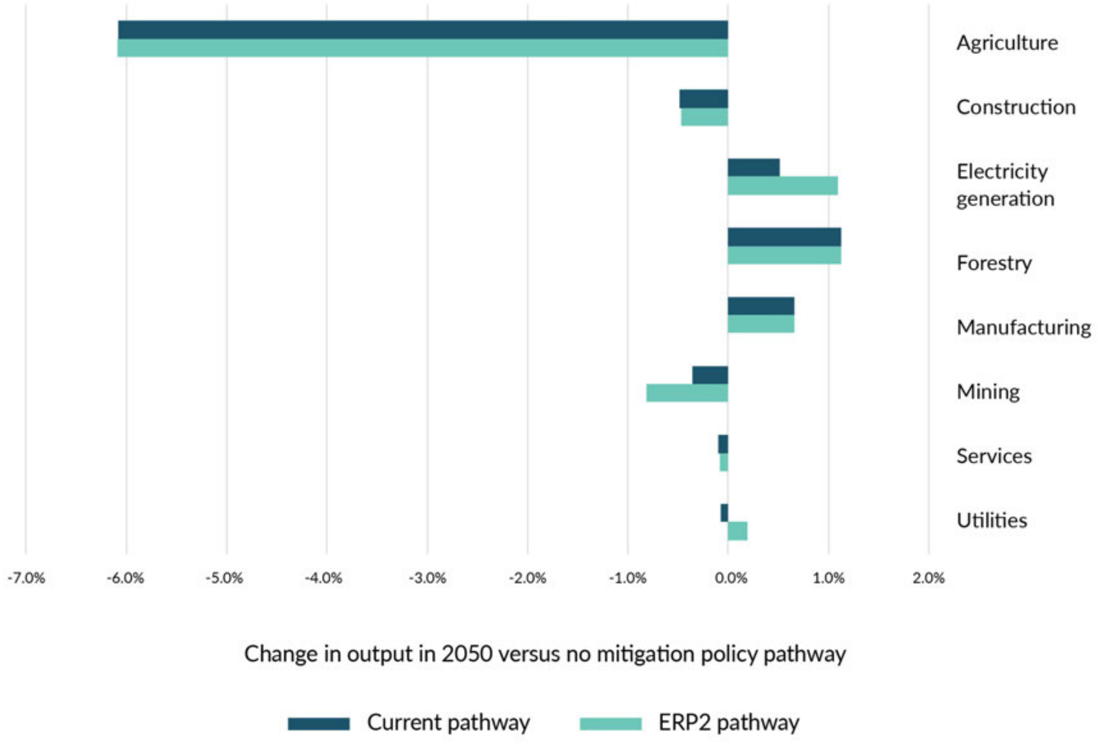
8. Figure 1 shows that under the ERP2 pathway, all households in New Zealand are expected to have lower consumption in 2050 than they would have without efforts to reduce emissions (the counterfactual). This is because added costs from changing to low-emissions production or from the NZ ETS raise the price of goods and services, so that people cannot purchase as much as they would have otherwise. However, the difference in consumption is fairly small, only between 0.2 per cent and 0.6 per cent by 2050 lower than the no mitigation pathway, depending on the type of household.

9. Lower-income households are expected to be the most affected, particularly those earning between $35,600 and $61,099.

10. Māori households are expected to be more affected than non-Māori households, but the difference is small. On average, across all households, Māori are expected to experience a decrease in consumption of 0.4 per cent compared with 0.37 per cent for non-Māori households.

Impacts on sectors

Figure 2: Expected impact of mitigation policies on output by sector, 2050



Note: Deviation in sectoral output in 2050 under the ERP2 pathway and 'current' from sectoral output in 2050 under the counterfactual 'no mitigation policy' pathway. **Note that an underlying error in the data likely results in aggregated manufacturing results being positively skewed. This error will be corrected in the final modelling.**

Source: Torshizian, E, Adams P and Stroombergen A (2024) Economic impact of New Zealand's Second Emission Reduction Plan. Report to Ministry for the Environment by Principal Economics Limited in collaboration with The Centre for Policy Studies and Infometrics Limited.

11. ERP2 policies are not expected to have significant impacts on sectoral output compared with our existing policies.

12. Agriculture is expected to be the most affected sector[1]. Agricultural output (in GDP terms) is expected to be higher in 2050 than output today, but to be 6.1 per cent lower than expected without any mitigation actions. This results mostly from changes to emissions pricing, which are expected to make forestry more financially viable and shift the balance of land use from agriculture to forestry. This effect is mitigated somewhat by the Government's limits on farm conversions registering in the NZ ETS. Forestry output is expected to be 1.1 per cent higher than without any mitigation actions.

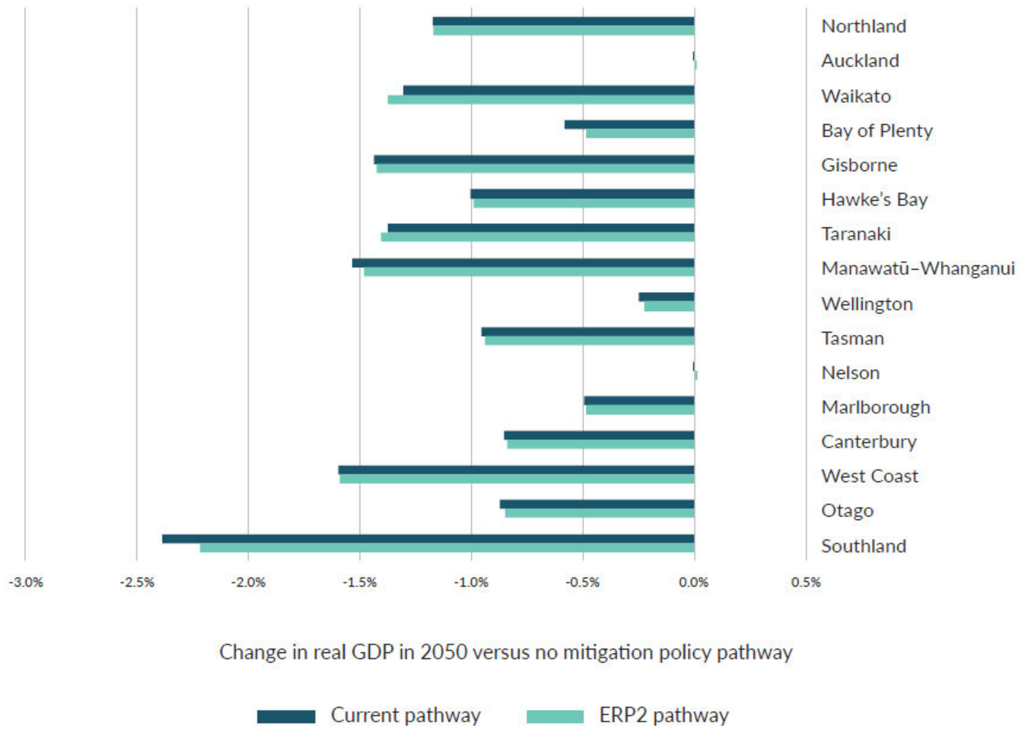
13. The result for manufacturing is mixed, with some, particularly agricultural manufacturing significantly lower than the no mitigation policy pathway, and oil and chemical manufacturing also lower. However, several other manufacturing subsectors benefit from ERP2 policies. For example, we expect lower results for meat products (-11.77 per cent), dairy products (-8.84 per cent), refined oil products (-4.92 per cent) and chemical fertiliser (-4.28 per cent) but higher results for appliances (3.57 per cent), other equipment manufacturing (3.64 per cent) and paper products and printing (2.72 per cent).

14. For other sectors, we expect higher electricity generation (driven by 6.06 per cent higher renewable generation) and lower mining and construction than would be expected without mitigation actions. Services and utilities are largely unaffected.

Impacts on regions

[1] Note that this modelling includes different assumptions around the impacts of agricultural emissions pricing on agriculture than those used in the ENZ model. The ENZ model assumed that pricing would have no impact on production or stock numbers. This modelling assumes pricing can impact sectoral output via driving uptake of mitigation technologies, although impacts on the sector from this modelling are largely driven by land-use changes from afforestation, not agricultural emissions pricing.

Figure 3: Expected impact of mitigation policies on real GDP by region, 2050



Note: Deviation in real GDP in 2050 under the ERP2 pathway and 'current' pathway from real GDP in 2050 under the counterfactual 'no mitigation policy' pathway.

Source: Torshizian, E, Adams P and Stroombergen A (2024) Economic impact of New Zealand's Second Emission Reduction Plan. Report to Ministry for the Environment by Principal Economics Limited in collaboration with The Centre for Policy Studies and Infometrics Limited.

15. Regional impacts are mainly driven by regional industry mixes and how they are affected by the changes in land use from agriculture to forestry. The Government's ERP2 policies are expected to slightly improve the overall impacts on regions, compared with the current set of policies.

16. As Figure 3 shows, the most affected regions are those with heavier reliance on dairy, sheep and beef farming such as Southland (-2.21 per cent), the West Coast (-1.59 per cent) and Manawatū–Whanganui (-1.48 per cent).

17. The least affected regions are urban areas with more service industries such as Auckland (0.01 per cent) or Wellington (-0.23 per cent). There are also minimal effects for regions with a different primary sector mix such as Nelson (0.01 per cent), Bay of Plenty (-0.48 per cent) and Marlborough (-0.48 per cent).

Effects of emissions pricing

18. Internal MfE modelling has found that under the recently announced NZ ETS settings, annual household expenditure caused by emissions pricing is expected to be about $610 in 2026 and $690 in 2029, up from $440 today. The tables below highlight the scale of impacts of emissions pricing under recent settings on electricity, fuel and inflation.

Figure 4: Expected impact of emissions pricing on electricity and fuel prices and inflation

Current emissions component of electricity and fuel prices			
	@$50 ETS price	@$60 ETS price (post announcement)	Difference in 2029 vs status quo[2]
Residential Retail Electricity (c / kWh)	1.2 – 2.1	1.4 – 2.5	0.3 – 0.5
Wholesale Electricity ($MWh)	3.75 – 5.15	4.50 – 6.20	1.05 – 1.44
Regular 91 Petrol (c / litre)	12	15	3.6
Diesel (c / litre)	14	18	4.1

Estimated household inflation impact			
	@$60 ETS price (announcement effect if sustained)	Difference vs status quo over 2025-29*	
		Annualized	Cumulative
Annual CPI Inflation	0.08%	0.03%	0.13%

19. We know that emissions pricing disproportionately affects lower socio-economic groups,[3,4] which contain a disproportionate number of people from Māori and Pasifika communities. The costs of emissions pricing will be felt by all New Zealanders, but especially by lower-income households.

20. This is because lower-income households spend a relatively greater portion of their income on emissions-intensive items and have less capacity to substitute those items for low-emissions options, particularly in the short term. Lower-income households also have less disposable income compared with higher-income households, so feel the additional costs from emissions pricing more keenly.

21. The Treasury's analysis highlights the impact on lower-income households.[5] It models how a hypothetical increase in emissions pricing would impact different households by increasing the costs of household essentials such as fuel, electricity and food.

[2] The difference in 2029 between status quo and new settings is based on a projected $14 difference in NZU prices.

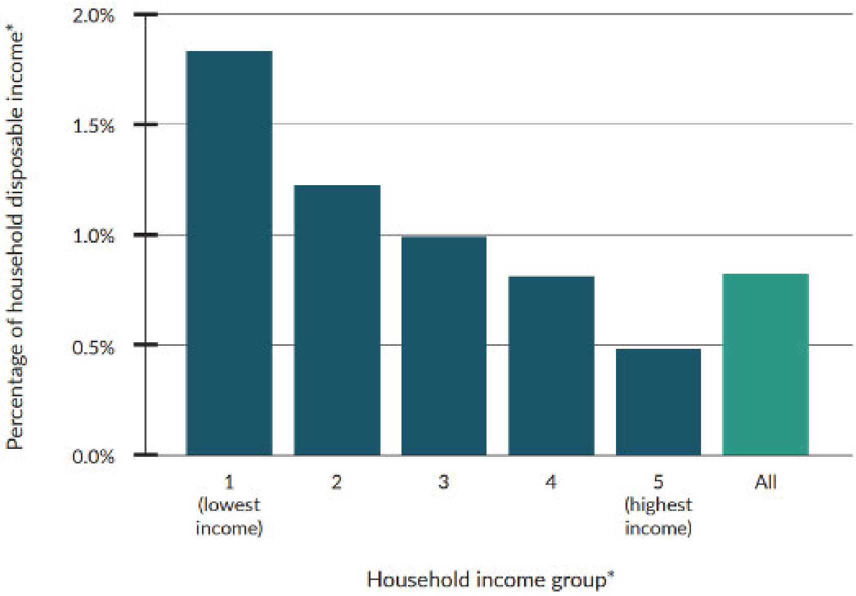
[3] Davis C, Hart B, Stubbing B. 2024. Analytical note: Household cost-of-living impacts from the Emissions Trading Scheme and using transfers to mitigate regressive outcomes (24/02). Wellington: Treasury.

[4] Ministry for the Environment. 2023. *Te Arotake Mahere Hokohoko Tukunga | Review of the New Zealand Emissions Trading Scheme: Summary of modelling*. See the 'New Zealand Emissions Trading Scheme household impacts model' section.

[5] Adapted and simplified from Davis C, Hart B, Stubbing B. 2024. Analytical note: Household cost-of-living impacts from the Emissions Trading Scheme and using transfers to mitigate regressive outcomes (24/02). Wellington: Treasury.

22. Figure 4 presents a simplified version of the Treasury's analysis. It shows that lower-income households would spend a higher percentage of their disposable income on emissions pricing costs compared with higher-income households.

Figure 4: Relative impact of emissions price increases on households by household disposable income



Note: * Mean increased spending on petrol, diesel, gas, electricity, domestic airfares and food due to a carbon price increase from $24.73 to $134.90 per metric tonne CO_2-e, as a percentage of mean household disposable income. Households are divided based on their household equivalised disposable income, with 1 indicating mean household earning in the bottom 20 per cent, and 5 indicating those earning in the top 20 per cent.

BRF-5302 Appendix Three: Climate Change Commission distributional impacts advice

1. The CCC's advice on ERP2 was predicated on the continuation of the Equitable Transitions Strategy and its recommendations were specifically focused on the Strategy. However, the key underlying themes from the recommendations are still valid and the CCC also highlighted several broader points in its advice.

2. The below table outlines several key recommendations and advice from the CCC, and MfE's evaluation of how these are addressed by your existing support strategy.

CCC advice and recommendations	MfE evaluation of existing support strategy
The transition to a low-emissions economy needs to be well paced, well planned, well signalled and co-designed with affected groups of people.	The Government's ERP2 outlines the Government's long-term strategy to reduce emissions, providing stakeholders with the information they need to plan accordingly. In development of ERP2, the Government has consulted and sought the input of a variety of stakeholders.
Initiatives that support continued education and training are needed for workers affected by the transition to a low-emissions economy.	Some un-targeted support for retraining exists, including through Apprenticeship Boost, but it is not flexibly designed to account for much of the in-work training needed and is lacking focus on those workers/businesses most affected.
Targeted policies should be used to support lower-income/capital households and small-to-medium businesses least able to transition.	There are currently no climate support policies in the ERP2 distributional impacts strategy specifically targeted at these vulnerable groups.
Inequitable impacts of emissions pricing should be managed through complementary policies that don't interfere with the effectiveness of the NZ ETS.	Inequitable impacts of emissions pricing are somewhat addressed by inflation adjusted support payments, as well as the Government's 'Climate Dividend' tax bracket adjustment. These supports do not interfere with the effectiveness of the NZ ETS.
The distributional impacts of climate mitigation should be considered alongside impacts of climate change adaptation. (Recommendation 9).	Distributional impacts from climate mitigation and adaptation have been considered independently through the ERP2 process due to resourcing and timing constraints. There are opportunities to improve this in the future and a more aligned approach would be valuable.
The impacts of climate policies should be managed using existing tools and resources rather than delaying climate action. (Recommendation 10).	The Government's approach does rely on existing support while achieving the climate targets as recommended by the Commission. However, Government decisions to delay or cancel some emissions reduction policies because of expected economic impacts (for example recent changes to the Clean Car Standard or the previous Government's discontinuation of the biofuels mandate), depart from the underpinning advice to avoid delaying climate action.