



# Approval of gazette notice for emissions budgets and formal response to the Commission's advice

Date Submitted:	5 May 2022	Tracking #: BRF-1491	
Security Level	Policy and Privacy In-Confidence	MfE Priority:	Not Urgent

	Action sought:	Response by:
Hon James SHAW, Minister of Climate Change	<p><b>Agree</b> to set emissions budgets.</p> <p><b>Approve</b> the proposed Gazette notice.</p> <p><b>Provide</b> feedback on the draft response to the Climate Change Commission.</p>	9 May 2022

Actions for Minister's Office Staff	<b>Return</b> the signed report to MfE.
Number of appendices and attachments #4	<p>Titles of appendices and attachments:</p> <ol style="list-style-type: none"> <li>Emissions budgets Gazette notice (for approval)</li> <li>Draft Response to the Climate Change Commission's advice on setting emissions budgets (Parliamentary paper)</li> <li>Advice on section 5ZC matters for consideration when setting emissions budgets</li> <li>Summary of arguments raised in the Lawyers for Climate Action NZ Inc proceeding regarding the Commission's comparison of its recommended emissions budgets as against the IPCC global pathways</li> </ol>

## Key contacts

Position	Name	Cell phone	1st contact
Principal Author	Freya Farrar		
Responsible Manager	Kate Whitwell	s 9(2)(a)	✓
Director	Melody Guy		

# Approval of gazette notice for emissions budgets and formal response to the Commission's advice

## Key Messages

1. This briefing
  - a. provides you with final advice for your setting of emissions budgets
  - b. seeks your feedback on the formal documentation required to notify emissions budgets and respond to the Climate Change Commission (the Commission)
  - c. officially records your decision to set your proposed emissions budgets as presented to Cabinet on 19 April 2022 (CAB-22-MIN-0148 refers).
2. The following documents are attached:
  - a. Proposed Emissions budgets Gazette notice (Appendix 1).
  - b. Draft Response to the Climate Change Commission's advice on setting emissions budgets (Parliamentary paper) (Appendix 2).
  - c. Advice on section 5ZC matters for consideration when setting emissions budgets (Appendix 3).
  - d. Summary of arguments raised in the Lawyers for Climate Action NZ Inc proceeding regarding the Commission's comparison of its recommended emissions budgets as against the IPCC global pathways (Appendix 4).

*This briefing will officially record your decision to set your proposed emissions budgets*

3. You must decide and notify the first set of three emissions budgets for the periods 2022-2025, 2026-2030 and 2031-2035 by 31 May 2022.
4. As Minister of Climate Change, you are the statutory decision-maker for setting emissions budgets under the Climate Change Response Act 2002 (CCRA). You are also the Minister responsible for meeting the emissions budgets.
5. On 19 April 2022 you presented your proposed emissions budgets to Cabinet, as outlined in Table 1 below. Cabinet has noted your intended emissions budgets (CAB-22-MIN-0148 refers).

**Table 1: Your proposed emissions budgets, as presented to Cabinet on 19 April 2022**

	<b>Emissions budget 1 2022 – 2025</b>	<b>Emissions budget 2 2026 – 2030</b>	<b>Emissions budget 3 2031 – 2035</b>
All gases, net (AR5)	290 MtCO <sub>2</sub> -e	305 MtCO <sub>2</sub> -e	240 MtCO <sub>2</sub> -e

6. Now that you have presented your proposed emissions budgets to Cabinet, we are providing you our final advice for your consideration (Appendix 3 and Appendix 4). This

follows earlier advice provided to you on consultation and the purpose provisions (BRF-415 and BRF-1393 refer).

- 7. By signing this briefing you will formally record that you have considered these matters in reaching your decision to set emissions budgets.

*We are seeking feedback on the formal documentation required to notify your emissions budgets*

- 8. A New Zealand Gazette notice must be issued to notify your emissions budgets. We have drafted a Gazette notice and this is attached for your approval (Appendix 1). Once approved, we will arrange to have the Gazette notice notifying emissions budgets issued on 16 May 2022 as intended.
- 9. At the time you notify the emissions budgets you must also issue a response to the Climate Change Commission's advice on setting emissions budgets, and this must be tabled in Parliament. A drafted response is attached for your feedback (Appendix 2).
- 10. We propose to finalise this document to incorporate your feedback and reflect any further editorial changes required, and submit a final version for approval next week.

*We have also included advice on arguments relating to the IPCC global pathways*

- 11. As you are aware, the recent judicial review proceeding brought by Lawyers for Climate Action NZ Inc (LCANZI) challenged the Commission's advice on its recommended emissions budgets. Officials have prepared an appendix summarising the differences in view between the Climate Change Commission and LCANZI, regarding the Commission's comparison of its recommended emissions budgets as against the IPCC global pathways, based on the evidence and legal submissions (Appendix 4). This appendix has been prepared to appraise you of the relevant issues before the final budget decisions are made. The advice that officials have provided for you to consider before making the budget decisions takes into account LCANZI's challenge to the Commission's advice.

## Other considerations

### *Risks and Mitigations*

- 12. We have provided previous advice on the risks and mitigations that arise from the process of considering and setting emissions budgets, including most recently in BRF-1424 ahead of Cabinet consideration of your proposed budgets. BRF-1424 gave a detailed list of risks and mitigations when setting emissions budgets.

### *Legal issues*

- 13. s 9(2)(h)
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]
  - [Redacted]

s 9(2)(h)  
[Redacted]

[Redacted]

[Redacted]

[Redacted]

### Next steps

18. The following table outlines the remaining dates for the emissions budgets, following your approval:

Date	Milestone
12 May 2022	Emissions budgets debated in Parliament
16 May 2022	Emissions budgets notified in the New Zealand Gazette Response to the Commission’s advice tabled in Parliament

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## Recommendations

We recommend that you:

- Note** the final advice on setting emissions budgets set out in Appendix 3 and Appendix 4.
- Note** you have informed Cabinet of your intention to set these emissions budgets.
- Agree** to set emissions budgets for the relevant emissions budget periods expressed as a net quantity of carbon dioxide equivalent, as outlined in the table below:

	Emissions budget 1 2022 – 2025	Emissions budget 2 2026 – 2030	Emissions budget 3 2031 – 2035
All gases, net (AR5)	290 MtCO <sub>2</sub> -e	305 MtCO <sub>2</sub> -e	240 MtCO <sub>2</sub> -e

Yes/No

- Approve** the wording of the proposed New Zealand Gazette notice to be issued on 16 May 2022 (Appendix 1).


Yes/No

- Note** at the time the emissions budgets are notified you must also table your response to the Commission's advice on emissions budgets in Parliament

- Provide** any feedback on the wording of the draft response to the Climate Change Commission (Appendix 2) by Monday 9 May 2022, so that a final version can be submitted for your approval Wednesday 11 May 2022.

Yes/No

## Signature

Melody Guy Director Climate Directorate	
Date	5/05/2022

Hon James SHAW, Minister of Climate Change	
Date	

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s 9(2)(g)(i)

Proactively released under the Official Information Act 1982

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s 9(2)(g)(i) [Redacted]  
[Redacted]  
[Redacted]

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## **Appendix 3: Advice on section 5ZC matters for consideration when setting emissions budgets**

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**Appendix 4: Summary of arguments raised in the Lawyers for Climate Action NZ Inc proceeding regarding the Commission's comparison of its recommended emissions budgets as against the IPCC global pathways**

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## Appendix 3: Advice on section 5ZC matters for consideration when setting emissions budgets

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
5ZC(2)a (i)	The Minister must have particular regard to how the emissions budget and 2050 target may realistically be met, including consideration of key opportunities for emissions reductions and removals in New Zealand.	The Commission recommends a range of cross-sector tools and policy measures across various sectors in the economy to reduce emissions or increase emissions removals. Their advice gives a rationale for those recommendations and outlines the evidence-base they have used. These recommendations are found mainly in the overarching advice in Chapters 6 and 7 and all the chapters on emissions reduction plan advice (section 2). The Commission identified and assessed a wide range of significant opportunities for emissions reductions and removals and included the key options in their 'demonstration pathway'.	<p>Since the advice we provided in August 2021, the impact of additional policies on emissions reductions has been estimated and used to assess the sufficiency of the emissions reduction plan policies to meet the Minister of Climate Change's (Minister) proposed emissions budgets. The emissions reduction plan therefore provides a realistic plan to demonstrate how the proposed budgets may realistically be met.</p> <p>Analysis by the Climate Change Commission (the Commission) suggested that Energy and Industry would drive absolute emissions reductions in the first emissions budget period. The quantified policy abatement estimates for the emissions reduction plan also show the Energy and Industry sector is expected to be the main driver of abatement for the first emissions budget.</p> <p>The Commission's analysis suggests that in the second and third emissions budget periods Energy and Industry, and Transport will be the sectors making the largest absolute contributions to emissions reductions. Agriculture and Forestry are also expected to make substantial contributions.</p> <p>Quantified policy estimates for the emissions reduction plan indicate that Energy and Industry, and Agriculture are expected to have the largest potential contributions over later emissions budget periods. The contribution of Agriculture is in large part due to modelling assuming the availability of an effective methane inhibitor from 2024 for sheep and beef farmers and in 2025 for dairy farmers. s 9(2)(f)(iv)</p> <p>The contribution of the Transport sector is less given that further initiatives will be required in future deliver the level of abatement modelled by the Commission in the second and third emissions budget periods.</p>

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			<p>Officials have identified the following key opportunities for emissions reductions in the first emissions budget period and removals, as reflected in the emissions reduction plan:</p> <ul style="list-style-type: none"> <li>• Decarbonising the energy supply</li> <li>• Biofuels mandate</li> <li>• Reducing reliance on cars to support people to walk, cycle and use public transport</li> <li>• Establishing a new Agriculture Greenhouse Gas Centre of Excellence</li> <li>• Preventing food waste</li> <li>• Ensuring the New Zealand Emissions Trading Scheme (NZ ETS) continues to incentivise the expected level of emissions reductions.</li> </ul> <p>The table below includes the modelled impact range of emissions reduction plan policies for each main emitting sector and the total required reductions to meet proposed emissions budgets:</p> <table border="1" data-bbox="1223 751 2114 1370"> <thead> <tr> <th data-bbox="1223 751 1641 826">Emissions abatement from policies and measures (AR5 Mt CO2-e)</th> <th data-bbox="1641 751 1794 826">1<sup>st</sup> Budget 2022-2025</th> <th data-bbox="1794 751 1968 826">2<sup>nd</sup> Budget 2026-2030</th> <th data-bbox="1968 751 2114 826">3<sup>rd</sup> Budget 2031-2035</th> </tr> </thead> <tbody> <tr> <td data-bbox="1223 826 1641 868"><b>Transport</b></td> <td data-bbox="1641 826 1794 868"></td> <td data-bbox="1794 826 1968 868"></td> <td data-bbox="1968 826 2114 868"></td> </tr> <tr> <td data-bbox="1223 868 1641 908">    Low impact estimate</td> <td data-bbox="1641 868 1794 908">-1.7</td> <td data-bbox="1794 868 1968 908">-5.9</td> <td data-bbox="1968 868 2114 908">-8.3</td> </tr> <tr> <td data-bbox="1223 908 1641 948">    High impact estimate</td> <td data-bbox="1641 908 1794 948">-1.9</td> <td data-bbox="1794 908 1968 948">-6.8</td> <td data-bbox="1968 908 2114 948">-10.6</td> </tr> <tr> <td data-bbox="1223 948 1641 987"><b>Energy and Industry</b></td> <td data-bbox="1641 948 1794 987"></td> <td data-bbox="1794 948 1968 987"></td> <td data-bbox="1968 948 2114 987"></td> </tr> <tr> <td data-bbox="1223 987 1641 1027">    Low impact estimate</td> <td data-bbox="1641 987 1794 1027">-2.7</td> <td data-bbox="1794 987 1968 1027">-16.1</td> <td data-bbox="1968 987 2114 1027">-19.3</td> </tr> <tr> <td data-bbox="1223 1027 1641 1067">    High impact estimate</td> <td data-bbox="1641 1027 1794 1067">-6.2</td> <td data-bbox="1794 1027 1968 1067">-27.6</td> <td data-bbox="1968 1027 2114 1067">-33.2</td> </tr> <tr> <td data-bbox="1223 1067 1641 1107"><b>Waste</b></td> <td data-bbox="1641 1067 1794 1107"></td> <td data-bbox="1794 1067 1968 1107"></td> <td data-bbox="1968 1067 2114 1107"></td> </tr> <tr> <td data-bbox="1223 1107 1641 1147">    Low impact estimate</td> <td data-bbox="1641 1107 1794 1147">-0.2</td> <td data-bbox="1794 1107 1968 1147">-1.9</td> <td data-bbox="1968 1107 2114 1147">-3.8</td> </tr> <tr> <td data-bbox="1223 1147 1641 1187">    High impact estimate</td> <td data-bbox="1641 1147 1794 1187">-0.4</td> <td data-bbox="1794 1147 1968 1187">-2.7</td> <td data-bbox="1968 1147 2114 1187">-4.5</td> </tr> <tr> <td data-bbox="1223 1187 1641 1227"><b>F-gases</b></td> <td data-bbox="1641 1187 1794 1227"></td> <td data-bbox="1794 1187 1968 1227"></td> <td data-bbox="1968 1187 2114 1227"></td> </tr> <tr> <td data-bbox="1223 1227 1641 1267">    Low impact estimate</td> <td data-bbox="1641 1227 1794 1267">-0.1</td> <td data-bbox="1794 1227 1968 1267">-0.3</td> <td data-bbox="1968 1227 2114 1267">-0.9</td> </tr> <tr> <td data-bbox="1223 1267 1641 1307">    High impact estimate</td> <td data-bbox="1641 1267 1794 1307">-0.5</td> <td data-bbox="1794 1267 1968 1307">-1.0</td> <td data-bbox="1968 1267 2114 1307">-1.7</td> </tr> <tr> <td data-bbox="1223 1307 1641 1347"><b>Agriculture</b></td> <td data-bbox="1641 1307 1794 1347"></td> <td data-bbox="1794 1307 1968 1347"></td> <td data-bbox="1968 1307 2114 1347"></td> </tr> <tr> <td data-bbox="1223 1347 1641 1370">    Low impact estimate</td> <td data-bbox="1641 1347 1794 1370">-0.3</td> <td data-bbox="1794 1347 1968 1370">-3.8</td> <td data-bbox="1968 1347 2114 1370">-19.1</td> </tr> </tbody> </table>				Emissions abatement from policies and measures (AR5 Mt CO2-e)	1 <sup>st</sup> Budget 2022-2025	2 <sup>nd</sup> Budget 2026-2030	3 <sup>rd</sup> Budget 2031-2035	<b>Transport</b>				Low impact estimate	-1.7	-5.9	-8.3	High impact estimate	-1.9	-6.8	-10.6	<b>Energy and Industry</b>				Low impact estimate	-2.7	-16.1	-19.3	High impact estimate	-6.2	-27.6	-33.2	<b>Waste</b>				Low impact estimate	-0.2	-1.9	-3.8	High impact estimate	-0.4	-2.7	-4.5	<b>F-gases</b>				Low impact estimate	-0.1	-0.3	-0.9	High impact estimate	-0.5	-1.0	-1.7	<b>Agriculture</b>				Low impact estimate	-0.3	-3.8	-19.1
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Act section	Statutory obligation(s)	Comment on Commission’s advice	Advice for consideration by the Minister of Climate Change			
			High impact estimate	-2.7	-53.8	-64.1
			<b>Forestry</b>			
			Low impact estimate	-0.3	-2.8	-7.1
			High impact estimate	-0.3	-2.8	-7.1
			<b>Total</b>			
			Low impact estimate	-5.4	-30.9	-58.4
			High impact estimate	-11.9	-94.7	-121.3
			<b>Total required reductions to meet emissions budgets</b>	<b>-11.5</b>	<b>-43.5</b>	<b>-73.7</b>
5ZC(2)a (ii)	the Minister must have particular regard to how the emissions budget and 2050 target may realistically be met, including consideration of the principal risks and uncertainties associated with emissions reductions and removals	The Commission describes how they address the uncertainty inherent in their analysis in Chapter 4 of their advice. There is evidence of their regard to this matter in several other areas of the report, especially in the way they have presented the varying scenarios, performed sensitivity analysis and the way they have tested their modelling. The Commission’s ‘headwinds’ and ‘tailwinds’ scenarios are based on varying risks and uncertainties in their underlying assumptions and evidence for each of the major sectors.	<p>There are a number of risks and uncertainties that can impact the ability to meet proposed emissions budgets.</p> <p>Our preliminary advice provided a discussion of the principal risks and uncertainties associated with emissions reductions and removals. This formed a major part of the analysis provided in the August 2021 Cabinet paper. Due to the range of risks and uncertainties, the sufficiency of the policies and measures in the emissions reduction plan to achieve emissions budgets cannot be fully determined in advance.</p> <p>These risks and uncertainties have informed our analysis to finalise the proposed emissions budgets and to determine the sufficiency of the emissions reduction plan policies to meet emissions budgets. In turn, the sufficiency analysis also provides an indication on the achievability of these budgets.</p> <p>The advice prepared for you in the Cabinet paper <i>Setting emissions budgets for 2022-2025, 2026-2030 and 2031-2035</i> discusses our consideration of the risks and uncertainties around our estimates and projections for emissions reduction and notes the implication this can have for achieving emissions budgets.</p> <p>The quantified abatement of policies and measures in the emissions reduction plan are presented as a range of low to high policy impact for each budget period in the Cabinet paper. This is to present a more realistic range and to reflect elements of uncertainty and risks.</p> <p>It is important to note that the uncertainties around the underlying emissions projections are likely to be greater than the range of low and high policy impact. It is also</p>			

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
			<p>highly unlikely that the high or low scenarios for each individual set of policies will all occur simultaneously.</p> <p>There is very high uncertainty around the policy impact estimates for forestry sector (6.5Mt), relative to the other sectors. This is due to uncertainties around deforestation, which can have high emissions impacts. If this had been included in the policy impact estimate ranges, they would have been too wide to be useful.</p> <p>As noted in the Cabinet paper, there is policy uncertainty as a number of these policies have not yet been agreed by Cabinet. For example, restricting exotics from the permanent NZ ETS forestry category is currently out for consultation and this is likely to have a significant impact across the first three emissions budgets.</p> <p>There is still the uncertainty around the closure of Tiwai Point aluminium smelter. While there is still a chance that it will close in 2024, the likelihood that it will continue to operate has substantially increased since the compilation of baseline emissions projections. If the smelter continued to operate beyond 2024, this is estimated to result in an additional 2.4, 9.3 and 3.0 Mt CO<sub>2</sub>-e across the first three emissions budgets respectively.</p> <p>Further to this, there are uncertainties that can affect emissions estimates that sit outside policy impacts, for example the impact of external economic conditions or events such as the recent rise in oil prices.</p> <p>Within these limitations and caveats, our modelling suggests that that emissions reduction plan policies and measures can achieve the proposed emissions budgets.</p> <p>The first emissions budget of 290 Mt CO<sub>2</sub>-e is near the top end of the policy impact range estimates of the emissions reduction plan policies. Meeting the first emissions budget is achievable, but will be challenging and require some stretch. As noted, there are underlying risks and uncertainties in our projected emissions, however, under the CCRA there is a buffer of 3 Mt that may potentially be borrowed from the next emissions budget to offset a shortfall if there are negative changes.</p> <p>The proposed emissions budgets for the second and third emissions budget periods (305 Mt CO<sub>2</sub>-e and 240 Mt CO<sub>2</sub>-e respectively) appear to be achievable based on the policy impact assessment of the emissions reduction plan policies as the required reductions are close to the lower range of estimated emissions reductions from policy. However,</p>

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			<p>estimates for future emissions budgets periods are inherently less certain because of the longer timeframes involved.</p> <p>As previously noted, there is a high level of uncertainty relative to the emissions reductions aiming to be achieved to meet emissions budgets. Achieving emissions budgets may become significantly more or less difficult to achieve than is currently understood. All these estimates of current and future projections are subject to frequent revisions over time.</p> <p>To maximise the likelihood of achieving emissions budgets and manage these elements of uncertainty and risk, as previously noted by Cabinet, and described further in the emissions reduction plan, strong monitoring and effective corrective action will be needed on an ongoing basis [CAB-21-MIN-0320.01 refers].</p>
5ZC(2)b (i)	<p>The Minister must have regard to:</p> <p>the emission and removal of greenhouse gases projected for the emissions budget period</p>	<p>The Commission's 'demonstration path' includes estimates of the additional emissions reductions or increased removals that can be achieved over and above a baseline scenario that uses current projections for the emissions budget period. This methodology is outlined in the description of their 'current policy reference scenario'<sup>1</sup>.</p>	<p>Our preliminary advice last August provided an analysis of the Commission's projections compared to a government emissions baseline and noted that projections are revised frequently and can be volatile.</p> <p>The next update of the greenhouse gas (GHG) projections will occur after publication of the emissions reduction plan in May 2022. The most recent projections were produced in June 2021.</p> <p>There are two differences between the latest projections and what will be used in the emission reduction plan. The latest projections assumed that the Marsden Point oil refinery would remain open indefinitely and that the Tiwai Point aluminium smelter will close at the end of 2024.</p> <p>Since our initial advice in August 2021, officials have adjusted emissions projections used in the emissions reduction plan to reflect recent developments for these two large industrial emitters. This is detailed in the Cabinet paper <i>Setting emissions budgets for 2022-2025, 2026-2030 and 2031-2035</i>.</p> <p>The projections used in the emissions reduction plan (and therefore as relevant to the proposed budget) have been adjusted to reflect the fact that the refinery has converted</p>

<sup>1</sup> Ināia nei tonu, p. 5

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
			<p>to an import only facility in mid-2022, while two scenarios for the smelter are presented. Scenarios presented for the smelter are, firstly that it will close in 2024 and secondly that it will remain open indefinitely. These figures were presented in the Cabinet paper.</p> <p>The quantified abatement of policies and measures in the emissions reduction plan is measured against the Government's baseline emissions projections. This determines the sufficiency of the plan to meet the proposed emissions budgets and consequently provides an indication on the achievability of meeting these budgets.</p> <p>The proposed emissions budgets amend the agreed in-principle emissions budgets from August 2021 by removing 2 Mt CO<sub>2</sub>-e for each emissions budget period.</p> <p>In August 2021, Cabinet agreed in principle to a set of proposed emissions budgets for the purpose of including them in the October 2021 public consultation on the emissions reduction plan. The agreed in-principle emissions budgets broadly accepted the Commission's recommended budgets, with modifications to take account of new information from the latest Afforestation and Deforestation Intentions Survey that was published in July 2021. This information was not available to the Commission when it delivered its final advice in May 2021.</p> <p>While the revised projection figures for forestry were correct, the way this information was interpreted and subsequently reported to Cabinet was not correct. At the time, 2 Mt CO<sub>2</sub>-e of emissions were incorrectly attributed to the initial emissions generated by afforestation and related land use. In fact, the 2 Mt CO<sub>2</sub>-e of emissions were primarily due to higher deforestation rates than previously estimated.</p> <p>The proposed emissions budgets do not make an allowance for the increased deforestation, by removing 2 Mt CO<sub>2</sub>-e from each budget period of the agreed in-principle emissions budgets.</p>
5ZC(2)b (ii)	The Minister must have regard to:  a broad range of domestic and	Chapter 9 primarily outlines the science related to meeting the 1.5 degree goal under the Paris agreement. The Commission emphasises throughout that their advice is based on IPCC science and advice. The Commission have also provided further documentation	As the first two emissions budgets cover the period from 2022 to 2030, the IPCC advice on the need for action to 2030 is important.  The IPCC released the first part of its sixth Assessment Report (AR6) on the physical science of climate change in August 2021. This report provides additional evidence for

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
	international scientific advice:	<p>of the scientific advice used as evidence in Supporting Evidence, Part 1 to Part 5.<sup>2</sup></p> <p>The Commission undertook a comprehensive and integrated modelling exercise and have significantly added to and helped to consolidate the evidence-base. This analysis has informed emissions budgets and emissions reduction policy in New Zealand.</p> <p>The Commission considered Intergovernmental Panel on Climate Change (IPCC) advice when preparing its advice on emissions budgets. IPCC advice is that reducing GHG emissions by 2030 will have a higher chance of limiting peak warming to 1.5°C. The Commission concluded that the percentage changes in GHGs under its demonstration pathway were within the IPCC global ranges for 2010 to 2030 that are compatible with the 1.5°C global temperature goal (although the Commission uses a gross-net approach, so its pathway is not directly comparable).</p>	<p>limiting warming to 1.5°C and the co-benefits of limiting temperature increases, but that this goal is only possible through deep, rapid and sustained emission reductions.</p> <p>Our advice summarising this report, sent to you in August 2021, noted that the report is highly relevant to New Zealand's approach to addressing climate change and its effects [BRF-464 <i>IPCC's Sixth Assessment Report: Working Group I</i> refers]. That advice also notes that the report reconfirms and re-emphasizes the need for urgent action to reduce global emissions, but does not fundamentally change the scale of global action needed to achieve the goal of limiting warming to 1.5°C. The talking points provided at the time noted that 'we can still limit warming to 1.5°C if we reduce emissions immediately and rapidly' and 'to do this, the world needs to achieve net zero CO<sub>2</sub> emissions around 2050, combined with deep reductions in other greenhouse gases. This is consistent with the approach we are taking in our emissions reduction targets.'</p> <p>The 2021 report also emphasises that to limit warming to specific levels such as 1.5°C, efforts to reach net-zero carbon dioxide emissions must be accompanied by strong reductions to methane and other greenhouse gas emissions.</p> <p>At the 2018 Conference of Parties serving as the meeting of the Parties to the Paris Agreement (CMA), it was agreed to apply the 100-year time-horizon global warming potential (GWP) values from the IPCC's fifth assessment report (AR5) for both reporting and accounting under the Paris Agreement. The GWP values from a subsequent IPCC assessment report will not be used by Parties until a similar decision is made by the CMA. The Commission aligned with AR5 and for consistency, our emissions budgets and all of our figures and analysis uses AR5.</p> <p>On Tuesday 5 April 2022 the IPCC Working Group III: Mitigation of Climate Change Summary for Policymakers was released. The following day Ministry for the Environment provided you with an overview of the report, noting it contains information that is relevant to both the emissions reduction plan, emission budgets and New Zealand's first Nationally Determined Contribution [BRF-1327 refers].</p>

<sup>2</sup> 2021 Supporting evidence » Climate Change Commission (climatecommission.govt.nz)

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
			<p>The report builds on previous IPCC reports and some key findings are:</p> <ul style="list-style-type: none"> <li>• net GHG emissions have increased globally across all sectors since 2010</li> <li>• while regional contributions to net GHG emissions vary widely, at least 18 countries have sustained GHG emissions reductions for at least ten years, illustrating that sustained reductions are possible</li> <li>• limiting warming to 1.5 degrees requires immediate and sustained emissions reductions</li> <li>• doing less to mitigate in this decade implies that the rate of emissions reductions required in the following two decades to 2050 would need to greatly accelerate (more than double).</li> <li>• there are many mitigation options that are available now in all sectors that offer substantial potential to reduce emissions by 2030</li> <li>• it is important to be aware of the relationship between mitigation and adaptation responses. Coordinated cross-sectoral policies can help maximise synergies and avoid or reduce trade-offs between mitigation and adaptation.</li> </ul> <p>The report provides further certainty that limiting warming to 1.5 degrees requires immediate and sustained emissions reductions. It also provides further evidence that setting emissions budgets that balance achievability and ambition as per the Commission's proposals is crucial to reach our 2050 targets.</p> <p>The proposed emissions budgets set the sustained cuts to our emissions required by scientific advice for each budget period. These essential cuts require us to urgently make significant emissions reductions in the first emissions budget, so that we do not delay action. This sets New Zealand up for further reductions in emissions budget two and three as per the Commission's proposals and puts us on a pathway to reach our 2050 targets.</p>
5ZC(2)b (iii)	The Minister must have regard to:  existing technology and anticipated	The Commission has clearly indicated that their recommendations are based on technology that exists	As noted in our preliminary advice in August 2021, the Commission clearly demonstrated that their advice on policy direction to meet emissions budgets is based on technology that is currently available.

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	<p>technological developments, including the costs and benefits of early adoption of these in New Zealand:</p>	<p>now.<sup>3</sup> Their advice also builds in varying assumptions on the rate of technological change to their differing scenarios (headwinds/ tailwinds/ demonstration path). Chapter 7 goes into detail about what technology changes exist and the impact of early/late adoption for each sector in their demonstration path.</p> <p>The Commission's analysis and GHG projections assume only currently proven technologies are available. However, they do assume that some proven technologies will be enhanced over time based on recent trends, an example of this is electric (EV) batteries which are anticipated to continue to reduce in cost while increasing capacity over time.</p> <p>The Commission's GHG projections and Current Policy Reference assume the take-up of low emissions technology to continue along recent trends. The Commission's Demonstration path assumes that take-up of low emissions technology can be accelerated in certain areas when actions are taken, and initiatives put in place to encourage this.</p>	<p>Agencies have similarly considered which low emissions technologies could be accelerated and how this could be done effectively for inclusion in the emissions reduction plan, in order to achieve the emissions budgets. Examples of policies to achieve this include the clean car standard and the clean car discount, intended to accelerate EV uptake. There are further examples of this in the emissions reduction plan being considered by the Minister.</p> <p>The emissions reduction plan also includes consideration of anticipated technological development in various sectors, for example potential initiatives in agriculture include methane and nitrous oxide inhibitors and a methane vaccine for ruminants.</p> <p>The baseline projections used in the Cabinet paper <i>Setting emissions budgets for 2022-2025, 2026-2030 and 2031-2035</i>, are based on a number of critical assumptions. This includes the rate of technology advancement and uptake.</p> <p>As outlined in the Cabinet paper, there is a high level of uncertainty relative to the emissions reductions aiming to be achieved to meet emissions budgets. As a result, achieving emissions budgets may become significantly more or less difficult to achieve than is currently understood. All these estimates of current and future projections are subject to frequent revisions over time.</p>
5ZC(2)b (iv)	<p>The Minister must have regard to:</p> <p>the need for emissions budgets that are ambitious but likely to be technically and economically achievable:</p>	<p>The Commission addresses how It defines the terms 'ambitious' and 'achievable' on p. 60 of the report. Their advice demonstrates that there are multiple ways of meeting its recommended emissions budgets. In addition to the core demonstration pathway, the Commission tested alternative pathways with different technological and behaviour change assumptions. These would each</p>	<p>As noted in our preliminary advice last August, the Commission clearly demonstrated that their advice on policy direction to meet emissions budgets is based on technology that is currently available.</p> <p>Agencies have similarly considered which low emissions technologies could be accelerated and how this could be done effectively for inclusion in the emissions reduction plan, in order to achieve the emissions budgets. The baseline projections used</p>

<sup>3</sup> Ināia nei tonu, p.10

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		<p>enable New Zealand to achieve the recommended emissions budgets.</p> <p>The Commission undertook extensive analysis and consultation, to recommend a set of emissions budgets that it considered struck the right balance between ambition and achievability [CAB-21-MIN-0547.02].</p> <p>The Commission's analysis and GHG projections assume only currently proven technologies are available. However, they do assume that some proven technologies will be enhanced over time based on recent trends, for example EV batteries.</p> <p>The Commission's GHG projections and Current Policy Reference assume the take-up of low emissions technology to continue along recent trends. The Commission's Demonstration path assumes that take-up of low emissions technology can be accelerated in certain areas when actions are taken, and initiatives put in place to encourage this.</p>	<p>in the Cabinet paper are based on a number of critical assumptions, including the rate of technology advancement and uptake.</p> <p>The proposed emissions budgets strike the right the right balance between ambitious and technically and economically achievable. They step down the total quantity of emissions for each budget period, which provides for a sufficient stretch to drive transition, while being realistically achievable (ie, technologically possible, economically manageable and socially acceptable). These budgets have been designed to take account of a number of critical assumptions, including the rate of technology advancement and uptake.</p> <p>Our modelling suggests that that emissions reduction plan policies and measures have the potential to achieve the emissions budgets based on the estimates of quantified policies and measures.</p> <p>For emissions budget one, 290 Mt CO<sub>2</sub>-e is near the top end of the low to high policy impact range estimates of the emissions reduction plan policies. This is the same as the Commission's recommended budget for period one. Meeting the first emissions budget is achievable, but will be challenging and require some stretch. This will require effective implementation of the emissions reduction plan and require local government, New Zealand businesses, households and communities to act to reduce emissions.</p> <p>If we combine an adaptive management approach and ongoing monitoring of performance against sector sub-targets and the budget (as proposed in the emissions reduction plan) our ability to meet the proposed budget is increased.</p> <p>The proposed emissions budgets two (305 Mt CO<sub>2</sub>-e) and three (240 Mt CO<sub>2</sub>-e) are more ambitious in comparison to the Commission's emissions budgets by -7 Mt CO<sub>2</sub>-e and -13Mt CO<sub>2</sub>-e respectively. Meeting the proposed emissions budgets appears to be achievable based on the policy impact assessment of the emissions reduction plan policies.</p> <p>As previously noted and outlined in the Cabinet paper, there is a high level of uncertainty relative to the emissions reductions aiming to be achieved to meet emissions budgets. As a result, achieving emissions budgets may become significantly more or less difficult to achieve than is currently understood. All these estimates of current and future projections are subject to frequent revisions over time.</p>

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5ZC(2)b (v)	The Minister must have regard to:  the results of public consultation on an emissions budget:	<p>The Commission summarised the results of their public consultation in Chapter 2 and have usefully grouped it into key themes. They have also provided further relevant detail in individual chapters.</p> <p>The Commission advised that they have taken the results of public consultation into account in a number of ways. For instance they reassessed and changed their draft advice in response to themes and new evidence received. An example of this is the provision of additional sensitivity analysis to further understand the modelling of costs and subsequent impact on GDP because cost was a focus of many submissions.</p> <p>The Commission also changed its draft recommendations on agriculture after receiving new evidence from the sector on efficiency improvements in sheep and beef farms.</p>	<p>The Commission undertook extensive analysis and consultation to recommend a set of emissions budgets that it considered struck the right balance between ambition and achievability. As noted in our preliminary advice last August, our assessment of the Commission's consultation on emissions budgets was adequate.</p> <p>Based on this assessment, the Government focused its consultation on proposed policies to include in the first emissions reduction plan, which sets the proposed pathway to meeting the agreed in-principle emissions budgets from August 2021.</p> <p>The key messages from the emissions reduction plan consultation relevant to the budgets are:</p> <ul style="list-style-type: none"> <li>• Most submitters wanted the Government to take more urgent and more ambitious climate action in the emissions reduction plan.</li> <li>• There were high levels of support for the discussion document's proposals, although many wanted targets to go further, sought more detail and wanted more support to implement the plan. There was strong support for an equitable lens across the entire emissions reduction plan and for specific sectors and policies.</li> <li>• Individual submissions generally focused on advocating for transformational, cross-sector changes that would have wider benefits than reducing emissions, for example, promoting wellbeing through improved urban design and enabling active transport. The broad, economy-wide implications of emissions reduction were also reflected by the many suggestions for more coordinated, cross-sector approaches for Government.</li> <li>• The importance of a genuine partnership approach between the Crown and iwi. Māori submitters clarified that a partnership approach was more than consultation and involved supporting Māori to influence decision-making and scale up Māori-led initiatives. Many submitters, including both Māori and other submitters,</li> </ul>

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			<p>emphasised the need for the Government to consider and support a kaupapa Māori approach, which is more holistic and integrate mātauranga Māori concepts.</p> <ul style="list-style-type: none"> <li>Many submitters acknowledged that rural communities had less scope for reducing their emissions than urban centres. While reducing biogenic methane by reducing stock numbers was strongly supported, this was balanced by calls to support the dairy industry to transition to a low-emissions economy.</li> </ul> <p>From both consultations (the Commission’s and the Government’s), submitters generally wanted more climate action and more ambition from the Government. This was balanced by strong calls for an equitable lens to be taken, to ensure the impact of policies and measures did not fall disproportionately on certain groups or sectors.</p> <p>The proposed emissions budgets reflect these key messages from these two consultations, including reflecting this level of ambition, while still being set at a level that enables mitigation of the impact of the transition on people and communities.</p>
5ZC(2)b (vi)	<p>The Minister must have regard to:</p> <p>the likely impact of actions taken to achieve an emissions budget and the 2050 target, including on the ability to adapt to climate change:</p>	<p>The Commission’s advice includes consideration of likely impacts and co-benefits of actions that vary across regions, parts of society and the economy. The Commission notes in chapter 8 that how each region is impacted depends on the structure of its economy, its emissions profile, and its ability to adapt and plan for the transition to a low-emissions economy.</p> <p>In chapter 8, the Commission also notes that their recommended budgets and the transition to a low-emissions economy will affect all small businesses in some way. In most cases, these impacts will be manageable. However, the ability for small businesses to respond, adapt and innovate will depend on information and support, skills and capability, access to capital and how well the transition is signalled and planned.</p>	<p>The proposed emissions budgets require sustained cuts in our emissions for each budget period. This defines our transition pathway to eventually bring us closer to our 2050 targets. However, at the same time, we need to improve our climate resilience. There is a need to adapt to the impacts of climate change that are already locked in, as well as improve our climate resilience to further impacts. We need to ensure that transition to low emissions does not go against our adaptation efforts.</p> <p>The likely impact of actions to achieve emissions budgets and the 2050 target, including on the ability to adapt to climate change is described in the emissions reduction plan.</p> <p>The emissions reduction plan includes a multi-sector strategy to both meet emissions budgets and to improve the ability of those sectors to adapt to the effects of climate change. The strategy includes:</p> <ul style="list-style-type: none"> <li>Sector sub- targets agreed to by Cabinet [CAB-21-MIN-0547.02 refers]</li> <li>Accountability and monitoring agreed to by Cabinet [CAB-22-MIN-0055.01 refers].</li> </ul> <p>The Commission and central government agencies will be responsible for</p>

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			<p>monitoring and regularly reporting on the sector targets, emission budgets and the success and implementation of the Plan.</p> <p>In the emissions reduction plan, each sector's overall contribution to emissions budgets has identified areas for improvement in resilience. For example, the Energy and Industry chapter's identifies the need to develop and energy strategy that considers how to ensure the electricity system is ready to meet future needs. This will link to adaptation actions, particularly for ensuring that the electricity system is secure and reliable.</p> <p>The emissions reduction plan outlines the impact of actions for key sectors such as transport, energy, waste. The plan describes who is impacted and outlines examples of measures put in place to support key groups to transition. For instance, for the Energy sector, the energy and industry transition will have impacts for many parts of the economy, with flow-on effects for worker, communities, regions, Māori/iwi and others.</p> <p>The emissions reduction plan also includes policies and measures designed to mitigate the impacts of those actions. The impacts of these actions have been considered when determining the proposed emissions budgets.</p> <p>The proposed emissions budgets require us to urgently make significant emissions reductions now, so that we do not delay action. Taking action to reduce our emissions from the first budget period onward, can potentially reduce the costs of adaptation for future generations and improve our climate resilience.</p>
5ZC(2)b (vii)	<p>The Minister must have regard to:</p> <p>the distribution of those impacts across the regions and communities of New Zealand, and from generation to generation:</p>	<p>The Commission's advice includes consideration of likely impacts and co-benefits of actions that vary across regions, parts of society and the economy. The Commission summarises these considerations by demonstrating their view of how budgets can be fair, equitable and inclusive. This includes economic modelling of impacts on GDP and the cost of living, as well as modelling the impacts of the transition on employment.</p>	<p>The proposed emissions budgets step down the total quantity of emissions allowed for each budget period. This defines our transition pathway (including the pace of our transition) to ensure New Zealand continues on a downward trajectory, eventually bring us closer to our 2050 targets.</p> <p>The proposed emissions budgets require us to urgently make significant emissions reductions now, so that we do not delay action. Therefore, transition costs are distributed across the three budget periods, rather than pushing all the burden onto future generations to address the impacts of climate change and front the transition costs. In addition, by making significant emissions reductions now, we can potentially reduce the transition costs for future emissions budgets.</p>



Act section	Statutory obligation(s)	Comment on Commission’s advice	Advice for consideration by the Minister of Climate Change
			<p>To support this prioritisation, and to help meet wider objectives for land use, rural communities, economies etc, the Government is considering a package of measures to manage afforestation. The Government:</p> <ul style="list-style-type: none"> <li>• Is currently seeking feedback on proposals to manage the types of forests allowed in the permanent post-1989 forest category in NZ ETS.</li> <li>• s 9(2)(f)(iv) [REDACTED]</li> </ul> <p>Many of the policies and measures described above are designed to mitigate the distributional impact that are a potential consequence of setting emissions budgets broadly in-line with the Commission’s advice.</p>
5ZC(2)b (viii)	<p>The Minister must have regard to:</p> <p>economic circumstances and the likely impact of the Minister’s decision on taxation, public spending, and public borrowing:</p>	<p>The Commission does not provide advice on how much specific policies to meet the first three emissions budgets are likely to cost. This will be considered as officials develop advice on the policies and measures included in the first emissions reduction plan to meet emissions budgets.</p> <p>As noted above, the Commission considered the pace of transition to deliver emissions reductions in its recommendations on the emissions budgets.</p> <p>The Commission’s analysis also indicated that the actions to meet our emissions budgets and targets would reduce the level of GDP by 1.2% in 2050 compared to no further action. The Commission’s identified economic opportunities from a successful transition that would offset some of this impact on GDP. The analysis also suggested that delaying key abatement actions could lead to a bigger drop to GDP in 2050. Our view is that the Commission’s analysis is adequate and this has been</p>	<p>As previously advised, final decisions to set emissions budgets and the emissions reduction plan will have significant financial implications, including wider fiscal and economic implications.</p> <p>The proposed emissions budgets strike the right balance between ambitious and economically achievable. We have stepped down the total quantity of emissions allowed for each budget period, which defines the transition pathway, including the pace of our transition. Setting these proposed emission budgets, ensures New Zealand continues on a downward trajectory to eventually bring us closer to our 2050 targets.</p> <p>The proposed emissions budgets require us to urgently make significant emissions reductions now, so that we are not delaying action. Therefore, transition costs are distributed across the three budgets periods, rather than pushing all the burden onto future generations to address the impacts of climate change and manage the transition costs. By making emissions reductions now, we can also potentially reduce the transition costs for future emissions budgets.</p> <p>The economic and fiscal implications of meeting the budgets will critically depend on the detail of how we meet these budgets – this will be a function of the first emissions reduction plan and subsequent plans, market trends, global events and a number of other things both within and outside of the Government’s control.</p>

Act section	Statutory obligation(s)	Comment on Commission's advice	Advice for consideration by the Minister of Climate Change
		taken into consideration when setting the emissions budgets.	<p>Meeting emissions budgets will require significant, sustained investment from the Government and throughout the private sector. An important focus of the emissions reduction plan is to support the flow of private investment towards climate-positive outcomes and the growth of the green finance market. The emissions reduction plan also addresses distributional economic impacts and seeks to ensure an equitable transition.</p> <p>The fiscal implications of the emissions budgets remain uncertain and will continue to depend on the Government's policy choices over time. The Climate Emergency Response Fund (CERF) has been established with \$4.5bn of cash proceeds from the NZ ETS, based on the Treasury's forecasts of proceeds over the period from 2022/23 to 2025/26. This was articulated as a "down-payment" for our climate spending, beginning with a focus on mitigation through the first emissions reduction plan. The CERF is expected to be reviewed and the available funding increased as necessary to invest in high-value initiatives that will help achieve the emissions budgets.</p> <p>A more detailed assessment of the costs, benefits and fiscal implications of setting emissions budgets is contained in the Regulatory Impact Statement – Transition pathway for the Emissions Reduction Plan. An interim version of this was submitted to Cabinet alongside the December 2021 Cabinet paper <i>Emissions reduction plan: meeting New Zealand's emissions budgets</i>. The final version has been submitted alongside the April 2022 Cabinet paper <i>Emissions reduction plan: completion and launch of the first Plan</i>.</p>
5ZC(2)b (ix)	The Minister must have regard to:  the implications, or potential implications, of land-use change for communities:	As noted previously, the Commission found that unconstrained forestry would limit gross emissions reductions to the 2050 targets and undermines decarbonisation of New Zealand's economy.	<p>The proposed budgets will have potential consequences for land-use change, however due to the planned mitigations set out below we are of the view that these consequences can be managed.</p> <p>The Equitable Transition chapter in the emissions reduction plan sets out the Government's overall objectives for an equitable transition and articulates an overall approach to managing impacts and seizing opportunities. The chapter makes reference to specific initiatives to manage transition impacts that are being developed as part of sector policy packages.</p>

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			<p>The emissions reduction plan includes actions to develop an Equitable Transition Strategy that recognises and mitigates the impacts of the transition on employees, employers, regions, iwi and Māori and affected communities.</p> <p>The increasing NZU price is driving higher rates of afforestation, particularly fast-growing exotic forests. This is raising concern among some industry groups and community organisations on the risk of displacing pastoral farming, production forests and native forests, thus having potential implications for communities.</p> <p>As agreed by Cabinet in August 2021, priority focus is on gross emissions reductions, while maintaining support for net emissions reductions [CAB-21-MIN-0547.02].</p> <p>To support the prioritisation of gross emission reductions, and to help meet wider objectives for land use, and rural communities and economies etc, the Government is considering a package of measures to manage afforestation. The Government:</p> <ul style="list-style-type: none"> <li>recently released a discussion document seeking feedback on proposals to manage the types of forests allowed in the permanent post-1989 forest category in NZ ETS.</li> <li>s 9(2)(f)(iv) [REDACTED]</li> </ul> <p>s 9(2)(f)(iv) [REDACTED]</p> <p>A more detailed assessment of implications of setting emissions budgets on land-use change is contained in the Regulatory Impact Statement – Transition pathway for the Emissions Reduction Plan. An interim version of this was submitted to Cabinet alongside the December 2021 Cabinet paper <i>Emissions reduction plan: meeting New Zealand's emissions budgets</i>. The final version has been submitted alongside the April 2022 Cabinet paper <i>Emissions reduction plan: completion and launch of the first Plan</i>.</p>

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5ZC(2)b (x)	<p>The Minister must have regard to:</p> <p>responses to climate change taken or planned by parties to the Paris Agreement or to the Convention:</p>	<p>The Commission's investigation into action taken, or planned, by other parties is summarised in ch 9.2 p.189.</p>	<p>The proposed budget decisions consider the need for action to contribute to our NDC in line with responses taken and planned by other parties to the Paris Agreement and the Convention.</p> <p>Analyses show that the collective efforts of Parties are not currently on track to meet the Paris Agreement's target of limiting global warming to well below 2 °C and pursuing efforts to limit it to 1.5 °C.</p> <p>In light of this, more than 120 parties announced new or updated Nationally Determined Contributions (NDC) for emissions reductions by 2030 at or before the COP26 Climate Change Conference in Glasgow, in late 2021. Most of the Parties that submitted new or updated NDCs have strengthened their commitment to reducing or limiting GHG emissions by 2025 and/or 2030, demonstrating increased ambition to contribute to the global effort to limit the global average temperature increase to 1.5°C above pre-industrial levels, and a closing of the ambition gap.</p> <p>New Zealand's response included updating its first NDC to a headline target of a 50 per cent reduction of net emissions below our gross 2005 level by 2030 (for the period 2021-2030). This replaces New Zealand's original NDC target to reduce net greenhouse gas emissions by 30 percent below gross 2005 levels by 2030; the Commission stated that the previous NDC was incompatible with contributing to global efforts to limit global warming to 1.5°C above pre-industrial levels. The updated NDC is now more consistent with the global efforts to limit warming under the Paris Agreement. The Paris Agreement includes processes for reviewing NDCs, so this is likely to be revisited over time.</p> <p>New Zealand's NDC is our highest possible ambition and will be met by prioritising domestic action and complementing this with offshore mitigation. Domestic emissions reductions and removals are a subset of how New Zealand will meet its NDC. Prioritising domestic action has meant that the proposed emissions budgets need to be compatible with the NDC and the global effort.</p> <p>The proposed emissions budgets determine the course for stepping down the necessary level of greenhouse gas emissions permitted and required for each emissions budget period. The proposed cuts of emissions for each emission budget period define the transition pathway out to 2035 and sets us up to continue with our trajectory to step</p>

Act section	Statutory obligation(s)	Comment on Commission’s advice	Advice for consideration by the Minister of Climate Change
			<p>down our emissions after 2035. Our modelling suggests that if we continue with this course, noting emissions budgets have not been set after 2035, can put New Zealand in a better position to contribute to the global efforts to limit temperature rise to 1.5°C .</p> <p>More than 70 countries have set targets or committed to do so, for reaching net-zero emissions, including the biggest polluters – China, the United States (US) and the European Union (EU).<sup>4</sup> The largest emitter, China has committed to reach net zero by 2060, while the US has outlined its commitment to achieving net zero by 2050. New Zealand, and a small number of countries and the EU, have a legislative framework for our net zero targets and setting binding emissions budgets.</p> <p>New Zealand’s contribution to the world’s gross emissions is relatively small globally, but high per capita – approximately 0.17 percent of the world’s emissions.</p>
5ZC(2)b (xi)	<p>The Minister must have regard to:</p> <p>New Zealand’s relevant obligations under international agreements.</p>	<p>The introduction of the new Chapter 9 in the Commission’s report on ‘contributing to limiting warming to 1.5 degrees’ lays out the Commission’s view on how their advice meets the obligations under the Climate Change Response Act 2002 that in turn references New Zealand’s international obligations under the Paris Agreement.</p>	<p>The most relevant international agreement which has been considered when setting the emissions budgets, is the Paris Agreement. Under the Paris Agreement, New Zealand has updated its first NDC, demonstrating increased ambition to contribute to the global effort to limit the global average temperature increase to 1.5°C above pre-industrial levels, and a closing of the ambition gap. The Commission stated that the previous NDC was incompatible with contributing to global efforts to limit global warming to 1.5°C above pre-industrial levels. The updated NDC is now more consistent with the global efforts to limit warming under the Paris Agreement. The Paris Agreement includes processes for reviewing NDCs, so this is likely to be revisited over time.</p> <p>To achieve our updated NDC and continue to contribute to the global efforts to limit temperature rise to 1.5°C, we will prioritise domestic reductions across all sectors, and complement this with offshore mitigation. The proposed emissions budgets determine the course for stepping down the necessary level of greenhouse gas emissions permitted and required for each emissions budget period. The proposed cuts of emissions for each emission budget period strike the right balance between being ambitious and achievable and have also been set with the view to eventually bring us closer to our 2050 target.</p>

<sup>4</sup> Climate Action, United Nations. Available at: <https://www.un.org/en/climatechange/net-zero-coalition>

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			<p>Our first three emission budgets clearly define the transition pathway out to 2035 and sets us up to continue with our trajectory to step down our emissions after 2035. Our modelling suggests, if we continue with this course, noting emissions budgets have not been set after 2035, this will put New Zealand in a better position to contribute to the global efforts to limit temperature rise to 1.5°C.</p> <p>Many of the relevant obligations identified under international agreements have been reflected in the emissions reduction plan. The proposed emissions budgets are within the range of high impact estimates of the emissions reduction plan policies and therefore takes into account the obligations under relevant international agreements.</p>

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## Appendix 4– Climate Change Commission’s advice regarding its recommended emissions budgets and the IPCC global pathways

1. The purpose of this appendix is to summarise the differences in view between the Climate Change Commission (**Commission**) and Lawyers for Climate Action NZ Inc (**LCANZI**), regarding the Commission’s comparison of its recommended emissions budgets as against the IPCC global pathways. These differences in view were the subject of argument and expert affidavit evidence in the recent LCANZI judicial review. The parties are awaiting the Court’s judgment in that proceeding.
2. One of LCANZI’s arguments in the proceeding was that the Commission had misunderstood the statutory purpose in preparing the recommended emissions budgets, resulting in the Commission paying insufficient attention to the need for the emissions budgets to be consistent with the 1.5C global temperature goal (and therefore failing to grapple with the extent of reductions in net emissions required before 2030). The Commission explained its approach in a number of ways, including with reference to Chapter 9 of its advice “Contributing to Limiting Warming to 1.5C”. LCANZI responded that Chapter 9 was an afterthought (added after the consultation phase), and also by criticising the “cross-check” conducted by the Commission in Chapter 9.
3. In Chapter 9, the Commission compared the reductions in emissions between 2010 and 2030, by gas, in the IPCC global pathways to 1.5C and in the Commission’s demonstration path. A table summarising the comparison is on page 192 of the Commission’s advice and is reproduced below:

*Table 9.1: Reductions in emissions between 2010 and 2030, by gas, in IPCC pathways and in our demonstration path. The reductions for net carbon dioxide are calculated using a gross-net approach. See Chapter 3: How to measure progress of the 2021 Supporting Evidence for more detail on this approach and the basis for its use. We have used the ‘interquartile range’ of the IPCC’s pathways. The interquartile range represents the middle 50% of modelled reductions. This gives a more conservative, but also more likely, range for the emissions reductions that are needed.*

	Percentage change between 2010 and 2030	
	IPCC	Demonstration path
Net carbon dioxide emissions	-40 to -58 %	-55 %
Agricultural methane emissions	-11 to -30 %	-8 %
Total biogenic methane	-	-12 %
Agricultural nitrous oxide emissions	+3 to -21 %	-3 %

Source: IPCC – Special Report on 1.5°C, Summary for Policymakers, Table SPM.3b. Integrated Assessment Modelling Consortium data, hosted by IIASA.

4. The table shows that the demonstration path reductions are within the IPCC’s interquartile ranges.<sup>1</sup> However, Chapter 9 includes a number of caveats around the comparison, noting that: the IPCC pathways provide useful insights but set out global averages not prescriptive pathways for individual nations; care needs to be taken when applying the pathways to Aotearoa for a number of reasons (e.g. that globally coal power generation accounts for a much larger share of emissions and it is here that the sharpest early reductions in the IPCC pathways occur – as most electricity generation in Aotearoa is already renewable this large reduction opportunity does not exist for Aotearoa); because the pathways are not directly comparable the Commission drew out key features from the pathways and applied them in the Aotearoa context; and, as per the text in the graphic above, the reductions for net carbon dioxide are calculated using a gross-net approach, i.e. the percentage reduction stated for the demonstration path refers to net CO<sub>2</sub> emissions in 2030 relative to gross CO<sub>2</sub> emissions in 2010 (see Chapter 3 of the supporting evidence for the Commission’s advice for more detail on this approach and the basis for its use).

<sup>1</sup> On the basis that total biogenic methane is taken into account rather than solely agricultural methane.

5. LCANZI argued in the proceeding that the table was misleading as it purported to show that the reductions in the Commission's demonstration path fall within the ranges of the IPCC pathways, but that actually when the relative reductions under the Commission's demonstration pathway for carbon dioxide between 2010 and 2030 are expressed in net:net terms, net carbon dioxide emissions will not reduce by 55% but will actually increase by 310%.
6. The difference in the Commission's calculation and LCANZI's calculation is a result of whether and how forests are taken into account in expressing the rate of reduction.

**Should gross emissions or net emissions be used as the starting point in the base year?**

7. First, if emission reductions are stated in percentage terms, there is the question of which starting point a reduction is measured from (whether it is gross emissions or net emissions).
8. LCANZI argued that the Commission, in conducting the comparison in Chapter 9, made an error in applying the IPCC percentage reduction to New Zealand's 2010 gross CO<sub>2</sub> emissions, instead of 2010 net CO<sub>2</sub> emissions. It said this was an error of mathematical logic because the emission reductions in IPCC pathways were calculated on a net:net basis.
9. Under the Commission's "gross-net" approach, the base year from which the reduction is measured does not include emissions and removals from forestry and other land uses (i.e. the land use, land use change and forestry sector (**LULUCF**) is excluded). This means that there is a higher starting point for the reduction measurement under a gross-net approach than a net-net approach, given that the LULUCF sector already contributed to significant removals in 2010.
  - a. LCANZI says this makes New Zealand's historical emissions look much worse than they actually were (because forestry removals are not included in the base year). LCANZI says this gives a misleading impression of progress in the period to 2030, because the apparent rate of reduction is greater if the starting point is higher.
  - b. LCANZI argues that the starting point should include emissions and removals from the LULUCF sector. Because there were a lot of removals from forestry in 2010 this means LCANZI's starting point is much lower under its net-net approach. This means projected progress in the period to 2030 under the Demonstration Path does not look so impressive; rather net emissions (based on the national GHG inventory) are increasing relative to LCANZI's lower starting point. LCANZI says its approach is a better representation of what the atmosphere "sees" in any given year.
10. Using a gross starting point in the base year, as the Commission has done for its comparison, is consistent with how emissions reduction targets were set for all Parties under the Kyoto Protocol, following UNFCCC requirements and IPCC methods and good practice guidance. This is how New Zealand has previously calculated its emissions reduction targets (both international and domestic). The "gross-net" approach embeds an important value judgement about how to compare mitigation efforts between countries that were planting additional trees in the base year and those that were deforesting. If countries were to measure their effort based on net-net targets, countries with LULUCF removals in the base year would have to continue planting trees just for their net emissions to remain constant, whereas countries with deforestation in the base year could continue deforesting and their emissions would also remain constant. The net-net relative change in emissions would be the same, even though the respective 'effort' of countries to mitigate climate change would clearly be different. A gross-net approach to setting targets, in turn, may therefore inform judgement as to a country's 'fair share' of the collective global effort to mitigate emissions.

### Which emissions and removals are counted?

11. Second, there is the question of which emissions and removals are actually counted in any given year in measuring emissions reductions.
12. LCANZI's position is that all emissions and removals should be counted, as reported in New Zealand's Greenhouse Gas Inventory annual report to the UNFCCC. This includes removals arising from forests that were first planted before 1990, and captures peaks and troughs in those removals related to the harvesting and replanting cycle.
13. Broadly, the Commission does not count emissions and removals from pre-1990 forests, and also takes an averaging approach to post-1989 forests. This averaging approach is called "modified activity based" accounting, or "MAB". In essence, the averaging only counts emissions and removals from production forestry, planted after 1989, up until they reach their average long term carbon stock (planted production forests do not provide long-term permanent additional carbon storage beyond this point). The exclusion of removals from pre-1990 forests is to ensure that removals used to meet targets represent additional action to what was occurring under the baseline scenario. This was an agreed principle underpinning the Kyoto Protocol for countries which would otherwise have removals from historical forestry activities contributing to meeting their targets. The idea is that in focusing on 'additionality', governments are held to account for their actions in addressing climate change, rather than for legacy effects of historical forestry.
14. This means that in some years, despite harvesting occurring and therefore emissions from forestry being released into the atmosphere, under the Commission's approach these emissions are not counted. Conversely, it also means that in some years where forests are growing and therefore removals from the atmosphere are occurring, under the Commission's approach these removals are not counted. The Commission applied this approach to estimate the contribution from forestry activities to the emissions budgets to reflect the focus on 'additionality' (discussed above) and to 'smooth out' the fluctuations in net emissions due to harvest cycles of production forests over time (which, if not factored out, may 'drown out' changes in other emissions activities in New Zealand and render comparisons over time less meaningful).
15. This has led to part of the Commission's response to LCANZI's critique of MAB – that LCANZI only focuses on what MAB accounting does to New Zealand's emissions profile in particular years. The Commission points out that if New Zealand did not use MAB accounting, it would be very easy to meet our 2050 net zero target (with no extra effort from now), because in 2050 there will be a temporary peak of removals from production forests. Under the Commission's accounting approach this temporary peak in removals is largely factored out in 2050 (because most of these forests will have already reached their long term average carbon stock). This means New Zealand must make emissions reductions in other sectors in order to achieve the 2050 net zero target. That is, New Zealand must decarbonise the economy, rather than continue with business-as-usual emissions and use production forestry activities to offset those emissions. LCANZI's proposed accounting method would imply less, not greater action by New Zealand to meet its 2050 emissions target.
16. We note for completeness that the Commission also disputes LCANZI's criticism that the emissions budgets see increases in emissions in the key period to 2030. The Commission says: "New Zealand's emissions in real terms reduce for each budget period, and by the early 2030s [i.e. 2033] net CO<sub>2</sub> emissions will have reached the IPCC 'rule of thumb' of a 50% reduction [on a net-net basis] from 2005/2010 emissions."<sup>2</sup> LCANZI disputes this conclusion from the Commission. The reason for this apparent disagreement may be that the Commission's

<sup>2</sup> Paragraph [76.1] of the Climate Change Commission's submissions in the LCANZI proceeding.

calculation uses MAB accounting, whereas LCANZI uses net emissions from New Zealand's emissions inventory.

17. The above is a brief summary of what were complex arguments made in the course of a five day hearing, and on which there is extensive expert evidence. As you know, the Court has not yet released its judgment. MfE officials are available to discuss these issues with you further if that would assist.

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