

20-D-00698

s 9(2)(f)(iv)

Stuff  
s 9(2)(f)(iv) @stuff.co.nz

Dear s 9(2)(f)(iv)

Thank you for your email of 8 May 2020 requesting the following under the Official Information Act 1982 (the Act):

*I'm requesting under the Official Information Act, all memos and advice - including preliminary advice - provided by the Ministry for the Environment regarding the adequacy of New Zealand's Nationally Determined Contribution under the Paris Agreement, including whether the NDC is compatible with a 1.5C temperature goal*

The Ministry for the Environment has identified 10 documents in scope of your request, as listed in the attached document schedule. Some information within these documents has been withheld under sections 6(a) and 9(2)(g)(i) of the Act to avoid prejudicing the international relations of the Government of New Zealand and to maintain the effective conduct of public affairs through the free and frank expression of opinions between Ministers and officials. Some information has also been removed as it is not in scope of your request.

In terms of section 9(1) of the Act, I am satisfied that, in the circumstances, the withholding of this information is not outweighed by other considerations that render it desirable to make the information available in the public interest.

We have included a number of draft documents in this response pursuant to your request for "preliminary" advice. A number of these documents include advice that does not necessarily represent the final position of the Minister or Ministry. The final Cabinet Paper is available at <https://www.mfe.govt.nz/more/briefings-cabinet-papers-and-related-material-search/cabinet-papers/process-update-new-zealand>.

You have the right to seek an investigation and review by the Office of the Ombudsman of my decision to withhold information relating to this request, in accordance with section 28(3) of the Act. The relevant details can be found on their website at: [www.ombudsman.parliament.nz](http://www.ombudsman.parliament.nz).

Please note that due to the public interest in our work the Ministry for the Environment publishes responses to requests for official information on our [OIA responses page](#) shortly after the response has been sent. If you have any queries about this, please feel free to contact our Executive Relations team: [ministerials@mfe.govt.nz](mailto:ministerials@mfe.govt.nz).

Yours sincerely

Approved electronically by Roger Lincoln

Roger Lincoln  
**Director, Climate Emissions Policy and Markets**

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the Official Information Act 1982

### Document schedule

Document no.	Document date	Content	Decisions	OIA sections applied
1	5 September 2019	Briefing: 2019-B-05574 Recommunication of New Zealand's Nationally Determined Contribution	Release in part	S9(2)(g)(i) S6(a)
2	12 December 2019	Briefing: 2019-B-06295 Updating New Zealand's nationally determined contribution under the Paris Agreement	Release in part	S9(2)(g)(i) S6(a)
3	16 January 2020	Briefing and draft Cabinet Paper: 2020-B-06365 Draft Cabinet paper - updating New Zealand's nationally determined contribution under the Paris Agreement	Release in part	S9(2)(g)(i) S6(a)
4	31 January 2020	Briefing and draft Cabinet Paper: 2020-B-06423 Updated draft Cabinet paper and narrative on updating New Zealand's nationally determined contribution under the Paris Agreement	Release in full	S6(a)
5	5 February 2020	Briefing: 2020-B-06407 Scientific analysis of compatibility of the NDC with 1.5 degrees	Release in part	S6(a)
6	19 February 2020	Briefing and draft Cabinet Paper: 2019-C-06296 Summary of changes to the Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement	Release in part	S6(a)

7	27 February	Briefing and draft Cabinet Paper: 2020-B-06478 Changes to Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement following ministerial consultation	Release in part	S6(a)
8	4 March 2020	Draft Cabinet Paper: 2020-B-06507 Updating New Zealand's Nationally Determined Contribution under the Paris Agreement	Release in part	S6(a)
9	15 April 2020	Updated communications plan for the announcement on the NDC April 2020	Release in part	S6(a)
10	17 April 2020	Updated communications plan for the announcement on the NDC April 2020	Release in part	S6(a)

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## Updating New Zealand's nationally determined contribution under the Paris Agreement

Date Submitted:	12/12/2019 ✓	Tracking #: 2019-B-06295	
Security Level	Restricted ✓	MfE Priority:	Urgent ✓
To Hon James Shaw, Minister for Climate Change ✓		Action sought:	Response by:
		Respond to the recommendations ✓	Discuss with officials
Actions for Minister's Office Staff	Return the signed report to MfE.		
Number of appendices and attachments	Titles of appendices and attachments (ie separate attached documents): Nil		
Note any feedback on the quality of the report			


### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Cassidy McLean-House		
Responsible Manager	Sarah Deblock	022 012 4772	
Director	Roger Lincoln	027 290 7625	✓

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## Updating New Zealand's nationally determined contribution under the Paris Agreement

Out of scope



Risks and mitigations  
S6(a)



9. Our current NDC is often misunderstood by environmental NGOs (E-NGOs) and other commentators (e.g. the Climate Action Tracker). This is due, in part, to simplistic comparisons of countries' headline numbers without considering the technical attributes of NDCs (e.g. point year vs budget), or the relevant national circumstances (e.g. New Zealand's challenging and unique emissions profile). S6(a)

S6(a)

10. S6(a)

[Redacted]

11. S6(a)

[Redacted]

Out of scope

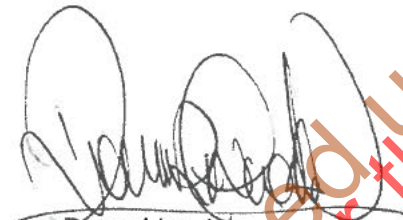
[Redacted]

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Out of scope



**Signature**

  
 Roger Lincoln  
 Director, Climate Change

12/12/19.  
 Date

  
 Hon James Shaw  
 Minister for Climate Change

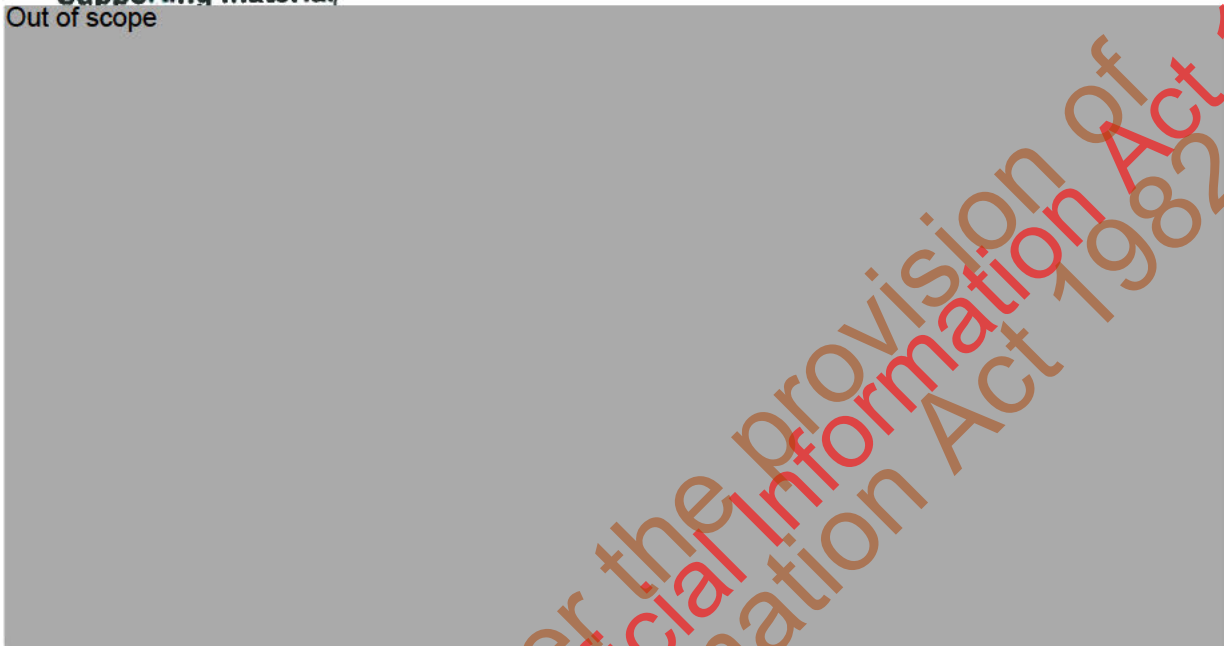
16/12/19  
 Date

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# Updating New Zealand's nationally determined contribution under the Paris Agreement ✓

Supporting material ✓

Out of scope



Context ✓

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Global context ✓

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S6(a)

*New Zealand's NDC*

23. New Zealand's NDC target is to reduce emissions to 30% below 2005 levels across the period 2021-2030. This is an absolute reduction target managed using a carbon budget approach.

24. In 2015, the government went through a comprehensive process to formulate the NDC. This included stakeholder and Māori consultation, economic modelling of the impact of the NDC on our economy and households. This process considered what would represent maximum possible ambition for New Zealand's contribution, taking into account factors like the overall economic cost, CO<sup>2</sup> emissions per capita, and GHG emissions per capita. Our national circumstances have not significantly changed since 2015, and the

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Out of scope

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**Analysis and advice**

*Proposed approach to New Zealand's 2020 NDC update*

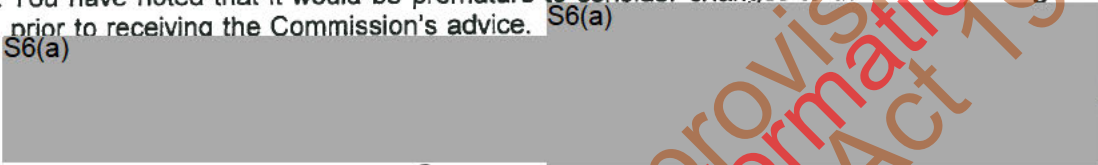
29. On current information, our assessment is that New Zealand's NDC is already highly ambitious. The Climate Change Response Act 2002, as amended by the Zero Carbon Bill, has created an effective mechanism for independently reviewing this assessment, as the Minister for Climate Change can seek advice on the NDC.

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31. You have noted that it would be premature to consider changes to the "headline target" prior to receiving the Commission's advice. S6(a)

S6(a)



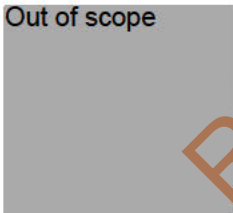
*The ambition of New Zealand's NDC*

32. At the time of the NDC submission, officials considered New Zealand's NDC ambitious comparative to its international counterparts. It was also seen as challenging to achieve due to New Zealand's emissions profile and national circumstances. This remains officials' view.

33. Assessing the ambition of NDCs is more complex than simply comparing headline numbers. Some Parties such as the European Union (EU), are on track to overachieve their target. However, New Zealand cannot steeply decrease domestic emissions by following the approach taken by EU nations, for example, the United Kingdom phasing out coal. Our NDC is particularly challenging as almost 50% of New Zealand's emissions are from agriculture and almost 85% of our electricity is already from renewable sources.

34. We note that there is an increasing push internationally for NDCs to be demonstrated to be consistent with the 1.5°C temperature goal. There are a number of ways to test consistency with the 1.5°C goal which give slightly different results. We note that you have agreed this detailed analysis to assess whether New Zealand's NDC is consistent with 1.5°C is out of scope of this briefing and subsequent Cabinet paper [2019-B-06169 refers]. However, this is something that the Commission could assess as part of its advice.

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**Consultation and Collaboration**

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**Risks and mitigations**

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S6(a)



S6(a)

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## Draft Cabinet paper – updating New Zealand’s nationally determined contribution under the Paris Agreement

Date Submitted:	16/01/2020	Tracking #: 2020-B-06365	
Security Level	Restricted	MfE Priority:	High

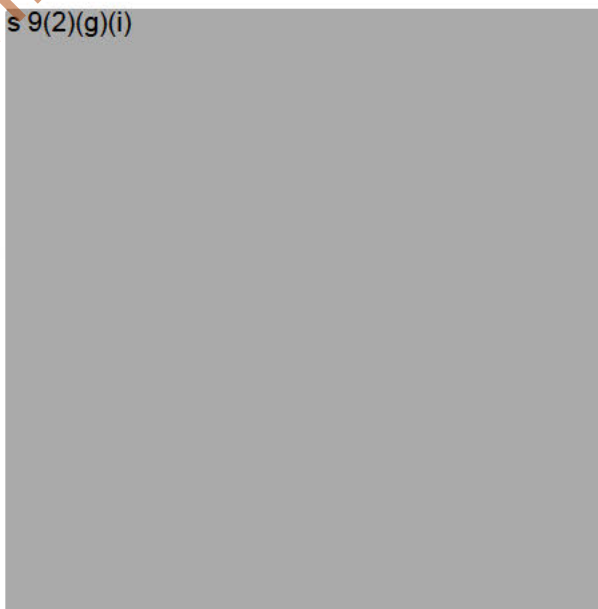
To: Hon James Shaw, Minister for Climate Change	<b>Action sought:</b> Discuss with officials on 22 January 2020	<b>Response by:</b>
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Actions for Minister’s Office Staff	<b>Return</b> the signed report to MfE.
Number of appendices and attachments	Titles of appendices and attachments (ie separate attached documents): 1. Draft Cabinet paper: Updating New Zealand’s nationally determined contribution under the Paris Agreement

### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Meredith Davis		
Responsible Manager	Sarah Deblock	022 012 4772	✓
Acting Director	Matthew Cowle		

s 9(2)(g)(i)



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# Draft Cabinet paper for feedback – updating New Zealand’s nationally determined contribution under the Paris Agreement

*Updating New Zealand’s nationally determined contribution*

Out of scope



## Key elements of the Cabinet paper

5. S6(a)



6. The draft narrative includes the following key messages:

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue ‘Call to Action’.
- S6(a) Our changed domestic context through the Zero Carbon Act framework and targets has increased our overall ambition to be consistent with the 1.5°C goal.
- Enhancement can be interpreted as including both enhanced mitigation and enhanced communication and transparency.<sup>1</sup> Enhanced mitigation can refer to increasing the headline number of an emissions reduction target in an NDC and/or strengthening NDC implementation through additional policies and actions, and aligning implementation with long-term goals. Enhanced communication and transparency can involve providing additional detail, and information to facilitate clarity, transparency and understanding of NDCs.<sup>2</sup>
- The 2050 target will drive New Zealand’s transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international commitment to climate change, and is a waypoint on a long-term journey towards our 2050 target.


<sup>1</sup> World Resources Institute (2019). *Enhancing NDCs: A Guide to Strengthening National Climate Plans by 2020*.

<sup>2</sup> The term “clarity, transparency and understanding” relates to specific UNFCCC guidance in decision 4/CMA



- New Zealand has a sizeable challenge to reduce emissions in the short term due to our national circumstances (population and economic growth) and emissions profile (agricultural and transport emissions, high levels of electricity from renewable sources).
- Our NDC target is challenging and ambitious. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30 percent below 2005 levels across the period 2021-2030. As our NDC is an emissions budget, we will make emissions reductions through our entire NDC period cumulatively. This is an absolute reduction target managed using a carbon budget approach, which is equivalent to reducing projected emissions by approximately one third<sup>3</sup>.

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#### *Consistency of the NDC with 1.5°C*

10. We have included initial analysis on the consistency of the NDC with 1.5°C for your consideration. We note that you have previously agreed that detailed analysis of this is out of scope of this Cabinet paper [2019-B-06179 refers]. However, analysis around the science could form a useful part of the supporting narrative that this update helps enhance our NDC.
11. We seek your agreement to undertaking this detailed analysis, including seeking external peer review, so that the compatibility of the NDC with 1.5°C can be included in the updated NDC narrative and related public messaging.

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<sup>3</sup> An absolute reduction target refers to a target that aims to reduce greenhouse gas emissions by a set amount.

<sup>4</sup> This is in line with section 5.12 of the Cabinet manual which states that controversial matters must be submitted to Cabinet for its consideration.

## Recommendations

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15. We recommend that you:

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- c. **Note** that the analysis included on New Zealand's nationally determined contribution's compatibility with 1.5°C is preliminary only, and its conclusions should be considered illustrative only at this stage
- d. **Agree** that officials should undertake more detailed analysis of New Zealand's nationally determined contribution's compatibility with 1.5°C, S6(a)

Yes  No

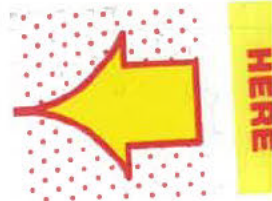
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## Signature

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Matthew Cowie  
(Acting) Director, Climate Change

  
Hon James Shaw  
Minister for Climate Change



18/1/2020  
Date

Appendix 1: Draft Cabinet paper for feedback – Updating New Zealand’s nationally determined contribution under the Paris Agreement

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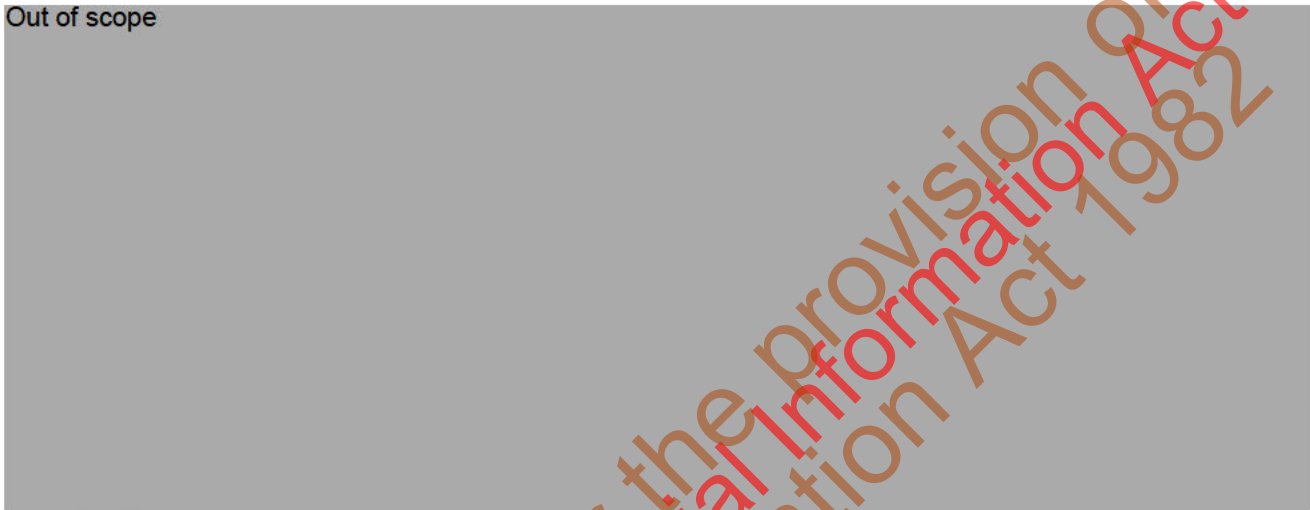
Restricted

Office of the Minister for Climate Change

Chair, Cabinet Environment, Energy and Climate Committee

Updating New Zealand's Nationally Determined Contribution under the Paris Agreement

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Executive summary

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7. I propose that New Zealand S6(a) with information on our changed domestic context, particularly the Climate Change Response (Zero Carbon) Amendment Act (Zero Carbon Act) 2050 target, which means that New Zealand's NDC is compatible with limiting warming to 1.5°C. In addition to a narrative highlighting domestic action, I propose to S6(a) with technical information to improve understanding of its ambition. I seek Cabinet's agreement to submit the 2020 NDC update (Appendix 1) to the UNFCCC.

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S6(a)

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## Background

*New Zealand is committed to ambitious climate action and the Paris Agreement*

11. The Paris Agreement was designed to ensure that all countries, no matter how big or small, contribute to keeping average global temperature increase to well below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C.
12. NDCs represent each country's contribution to these global temperature goals. NDCs are required to show a country's highest level of ambition to reduce global emissions, a progression on previous efforts, and to be more ambitious over time.
13. New Zealand's NDC represents our international contribution to mitigating climate change. It should be understood as a waypoint on a long-term journey towards the 2050 target we set under the Zero Carbon Act, which is a 1.5°C consistent target. It also sets us on a path towards the Paris Agreement's Article 4(1) objective for Parties to aim for carbon neutrality – balancing emissions and removals – in the second half of the century.

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*Enhancing NDCs in 2020*

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18. Enhancement can be interpreted as including both enhanced mitigation and enhanced communication and transparency.<sup>2</sup> Enhanced mitigation can refer to increasing the headline number of an emissions reduction target in an NDC and/or strengthening NDC implementation through additional policies and actions, and aligning implementation with

<sup>2</sup> World Resources Institute (2019). *Enhancing NDCs: A Guide to Strengthening National Climate Plans by 2020*.

long-term goals. Enhanced communication and transparency can involve providing additional detail, and information to facilitate clarity, transparency and understanding of NDCs.<sup>3</sup>

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## Analysis

### Approach to updating New Zealand's NDC in 2020

25. New Zealand's NDC is short and succinct. Its structure has been modelled on how Parties to the Kyoto Protocol communicated their commitments. However, our existing NDC is not well understood. International commentators frequently report erroneously on the nature and ambition of our NDC, which is often then reported in domestic media coverage.<sup>7</sup>
26. Some Parties to the Paris Agreement have used, or plan to use, their NDCs to describe their approach to climate action, beyond an emissions reduction target. I propose that New Zealand S6(a) [redacted] by providing increased information on our climate action, and its contribution towards limiting global temperature rise to 1.5°C.
27. The proposed update of the NDC was guided by the following principles:
- The NDC should express New Zealand's commitment to limiting global temperature rise to 1.5°C; *(rather than 2°C)*
  - The NDC should effectively communicate the ambition and nature of New Zealand's contribution to the global effort, including through our domestic policies and measures;
  - The NDC should be enduring in nature and reflect the fact that domestic policies and actions may change or evolve over time, for example in response to the independent Climate Change Commission's advice, or due to technological advancements;
  - The NDC should be clearly communicated to ensure understanding of the technical elements of the NDC, for example the implications of taking an absolute emissions budget approach;
  - The NDC should not prejudge how New Zealand will meet its NDC, but should continue to keep the option of using international carbon markets open for future governments, as a way to supplement domestic action.

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Out of scope

29. The key messages that I propose to communicate S6(a) [redacted] are summarised below.

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue Call to Action.
- S6(a) [redacted] Our changed domestic context through the Zero Carbon Act framework, which includes the 2050 target, has increased our overall ambition to be consistent with the 1.5°C goal.
- The 2050 target will drive New Zealand's transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international

<sup>7</sup> For example, Carbon Action Tracker's report on New Zealand mischaracterises New Zealand's NDC, and this report is often referenced in domestic media coverage.



contribution to climate change, and is a waypoint on a long-term journey towards our 2050 target.

- New Zealand has a sizeable challenge to reduce emissions in the short term due to our national circumstances (population and economic growth) and emissions profile (agricultural and transport emissions, high levels of electricity generation from renewable sources).
- Our NDC target is challenging and ambitious. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30% below 2005 levels across the period 2021-2030. As our NDC is an absolute reduction target managed using an emissions budget approach, we will be responsible for reducing emissions through our entire NDC period cumulatively. This is equivalent to reducing projected emissions by approximately one quarter.

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30. In addition, S6(a) includes technical information to support understanding of New Zealand's NDC. This is to help demonstrate that New Zealand's NDC is challenging and ambitious. The update includes information on New Zealand's emissions profile (e.g. high proportion of emissions from agriculture), national circumstances (e.g. projected 50% increase in population from 1990 to 2030) and the nature of our NDC (e.g. an explanation of our emissions budget for the period 2021-2030).
31. The additional technical information is provided in line with specific and detailed guidance on what to include in NDCs which was agreed at COP24 in 2018.<sup>8</sup> This guidance (as appropriate) is a requirement for second and subsequent NDCs. S6(a)

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Authorised for lodgement.

Hon James Shaw

**Minister for Climate Change**

## Appendix 2: Further detail on New Zealand’s nationally determined contribution under the Paris Agreement

### New Zealand’s NDC

1. New Zealand’s NDC target is to reduce emissions to 30% below 2005 levels across the period 2021-2030. This is an absolute reduction target managed using an emissions budget approach.
2. This is a different approach to the 2050 target, which is a “point year target”. This means the NDC sets a budget for our emissions in all of the years of the NDC period (2021-2030) which we are responsible for. By comparison, point year targets represent a goal for the target year only, e.g. net zero emissions in 2050, with no specific accountability for the years prior to the target.

GRAPH

### New Zealand’s NDC is challenging but achievable

3. Our NDC equates to a budget of approximately 600 million tonnes over the period 2021-2030.
4. New Zealand’s gross emissions are projected to be approximately 783 million tonnes over the NDC period, which means we need to reduce approximately 183 million tonnes of emissions throughout 2021-2030 to meet our NDC target.
5. In 2015, the NDC level was determined following stakeholder and Māori consultation, economic modelling of the impact of the NDC on our economy and households. The process further considered what would represent maximum possible ambition for New Zealand’s contribution, taking into account factors like the cost of effort, national circumstances, historical responsibility for climate change, carbon dioxide emissions per capita versus all-greenhouse gas emissions per capita, and national GDP.

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**We need to better communicate our Paris contribution**

13. Our NDC is often reported on as if it were a point year target, rather than an absolute reduction target using an emissions budget approach.
14. This leads to commentary which significantly underestimates the mitigation task required to meet our NDC.<sup>9</sup> The technical information provided in the 2020 NDC update will help to improve understanding of our NDC.
15. There is no unique way for an emissions pathway to meet a temperature goal. As a measure of consistency, we adopt comparison with the global emissions pathways as assessed by the IPCC, which include both the temperature goals and the constraints of technical possibility, cost-effectiveness, and global development. Because of the range of scenarios and assumptions that must be made, we don't make definitive statements of consistency.
16. The scenarios assessed by the IPCC that meet the 1.5°C target show steep reductions after 2020 which slow as the century progresses. This reflects the increasing marginal costs of mitigation associated with the constraints mentioned in the previous paragraph. The upshot of this is that emissions reductions become comparatively harder as the world approaches net zero emissions in the middle of the century.
17. One consequence of the concavity of the global emissions pathways is that reductions out to 2030 are very steep. When assessed using an all-gases CO<sub>2</sub>-equivalent approach, New Zealand's NDC does not show as steep reductions as the global pathways. It is therefore not consistent with scenarios meeting the 1.5°C target, although it might be consistent with 2°C. However, this inconsistency is a consequence of the modelled global trajectories and is only reflective of the period covered by the NDC. It does not necessarily mean that our trajectory towards and beyond 2030 is incompatible with limiting warming to 1.5°C.
18. Similarly, when considered via a split gas approach, our NDC is likely to be consistent with 1.5°C. S6(a)

S6(a)

<sup>9</sup> See for example Climate Action Tracker, which is frequently referenced in New Zealand media.

19. Due to New Zealand's high proportion of methane in our emissions profile, an all-gases approach does not adequately reflect the contribution of our NDC and can lead to invalid assessments of our ambition. This is particularly true for the expected pathway of reducing methane emissions: the all-gases CO<sub>2</sub>-equivalent comparison represents this as an ongoing increase in warming, whereas in fact it contributes a cooling effect to global climate. Due to the high proportion of methane in our emissions profile Cabinet agreed for a split gas target for 2050, as legislated for in the Zero Carbon Act in 2019.
20. New Zealand's NDC was formulated before the Paris Agreement was adopted in 2015 and on the basis that the global temperature goal was likely to be 2°C. When the NDC was assessed using an all-gases CO<sub>2</sub>-equivalent approach in the context of its judicial review, it was found likely to be consistent with 2°C.
21. The NDC is not consistent with 1.5°C when using an all-gases CO<sub>2</sub>-equivalent approach. However, when considered via a split gas approach our NDC is likely to be consistent with 1.5°C.<sup>10</sup> S6(a)

S6(a)

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<sup>10</sup> Note that this assessment is based on the Zero Carbon Act's biogenic methane reduction target of 10 percent by 2030 being met.



S6(a)



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**New Zealand's 2030 NDC is a waypoint on a journey toward our 2050 target, and constitutes our international contribution to reduce emissions in the near-term. S6(a)**

S6(a) is a multi-year emissions budget. We will account for all emissions in the years between 2021 and 2030, not only in the target year (2030). What matters most for holding global temperature rise to 1.5° Celsius is the amount emitted altogether. Provisional numbers show that New Zealand will be responsible for reducing emissions by S6(a) over the NDC period, which equates to approximately S6(a) of our projected total emissions for 2030.

*Delivered now*

First and foremost, New Zealand plans to achieve our 2030 NDC target by reducing our domestic emissions across all sectors and greenhouse gases, and increasing carbon dioxide removals through forestry, in line with the best available science. In cases where New Zealand is unable to reduce emissions through domestic action, we will supplement our efforts by using international carbon markets with environmental integrity. Cooperating with other countries will enable us to contribute to greater global emissions reductions.

**Meeting our 2030 NDC target represents a sizeable challenge due to our national circumstances and emissions profile.** New Zealand's population and economy are predicted to continue growing, along with our gross emissions. In addition, our largest emitting sectors, agriculture (48 percent) and energy (41 percent), are unable to deliver domestic abatement at the same scale in the short-term as others with dissimilar emissions profiles. This is in part because of the lack of available technologies, our existing high proportion of renewable electricity generation (80 to 85 percent), and our road transport (18 percent of our gross emissions) servicing a widely distributed low density population (4.8 million as of March 2017 at a density of 18 people per square kilometre). We are mindful, however, that a successful transition will require us to overcome these challenges and to capitalise on the opportunities instead.

Out of

Out of scope



## Updated draft Cabinet paper and narrative on updating New Zealand's nationally determined contribution under the Paris Agreement

Date Submitted:	31/01/2020	Tracking #: 2020-B-06423	
Security Level	RESTRICTED	MfE Priority:	Urgent

To Hon James Shaw, Minister for Climate Change	<b>Action sought:</b> Respond to the recommendations Discuss with officials	<b>Response by:</b> 3 February 2020
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Actions for Minister's Office Staff	<b>Return</b> the signed report to MfE.
Number of appendices and attachments	Titles of appendices and attachments (ie separate attached documents): 1. Cabinet paper and draft narrative: Updating New Zealand's nationally determined contribution under the Paris Agreement

### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Cassidy McLean-House		
Responsible Manager	Sarah Deblock	022 012 4772	✓
Director	Matthew Cowie		

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# Updated draft Cabinet paper and narrative on updating New Zealand's nationally determined contribution under the Paris Agreement

## Key Messages

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Table 1: Range of fairness indicators for comparing New Zealand's contribution<sup>1</sup>

Full name	Brief description
Resource-sharing of budget for 2°C	Based on a long run equal per capita share of global GHG emissions, this indicator provides suggested GHG emissions budgets for New Zealand over time.
Resource-sharing of CO <sub>2</sub>	Based on a long run equal per capita share of global CO <sub>2</sub> emissions, this indicator provides suggested CO <sub>2</sub> emissions budgets for New Zealand over time.
Cost of effort	This indicator compares the relative costs of emissions reductions in different countries.
Past effort	This indicator reveals which countries have made significant efforts to reduce emissions. It is a combination of emissions intensity, income and per capita emissions.

<sup>1</sup> Working group paper, from the Paris Project Workshop. 14 August 2014.

Capacity	This indicator provides a capacity score, which relates to a country's ability to reduce emissions. It is a combination of emissions intensity, income and per capita emissions.
National circumstances	This is a range of metrics that attempt to describe the key differences between countries' special circumstances.
Share of the world's emissions	This indicator relates a countries' share of global emissions to its share of global population.
Past precedent	This indicator provides suggested emissions targets for New Zealand based on existing climate change commitments.
Headline number	This indicator looks at the percentage emissions reductions put forward by other countries.

*Compatibility of our NDC with 1.5°C*

12. Officials will provide you with further advice on the compatibility of our target with 1.5°C in the coming week.
13. We have removed sections referring to consistency with 1.5°C from the Cabinet paper because our current findings are inconclusive, and further analysis is needed before we are in a position to provide advice on the consistency of the NDC with the temperature goal.

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**Signature**

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Matthew Cowie  
(Acting) Director, Climate Change

31/1/20

Date

Hon James Shaw  
Minister for Climate Change

2/2/2020

Date

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**Annex 1: Draft Cabinet paper and narrative – Updating New Zealand’s nationally determined contribution under the Paris Agreement**

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Restricted ✓

Office of the Minister for Climate Change ✓

Chair, Cabinet Environment, Energy and Climate Committee ✓

Updating New Zealand's Nationally Determined Contribution under the Paris Agreement ✓

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S6(a)

Out of scope

### Background

*New Zealand is committed to ambitious climate action and the Paris Agreement*

Out of scope

15. New Zealand's NDC represents our international contribution to mitigating climate change. It is a waypoint on a long-term journey towards the 2050 target we set under the Zero Carbon Act, which is a 1.5°C consistent target. It also sets us on a path towards the Paris Agreement's Article 4(1) objective for Parties to aim for carbon neutrality – balancing emissions and removals – in the second half of the century.
16. New Zealand's NDC is to reduce emissions to 30% below 2005 levels across the period 2021-2030. This corresponds to a total budget for our emissions from 2021-2030 which equates to approximately three-quarters of our projected total emissions for 2030.
17. Our NDC is a "responsibility target", meaning that the target could be met through a combination of domestic emissions reductions, emissions removals (e.g. from forestry), and access to international carbon markets. We do not need to make decisions on how we will meet our NDC at this stage.
18. Appendix 2 contains further detail on New Zealand's NDC.

*Enhancing NDCs in 2020*

Out of scope

Out of scope

*The need for increased global ambition*  
Out of scope

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## Analysis

### Approach to updating New Zealand's NDC in 2020

27. New Zealand's NDC is short and succinct. Its structure has been modelled on how Parties to the Kyoto Protocol communicated their commitments. However, our existing NDC is not well understood. International commentators frequently report erroneously on the nature and ambition of our NDC, which is often then reported in domestic media coverage.
28. Some Parties to the Paris Agreement have used, or plan to use, their NDCs to describe their approach to climate action, beyond an emissions reduction target. I propose that New Zealand enhance its NDC by providing increased information on our climate action, and its contribution towards limiting global temperature rise to 1.5°C.
29. The proposed update of the NDC was guided by the following principles:
- New Zealand's commitment to limiting global temperature rise to 1.5°C (rather than 2°C);
  - The NDC should effectively communicate the challenging nature of New Zealand's contribution to the global effort including through our domestic policies and measures;
  - The NDC should be enduring in nature and reflect the fact that domestic policies and actions may change or evolve over time, for example in response to the independent Climate Change Commission's advice, or due to technological advancements;
  - The NDC should be clearly communicated to ensure understanding of the technical elements of the NDC, for example the implications of taking an absolute emissions budget approach;
  - The NDC should not prejudice how New Zealand will meet our NDC, but should continue to keep the option of using international carbon markets open for future governments, as a way to supplement domestic action.

### Proposed NDC update

Out of scope

31. The key messages that I propose to communicate S6(a) are summarised below.

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue Call to Action.
- S6(a) with information on our domestic context including the Zero Carbon Act framework, particularly the 2030 methane reduction target, and the 2050 targets which are consistent with 1.5°C.
- The 2050 targets will drive New Zealand's transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international

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contribution to climate change and a waypoint on a long-term journey towards our 2050 target.

- Our focus is on addressing the long-lived gases that largely determine long-term warming of the climate. We will take strong action on long-lived gases as these emissions can remain in the atmosphere for centuries, increasing in concentration as long as their emissions continue.<sup>S6(a)</sup>

S6(a)

- New Zealand's national circumstances directly relate to our emissions profile. New Zealand's population and economy are predicted to continue growing, along with gross emissions. The largest contributors to these emissions are the agriculture (48 percent) and energy (41 percent) sectors. New Zealand has a high proportion of renewable electricity generation (80 to 85 percent).
- New Zealand's NDC target is challenging. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30% below 2005 levels across the period 2021-2030. As the NDC is an absolute reduction target managed using an emissions budget approach, this means New Zealand will be responsible for reducing emissions through the entire NDC period cumulatively. This is expected to deliver reductions equivalent to one quarter of projected emissions over the NDC period.<sup>9</sup>

Out of scope

32. In addition, the NDC update includes technical information to support understanding of New Zealand's NDC, and the challenge it sets us. The update includes information on New Zealand's emissions profile (e.g. high proportion of emissions from agriculture), national circumstances (e.g. projected 50% increase in population from 1990 to 2030) and the nature of our NDC (e.g. an explanation of our emissions budget for the period 2021-2030).

33. The additional technical information is provided in line with specific and detailed guidance on what to include in NDCs which was agreed at COP24 in 2018.<sup>10</sup> This guidance is a requirement for second and subsequent NDCs. By applying it to our first NDC update in a deliberate way New Zealand will be signalling our commitment to the effective implementation of the Paris Agreement, and demonstrating leadership.

<sup>8</sup> This modelling assumes that the target to reduce biogenic methane emissions to at least 10 percent below 2017 levels by 2030 is met, and takes into account projected removals from forestry. Please note, this figure is dependent on old forestry projections and is subject to change.

<sup>9</sup> Based on projections in New Zealand's 4<sup>th</sup> Biennial Report, 2019.

<sup>10</sup> Through Katowice Decision 4/CMA.1 UNFCCC Parties agreed specific and detailed guidance on the information to be provided in NDCs and strongly encouraged Parties to provide this information in relation to their first NDCs, including those communicated or updated by 2020.

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Authorised for lodgement.

Hon James Shaw

**Minister for Climate Change**



## Appendix 2: Further detail on New Zealand's nationally determined contribution under the Paris Agreement

### *New Zealand's NDC*

1. New Zealand's NDC target is to reduce emissions to 30% below 2005 levels across the period 2021-2030. This is an absolute reduction target managed using an emissions budget approach.
2. This is a different approach to the 2050 target, which is a "point year target". This means the NDC sets a budget for our emissions in all of the years of the NDC period (2021-2030) which we are responsible for. By comparison, point year targets represent a goal for the target year only, e.g. net zero emissions in 2050, with no specific accountability for the years prior to the target.

### *New Zealand's NDC is challenging but achievable*

3. Our NDC equates to a budget of approximately 600 million tonnes over the period 2021-2030.
4. New Zealand's gross emissions are projected to be approximately 783 million tonnes over the NDC period, which means we need to reduce approximately 183 million tonnes of emissions throughout 2021-2030 to meet our NDC target.
5. In 2015, the NDC level was determined following stakeholder and Māori consultation, economic modelling of the impact of the NDC on our economy and households. The process further considered what would represent maximum possible ambition for New Zealand's contribution, taking into account factors like the cost of effort, national circumstances, historical responsibility for climate change, carbon dioxide emissions per capita versus all-greenhouse gas emissions per capita, and national GDP.

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Out of scope

***We need to better communicate our Paris contribution***

13. Our NDC is often reported on as if it were a point year target, rather than an absolute reduction target using an emissions budget approach.
14. This leads to commentary which significantly underestimates the mitigation task required to meet our NDC.<sup>11</sup> The technical information provided in the 2020 NDC update will help to improve understanding of our NDC.

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<sup>11</sup> See for example Climate Action Tracker, which is frequently referenced in New Zealand media.

Contextual information accompanying New Zealand's NDC ✓

S6(a)

Out of scope

**New Zealand's national circumstances include trends of continuing growth of our population and economy, along with our gross emissions.** The largest contributors to these emissions are our agriculture (48 percent) and energy (41 percent) sectors. Together with our existing high proportion of renewable electricity generation (80 to 85 percent), this means New Zealand has a challenging task ahead. We are mindful, however, that a successful transition to a low emissions, climate-resilient future will require us to overcome these challenges and to capitalise on the opportunities instead.

**New Zealand is focussed on the Paris Agreement goal of pursuing efforts to limit global temperature increase to 1.5°C above pre-industrial levels.** The benefits of staying within 1.5°C, and making far-reaching and rapid transformations, are clearly outlined in the Intergovernmental Panel on Climate Change *Special Report on global warming of 1.5°C* and reiterated in the *Talanoa Call to Action*. New Zealand has taken on board these findings in the development of its domestic policy planning; we are placing the objective of 1.5°C at the heart of our response.

**Our Climate Change Response (Zero Carbon) Amendment Act 2019 legislates a 2050 emissions reduction target within the 1.5°C threshold, and our 2030 NDC is a waypoint on a journey toward this long-term goal.** In keeping with the science, New Zealand is emphasising reductions in the long-lived gases that largely determine long-term warming of the climate. We want to ensure they are not emitted for years to come during a crucial juncture for the world. Our 2050 target is therefore set to reduce: emissions of biogenic methane to 24-47 percent below 2017 levels by 2050, and net emissions of all other greenhouse gases to zero by 2050. It also includes an interim step to reduce biogenic methane emissions to at least 10 percent below 2017 levels by 2030. S6(a)

S6(a)

Out of scope





## Scientific analysis of compatibility of the NDC with 1.5 degrees

Date Submitted:	5/02/2020	Tracking #: 2020-B-06407	
Security Level	RESTRICTED	MfE Priority:	Non-Urgent

To Hon James Shaw, Minister for Climate Change	<b>Action sought:</b> "note this Briefing, and agree to the recommendations"	<b>Response by:</b> 10 February 2020
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Actions for Minister's Office Staff	<b>Return</b> the signed report to MfE.
Number of appendices and attachments #	Nil

### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Dominic Thorn		✓
Responsible Manager	Robert McClean	022 067 6655	✓
Director	Roger Lincoln		✓

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## Scientific Analysis of compatibility of the NDC with 1.5 degrees

### Key Messages

1. As a measure of consistency with global temperature goals, MfE officials' advice adopts a comparison with the global emissions pathways as assessed by the IPCC.
2. New Zealand's NDC is a budget of roughly 601 Mt CO<sub>2</sub>-equivalent over the 2021-2030 period.
3. We can adopt a multi-year budget or a point year target to assess consistency with global temperature goals. Both methods require simplifying assumptions and neither is perfect. To assess the compatibility of the NDC with a temperature goal, we suggest budgets are more appropriate for long-lived gases, whereas point years are more appropriate for methane. This reflects the fact that the climate impact of long-lived gases is determined by their cumulative emissions, while the impact of methane depends on the emission rate.
4. Considering all gases together as CO<sub>2</sub>-equivalent, New Zealand's NDC is not consistent with pathways limiting warming to 1.5°C with no or limited overshoot, but is consistent with pathways limiting warming to 1.5 with no, limited or high overshoot, or 2 °C.
5. Considering all gases together as CO<sub>2</sub>-equivalent misrepresents the warming effects of short-lived gases.
6. By splitting the gases up by their lifetimes, we get a more accurate representation of warming
7. Multi-year budgets and point year targets are two ways of communicating emissions reductions efforts. In and of themselves they do not reflect scale of ambition.

**Recommendations**

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8. We recommend that you:

a. **Agree** that the findings presented be included in the Cabinet Paper *Updating New Zealand's Nationally Determined Contribution under the Paris Agreement*, and the accompanying narrative S6(a) [redacted]

Yes/No

b. **Agree** that this briefing and appendices will be released proactively on the Ministry for the Environment's website together with the Cabinet paper on Updating the NDC.

Yes/No

**Signature**

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Roger Lincoln  
Director, Climate

Hon James Shaw  
Minister for Climate Change

Date

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# Scientific Analysis of compatibility of the NDC with 1.5 degrees

## Supporting material

### Purpose and context

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1. The upcoming **S6(a)** of New Zealand's NDC will provide an opportunity for New Zealand to publicise on the world stage its unique approach to emissions targets. The split-gas approach used in the Zero Carbon Act is backed by the internationally recognised science and New Zealand is the first country to legislate targets in this way.
2. You requested advice on science-based assessment of compatibility of the NDC with temperature goals, particularly the relation between an emissions budget approach and a point-year target approach.

### Analysis and Advice

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***As a measure of consistency, we adopt comparison with the global emissions pathways as assessed by the IPCC***

3. There is no internationally accepted way to compare emissions targets in the NDCs. It is valid to use global aggregate CO<sub>2</sub>-equivalent emissions to assess overall progress (as in the UNEP Emissions Gap Report), but as discussed below, this measure is too simplistic to compare individual NDCs.
4. There is no unique emissions pathway to meet any chosen temperature goal. As a measure of consistency with a temperature goal, we adopt comparison with the set of global emissions pathways assessed in the 2018 IPCC Special Report on Global Warming of 1.5 °C (SR15). These pathways include the constraints of technical possibility, cost-effectiveness, and global development, and are assessed according to the temperature goals. Because of the range of scenarios and assumptions that must be made, we don't make definitive statements of consistency. The consistency statements in this briefing are made in the context of the type of comparison and the assumptions involved in that assessment.
5. Following the assessment in the SR15, the pathways are compared with the NDC in three groups that
  - a. Limit warming to 1.5 °C with no or limited<sup>1</sup> overshoot
  - b. Limit warming to 1.5 °C with no, limited, or high overshoot<sup>2</sup>
  - c. Limit warming to 2 °C.Overshoot implies a peak followed by a decline in global warming, achieved through net negative CO<sub>2</sub> emissions globally by anthropogenic removal of CO<sub>2</sub> from the atmosphere.
6. This assessment does not include any evaluation of New Zealand's "fair share" of global mitigation. Burden-sharing approaches can be studied using the models that produce the emission pathways, but conclusions are value-laden and out of scope of this analysis.

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<sup>1</sup> Less than 0.1 °C

<sup>2</sup> In scenarios with high overshoot, warming exceeds 1.5°C by at least 0.1°C temporarily but returns to or below 1.5°C by 2100



7. Evaluating the temperature impacts of our NDC using a climate model<sup>3</sup> provides insight into the warming effects of the different gases, but does not significantly add to the assessment of consistency. Such an analysis highlights the strong but short-lived effects of New Zealand's high methane emissions. MfE does not currently have the capability to perform such modelling.
8. The all-gases budget approach doesn't allow consideration of the different warming effects of methane. Unlike long-lived gases, the warming effect of methane is determined by the *rate* of methane emissions, rather than the cumulative amount. For this reason, we suggest budgets are more appropriate for long-lived gas emissions targets, whereas point years are more appropriate for methane.
9. Table 1 summarises the consistency tests used to inform this note.

***Considering all gases together as CO<sub>2</sub>-equivalent, New Zealand's NDC is consistent with pathways limiting warming to 1.5 with no, limited or high overshoot, or 2 °C.***

10. Using the IPCC emissions pathways consistent with the 1.5 and 2 °C warming goals, we calculated a global CO<sub>2</sub>-equivalent 'budget' for the 2021-2030 period, and scaled this by New Zealand's fraction of net global emissions between 1990 and 2014<sup>4</sup>. This provides a representation of New Zealand-specific budgets over the 2021-2030 period in each scenario. We do not necessarily endorse the implied burden-sharing approach. We also emphasise that the all-gases approach does not accurately represent New Zealand's expected contribution to climate change.
11. For these emissions budget estimates, we present the median value for each scenario group, the full range, and the central (interquartile) range in square brackets. The interquartile ranges were widely used in the IPCC SR15, and we assess the NDC to be consistent with a scenario group if it falls within this range.
12. The 36 pathways consistent with the 1.5 °C goal with no or limited overshoot imply a median 2021-2030 budget for New Zealand of 516 Mt CO<sub>2</sub>-e, with a range of 406 – 612 [490-529] Mt CO<sub>2</sub>-e. The NDC budget for this period is 601 Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is not consistent with the global pathways limiting warming to 1.5 °C with no or limited overshoot, because it lies well outside the central range of pathways.
13. The 68 pathways consistent with the 1.5 °C goal with no, low or high overshoot imply a median 2021-2030 budget for New Zealand of 553 Mt CO<sub>2</sub>-e, with a range of 406 – 802 [509-647] Mt CO<sub>2</sub>-e. The NDC budget for this period is 601 Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is consistent with the global pathways limiting warming to 1.5 °C with a temporary overshoot.
14. The 101 pathways consistent with the 2 °C goal imply a median 2021-2030 budget for New Zealand of 631 Mt CO<sub>2</sub>-e, with a range of 465 – 821 [571-686] Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is consistent with the global pathways limiting warming to 2 °C.

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<sup>3</sup> For example, as was presented for the ZCB targets in the NZAGRC submission from to the Select Committee process ([https://www.parliament.nz/en/pb/sc/submissions-and-advice/document/52SCEN\\_EVI\\_87861\\_EN6883/andy-reisinger](https://www.parliament.nz/en/pb/sc/submissions-and-advice/document/52SCEN_EVI_87861_EN6883/andy-reisinger))

<sup>4</sup> Estimated using the World Resources Institute CAIT data set



**All-gases accounting misrepresents the warming effects of short-lived gases**

15. Methane is a short-lived greenhouse gas, so the relationship between emissions and warming is fundamentally different to that for long-lived gases (LLGs) like carbon dioxide and nitrous oxide. The metrics used to combine different gases into CO<sub>2</sub>-equivalent always represent this relationship imperfectly in some way.
16. The internationally agreed metric for converting emissions to CO<sub>2</sub>-equivalent is the 100-year Global Warming Potential (GWP100). GWP100 represents both the heating effect of a gas and its persistence in the atmosphere, over 100 years.
17. The GWP100 metric does not accurately reflect the warming contribution of short-lived gases<sup>5</sup>. This is particularly true for the expected pathway of reducing methane emissions: the all-gases CO<sub>2</sub>-equivalent comparison represents this as an ongoing increase in cumulative emissions that would contribute to further warming, whereas in fact it contributes a cooling effect to global climate.
18. Due to New Zealand's high proportion of methane in our emissions profile, an all-gases approach does not adequately reflect the contribution of our NDC to global warming and can lead to invalid assessments of our ambition.

**By splitting the gases up by their lifetimes, we get a more accurate representation of warming**

19. The ZCA has separate 2050 targets for biogenic methane (bCH<sub>4</sub>) and all other gases (in this note, we will use "all other gases" and LLGs interchangeably). It also legislates a target for bCH<sub>4</sub> of 10% below 2017 levels by 2030. This constrains the way in which New Zealand will meet its NDC.
20. In meeting our emissions targets, New Zealand will reduce bCH<sub>4</sub> emissions by at least 10% by 2030 and reduce LLGs by (at least) the amount necessary to remain within the remaining NDC budget over the 2021-2030 period.
21. The total estimated 2021-2030 emissions budget implied by the NDC is 601 Mt CO<sub>2</sub>-e. If bCH<sub>4</sub> emissions fall from the currently projected level in 2021 to the target level of 10% below 2017 levels in 2030, the total bCH<sub>4</sub> emissions will be about 311 Mt CO<sub>2</sub>-e. The remaining budget for LLGs is therefore about 290 Mt CO<sub>2</sub>-e. We compared these reductions in bCH<sub>4</sub> and LLGs to analogous emissions in the IPCC SR15 pathways.
22. The 2030 methane target of 10% below 2017 levels is just outside the 2030 central range in the IPCC 1.5 °C pathways of -11 to -30%. Considering the uncertainty in estimating these emissions, it is reasonable to say that this target is consistent with the 1.5 °C pathways with no or limited overshoot.
23. The 33 pathways consistent with the 1.5 °C goal with no or limited overshoot imply a median 2021-2030 LLG budget for New Zealand of 252 Mt CO<sub>2</sub>-e, with a range of 189 – 302 [235-261] Mt CO<sub>2</sub>-e. The implied NDC budget for LLGs for this period is 290 Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is not consistent with the global pathways limiting warming to 1.5 °C with no or limited overshoot.
24. The 68 pathways consistent with the 1.5 °C goal with no, limited or high overshoot imply a median 2021-2030 budget for long-lived gases New Zealand of 272 Mt CO<sub>2</sub>-e, with a range of 189-397 [250-323] Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is consistent with the global pathways limiting warming to 1.5 °C with a temporary overshoot.

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<sup>5</sup> See the IPCC Special Report on Global warming of 1.5 °C, cross-chapter box 2 *Measuring Progress to Net Zero Emissions Combining Long-Lived and Short-Lived Climate Forcers*



25. The 101 pathways consistent with the 2 °C goal imply a median 2021-2030 budget for New Zealand of 316 Mt CO<sub>2</sub>-e, with a range of 234-410 [286-345] Mt CO<sub>2</sub>-e. By this measure, New Zealand's NDC is consistent with the global pathways limiting warming to 2 °C.
26. Assessed using a 2021-2030 budget approach, as in the all-gases analysis above, New Zealand's LLG emissions trajectory to meet the NDC target is consistent with the 1.5 °C pathways with higher overshoot. As the point-year bCH<sub>4</sub> target is also consistent, the NDC is consistent with these pathways.

***Multi-year budgets and point year targets are two ways of communicating emissions reductions efforts. In and of themselves they do not reflect scale of ambition***

27. The ambition of an emissions reduction target is independent of the methodology used to describe the target. Both emissions budgets and point year targets can be used to communicate ambitious or unambitious climate action. Although a budget approach puts a limit on emission across multiple years, putting a tighter constraint on an emissions reduction target than a point year target, of a budget approach doesn't necessarily imply ambition.
28. Point year percentage reductions are only representative of reductions in one given year (i.e. the endpoint) and actual reductions involved in meeting them are sensitive to the reference year, whereas emissions budgets represent cumulative emissions across a period of time.
29. The choice of reference year can dramatically change the reductions necessary to meet a point year target. For example, if the chosen base year is a year with high forestry removals (e.g. 2010), emissions reductions in 2030 are likely to be smaller relative to the base year than if a base year with low forestry removals is used (e.g. 2015). For this reason emissions budgets are more revealing of the climate impacts of a target, but conclusions of ambition cannot be based purely on the choice of target framing.
30. New Zealand's NDC is consistent with global temperature goals when split-gas point year targets are compared to those in the IPCC pathways limiting warming to 1.5°C with no or limited overshoot, while it is not consistent when compared as an emissions budget. However, the NDC is consistent with pathways limiting warming to 1.5°C with no, limited or high overshoot regardless of the method of comparison used here.

Table 1. Summary of all consistency tests used to inform this note. New Zealand's NDC is consistent with 1.5°C pathways using a split-gases, point year approach.

Approach	Scenarios	Conclusion
<b>2021-2030 budget - all gases</b> NDC budget 601 Mt CO <sub>2</sub> -e		
1.5°C no or limited overshoot	36 scenarios	Global range 406-612 [490-529] Mt CO <sub>2</sub> -e Not consistent
1.5°C no, limited and high overshoot	68 scenarios	Global range 406-802 [509-647] Mt CO <sub>2</sub> -e Consistent
2°C	101 scenarios	Global range 465-821 [571-686] Mt CO <sub>2</sub> -e Consistent

<b>2021-2030 budget - split gases</b> All other gases: 2021-2030 budget 290 Mt CO <sub>2</sub> -e		
1.5°C no or limited overshoot	33 scenarios	Global range 189-302 [235-261] Mt CO <sub>2</sub> -e Not consistent
1.5°C no, limited and high overshoot	68 scenarios	Global range 189-397 [250-323] Mt CO <sub>2</sub> -e Consistent
2°C	101 scenarios	Global range 234-410 [286-345] Mt CO <sub>2</sub> -e Consistent
<b>2030 below 2010 point year – all gases</b> All gases: -23%		
1.5°C no or limited overshoot	36 scenarios	Central range -39% to -50% Not consistent
1.5°C no, limited and high overshoot	68 scenarios	Central Range -20% to -46% Consistent
2°C	101 scenarios	Central range -5% to -33% Consistent
<b>2030 below 2010 point year – split gases</b> bCH <sub>4</sub> : -10% All other gases: -35%		
1.5°C no or limited overshoot	33 scenarios	bCH <sub>4</sub> : -11% to -30% other: -39% to -54% Not consistent
1.5°C no, limited and high overshoot	68 scenarios	bCH <sub>4</sub> : +4% to -20% other: -18% to -46% Consistent
2°C	101 scenarios	bCH <sub>4</sub> : +8% to -16% other: -3% to -32% Consistent

#### Assumptions

- For the all-gases tests, we used an NDC 2021-2030 budget of 601 Mt CO<sub>2</sub>-e
- For split-gas tests, we assumed biogenic methane decreases linearly from 2020 to the 2030 ZCA target of 10% below 2017 levels.
- We subtracted cumulative biogenic methane emissions from 2021-2030 from the total NDC budget to get an 'other gases' budget of 290 Mt CO<sub>2</sub>-e.
- For the budgets, entire ranges are given with central (interquartile) ranges in square brackets. For the point years, only central (interquartile) ranges are given

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**Office of the Minister for Climate Change**

**Chair, Cabinet Environment, Energy and Climate Committee**

**Updating New Zealand's Nationally Determined Contribution under the Paris Agreement**

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13. I have requested the Climate Change Commission provide advice and recommendations to the Government on whether the NDC should change to bring it in line with the global 1.5°C temperature goal and, if so, how. Following the Commission's advice, it may be appropriate for the NDC target to be revisited, but this advice will not be available prior to 2021.

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## Background

*New Zealand is committed to ambitious climate action and the Paris Agreement*

15. The Paris Agreement was designed to ensure that all countries, no matter how big or small, contribute to keeping average global temperature increase to well below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C.
16. NDCs represent each country's contribution to these global temperature limits. NDCs are required to show a country's highest level of ambition to reduce global emissions, a progression on previous efforts, and to be more ambitious over time.
17. New Zealand's NDC represents our international contribution to mitigating climate change. It is a waypoint on a long-term journey towards the 2050 targets we set under the Zero Carbon Act, which are consistent with 1.5°C. It also sets us on a path aligned with the Paris Agreement's Article 4(1) objective for Parties to aim for carbon neutrality – balancing emissions and removals – in the second half of the century.

18. New Zealand's NDC is to reduce emissions to 30 per cent below 2005 levels by 2030. New Zealand's projected total emissions across the period 2021-2030 are 783 Mt CO<sub>2</sub>-e, with an expected emissions budget of 601 Mt CO<sub>2</sub>-e. Accordingly, the estimated abatement or sequestration needed over that ten year period is 182 Mt CO<sub>2</sub>-e.

19. New Zealand's NDC is a "responsibility target", meaning that the target could be met through a combination of domestic emissions reductions, emissions removals (e.g. from forestry and other land use), and access to international carbon markets. We do not need to make decisions on how we will meet our NDC at this stage.

Out of scope

*The need for increased global ambition*

Out of scope

## Analysis

### *Approach to updating New Zealand's NDC in 2020*

27. New Zealand's NDC is short and succinct. Its structure has been modelled on how Parties to the Kyoto Protocol communicated their commitments. However, our existing NDC is not well understood. Public commentators often mischaracterise the nature and ambition of our NDC, which is then reported in domestic media coverage.<sup>7</sup>
28. Some Parties to the Paris Agreement have used, or plan to use, their NDCs to describe their approach to climate action, beyond an emissions reduction target. I propose that New Zealand enhance its NDC by providing increased information on our climate action, and its contribution towards limiting global temperature rise to 1.5°C.
29. The proposed update of the NDC was guided by the following principles:
- New Zealand's commitment to limiting global temperature rise to 1.5°C (rather than 2°C);
  - The NDC should effectively communicate the challenging nature of New Zealand's contribution to the global effort including through our domestic policies and measures;
  - The NDC should be enduring in nature and reflect the fact that domestic policies and actions may change or evolve over time, for example in response to the independent Climate Change Commission's advice, or due to technological advancements;
  - The NDC should be clearly communicated to ensure understanding of the technical elements of the NDC and how these enhance ambition, for example the implications of taking an absolute emissions budget approach, rather than a single year target;
  - The NDC should not prejudice how New Zealand will meet our NDC, but should continue to keep the option of using international carbon markets open for future governments, as a way to supplement domestic action.

### *Proposed NDC update*

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<sup>7</sup> For example, Climate Action Tracker's report on New Zealand mischaracterises New Zealand's NDC to represent a weaker emissions reduction target than it actually is, by representing it as a 2030 single year target instead of a 2021-2030 budget period.



31. The key messages that I propose to communicate S6(a) are summarised below:

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue Call to Action.
- S6(a) with information on our domestic context including the Zero Carbon Act framework, and the 2050 targets.
- The 2050 targets will drive New Zealand's transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international contribution to climate change and a waypoint on a long-term journey towards our 2050 targets.
- Our domestic mitigation targets address long-lived and short-lived gases appropriately, considering scientific understanding of their different effects. We will take strong action on long-lived gases as these emissions remain in the atmosphere for centuries, increasing in concentration as long as the gases continue to be emitted and largely determine long-term warming.
- New Zealand's national circumstances directly relate to our emissions profile. New Zealand's population and economy are predicted to continue growing. The largest contributors to these emissions are the agriculture (48 per cent) and energy (41 per cent) sectors. New Zealand has a high proportion of renewable electricity generation (80 to 85 per cent).
- Achieving New Zealand's NDC target will be challenging. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30 per cent below 2005 levels by 2030. As the NDC is an absolute emissions reduction target managed using an emissions budget approach, this means New Zealand will be responsible for reducing emissions across the entire NDC period, 2021-2030. This would make us responsible for reducing emissions by 182 million tonnes, which equates to around a quarter of our projected total emissions between now and 2030.<sup>8</sup>
- The 2021-2030 NDC is a waypoint on a journey toward the long-term 2050 target. New Zealand is set to reduce emissions of biogenic methane to 24-47 per cent below 2017 levels by 2050, and net emissions of all other greenhouse gases to zero by 2050. This includes an interim step to reduce biogenic methane emissions to at least 10 per cent below 2017 levels by 2030, as legislated for in the Zero Carbon Act. As a result of the comparatively low level of reduction in biogenic methane emissions, emissions of all other gases will have to reduce significantly more, in order to meet the NDC target. I anticipate that the Climate Change Commission will provide some clarity on how much all other gases will need to reduce by when they advise the Government on the first three emissions budgets in early 2021.

Out of scope

s 6(a)

Out of scope

47. In 2015, the Government went through a comprehensive process to formulate the NDC. This included stakeholder and Māori consultation, economic modelling of the impact of the NDC on our economy and households, and the cost of our effort. There was also consideration of factors such as national circumstances, historical responsibility for climate change, carbon dioxide emissions per capita versus all-greenhouse gas

Out of scope

49. I believe that I have consulted extensively on the framework for delivering New Zealand's climate action out to 2050, which culminated in the Zero Carbon Act's near unanimous adoption late last year. I view the NDC as a component of this wider climate policy framework, and a waypoint on our transition to a low emissions, climate resilient Aotearoa. My proposal is therefore to enhance the NDC with information reflecting the



matters covered by the Zero Carbon Bill consultation without undertaking further comprehensive consultation.

Out of scope



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**Recommendations**

Out of scope



Authorised for lodgement.

Hon James Shaw

**Minister for Climate Change**

**Appendix 2: Contextual information accompanying New Zealand's NDC**

S6(a)



Out of scope



Out of scope



Out of scope

Out of scope

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Appendix 3: Information to facilitate clarity, transparency and understanding of New Zealand's NDC

Out of scope



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<sup>12</sup> IPCC 4<sup>th</sup> Assessment Report

Out of scope

Element: How the Party considers that its NDC is fair and ambitious in the light of its national circumstances	
Sub-element:	Information:
How the Party considers that its NDC contribution is fair and ambitious in the light of its national circumstances.	<p>New Zealand is responsible for low levels of emissions now and historically (0.17 per cent of global gross emissions in 2017). Countries which each individually contribute one per cent or less of global emissions account for nearly a quarter of total emissions. Therefore, New Zealand's efforts matter.</p> <p>The likely cost to the New Zealand economy of meeting this NDC budget in terms of GDP is high relative to many other parties. This is due to a number of factors, such as the existing high level of renewable electricity generation (80-85 per cent), and the make-up of our emissions profile, where almost half of our total emissions originate from agriculture.</p> <p>New Zealand's 2050 target places an emphasis on long-lived gases. The target is to reduce global greenhouse gas (GHG) emissions to net zero by 2050 (excluding biogenic methane for which the target is 24-47 per cent below 2017 levels).</p> <p>The outcome we seek for the 'form' or 'type' of contribution we deliver is an NDC that provides a fair, comparable and transparent representation of New Zealand's effort on climate change.</p>

	Different forms of contribution will better facilitate the accurate measurement of reductions to track progress towards a country's global goal than others, or more clearly (or fairly) represent a country's "effort" (depending on their national circumstance).
Fairness considerations, including reflecting on equity:	A basket of indicators can give an idea of countries' efforts, and New Zealand looked at factors such as: national circumstances, including evolving circumstances such as population growth rates, the size of the forestry sector, the size of the agriculture sector, and access to natural resources; cost of effort (sharing), including to the economy; resource sharing, such as sharing greenhouse gas emissions, including carbon dioxide versus methane per capita; historical responsibility for climate change; income and capacity, such as the ability to afford to mitigate more emissions than others; abatement required to meet NDC headline target, and the gap between the business-as-usual emissions curve and emissions curve needed to meet the NDC target.
How the Party addressed Article 4, paragraph 3, of the Paris Agreement (i.e. how NDC target represents progression and highest possible ambition):	New Zealand's NDC target represents a progression beyond New Zealand's current 2020 target in terms of headline number, cost and emissions impact, reduction from business-as-usual emissions, improvement in emissions efficiency of the New Zealand economy and a stronger focus on domestic emissions reductions.
How the Party has addressed Article 4, paragraph 6, of the Paris Agreement (i.e. LD and small island developing states may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances):	N/A – noting Tokelau's preference to append an NDC to New Zealand's.
<b>Element: How the NDC contributes towards achieving the objective of the Convention as set out in its Article 2</b>	
<b>Sub-element:</b>	<b>Information:</b>
<i>Article 2 of the Convention</i> (i.e. stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system):	New Zealand welcomed the IPCC's <i>Special Report on global warming of 1.5°C</i> , and the urgency of climate action that we have a duty to respond to.  New Zealand's target choice should primarily be guided by the best available scientific knowledge. The IPCC is the definitive source of evidence to support climate change policy development. Its reports represent the best expert assessment of global knowledge on climate change.
How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement. (i.e. global temperature goals, including to limit global temperature to 1.5°C):	New Zealand has a duty to respond to the IPCC's conclusion that limiting global warming to 1.5°C "would require rapid and far-reaching transitions" in most human activities; as well as the inclusion of emissions pathways consistent with limiting warming to 1.5°C, which have



	<p>gained considerable influence as representing what is “necessary” to achieve the aim of the Paris Agreement.</p> <p>The report provided evidence to inform the 2050 target in New Zealand’s Climate Change Response (Zero Carbon) Amendment Act, which will be a significant challenge requiring early and more ambitious action across all sectors. The Act has legislated a domestic target out to 2050 that is consistent with 1.5°C.</p> <p>The NDC contributes towards these Articles by acknowledging the contribution of the Talanoa Dialogue.</p> <p>Additionally, there is a planned proposal to request the Climate Change Commission to review our NDC to provide advice about New Zealand’s targets (and the NDC target).</p>
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## Summary of changes to the Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement

Date Submitted:	19/02/2019	Tracking #: 2020-B-06478	
Security Level	RESTRICTED	MfE Priority:	Urgent

	<b>Action sought:</b>	<b>Response by:</b>
To Hon James Shaw, Minister for Climate Change	<b>Note</b> the changes to the Cabinet paper and NDC <b>Circulate</b> the Cabinet paper for Ministerial consultation	Thursday 20 February

Actions for Minister's Office Staff	<b>Return</b> the signed report to MfE.
Number of appendices and attachments	Titles of appendices and attachments: 1. Cabinet paper and narrative: Updating New Zealand's nationally determined contribution under the Paris Agreement

### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Adam Bradshaw		
Responsible Manager	Sarah Deblock	0220124772	✓
Director	Roger Lincoln	0272907625	


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# Summary of changes to the Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement

## Key Messages


### *Purpose*

Out of scope



- a. Inclusion of your recent request to the Climate Change Commission for advice and recommendations on whether New Zealand's NDC should change to bring it in line with the global temperature goal of 1.5°C and, if so, how;


Out of scope



### *Letter to the Climate Change Commission*

3. On 18 February 2020, you sent a letter to the Climate Change Commission (the Commission), requesting advice and recommendations on whether New Zealand's NDC should change to bring it in line with the global 1.5°C temperature goal and, if so, how.

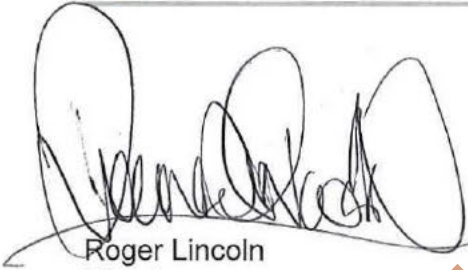
Out of scope



Out of scope

Out of scope

Signature



Roger Lincoln  
Director  
Climate Change Directorate

Hon James Shaw  
Minister for Climate Change

Date

Restricted

Office of the Minister for Climate Change

Chair, Cabinet Environment, Energy and Climate Committee

Updating New Zealand's Nationally Determined Contribution under the Paris Agreement

Out of scope



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Out of scope

S6(a)

S6(a)

Out of scope

## Background

*New Zealand is committed to ambitious climate action and the Paris Agreement*

14. The Paris Agreement was designed to ensure that all countries, no matter how big or small, contribute to keeping average global temperature increase to well below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C.
15. NDCs represent each country's contribution to these global temperature limits. NDCs are required to show a country's highest level of ambition to reduce global emissions, a progression on previous efforts, and to be more ambitious over time.
16. New Zealand's NDC represents our international contribution to mitigating climate change. It is a waypoint on a long-term journey towards the 2050 targets we set under the Zero Carbon Act, which are consistent with 1.5°C. It also sets us on a path aligned with the Paris Agreement's Article 4(1) objective for Parties to aim for carbon neutrality – balancing emissions and removals – in the second half of the century.
17. New Zealand's NDC is to reduce emissions to 30% below 2005 levels across the period 2021-2030. New Zealand's projected total emissions for the period 2021-2030 are 812 Mt

CO<sub>2</sub>-e, with an expected emissions budget of 626 Mt CO<sub>2</sub>-e. Accordingly, the estimated abatement or sequestration needed over that ten year period is 186 Mt CO<sub>2</sub>-e<sup>2</sup>.

18. New Zealand's NDC is a "responsibility target", meaning that the target could be met through a combination of domestic emissions reductions, emissions removals (e.g. from forestry and other land use), and access to international carbon markets. We do not need to make decisions on how we will meet our NDC at this stage.

Out of scope

*The need for increased global ambition*

Out of scope

Out of scope

## Analysis

### *Approach to updating New Zealand's NDC in 2020*

26. New Zealand's NDC is short and succinct. Its structure has been modelled on how Parties to the Kyoto Protocol communicated their commitments. However, our existing NDC is not well understood. International commentators frequently report erroneously on the nature and ambition of our NDC, which is often then reported in domestic media coverage.<sup>8</sup>
27. Some Parties to the Paris Agreement have used, or plan to use, their NDCs to describe their approach to climate action, beyond an emissions reduction target. I propose that New Zealand enhance its NDC by providing increased information on our climate action, and its contribution towards limiting global temperature rise to 1.5°C.
28. The proposed update of the NDC was guided by the following principles:
- New Zealand's commitment to limiting global temperature rise to 1.5°C (rather than 2°C);
  - The NDC should effectively communicate the challenging nature of New Zealand's contribution to the global effort including through our domestic policies and measures;
  - The NDC should be enduring in nature and reflect the fact that domestic policies and actions may change or evolve over time, for example in response to the independent Climate Change Commission's advice, or due to technological advancements;
  - The NDC should be clearly communicated to ensure understanding of the technical elements of the NDC and how these enhance ambition, for example the implications of taking an absolute emissions budget approach, rather than a single year target;
  - The NDC should not prejudice how New Zealand will meet our NDC, but should continue to keep the option of using international carbon markets open for future governments, as a way to supplement domestic action.

### *Proposed NDC update*

Out of scope

<sup>8</sup> For example, Climate Action Tracker's report on New Zealand mischaracterises New Zealand's NDC to represent a weaker emissions reduction target than it actually is, and this report is often referenced in domestic media coverage.



30. The key messages that I propose to communicate S6(a) are summarised below:

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue Call to Action.

S6(a)

- The 2050 targets will drive New Zealand's transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international contribution to climate change and a waypoint on a long-term journey towards our 2050 targets.
- Our domestic mitigation targets address long-lived and short-lived gases appropriately, considering scientific understanding of their different effects. We will take strong action on long-lived gases as these emissions remain in the atmosphere for centuries, increasing in concentration as long as the gases continue to be emitted and largely determine long-term warming.
- New Zealand's national circumstances directly relate to our emissions profile. New Zealand's population and economy are predicted to continue growing, along with gross emissions. The largest contributors to these emissions are the agriculture (48 percent) and energy (41 percent) sectors. New Zealand has a high proportion of renewable electricity generation (80 to 85 percent).
- Achieving New Zealand's NDC target will be challenging. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30% below 2005 levels across the period 2021-2030. As the NDC is an absolute emissions reduction target managed using an emissions budget approach, this means New Zealand will be responsible for reducing emissions through the entire NDC period cumulatively. This would make us responsible for reducing emissions by 186 million tonnes, which equates to around a quarter of our projected total emissions between now and 2030.

Out of scope

s 6(a)



Out of scope



47. I believe that I have consulted extensively on the framework for delivering New Zealand's climate action out to 2050, which culminated in the Zero Carbon Act's near unanimous adoption late last year. I view the NDC as a component of this wider climate policy framework, and a waypoint on our transition to a low emissions, climate resilient Aotearoa. Out of scope



Out of scope



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Out of scope



9. **Note** that the Minister for Climate Change has requested the Climate Change Commission to provide advice and recommendations to the Government on whether the NDC should change to bring it in line with the global 1.5°C temperature goal and, if so, how;

Out of scope



Authorised for lodgement.

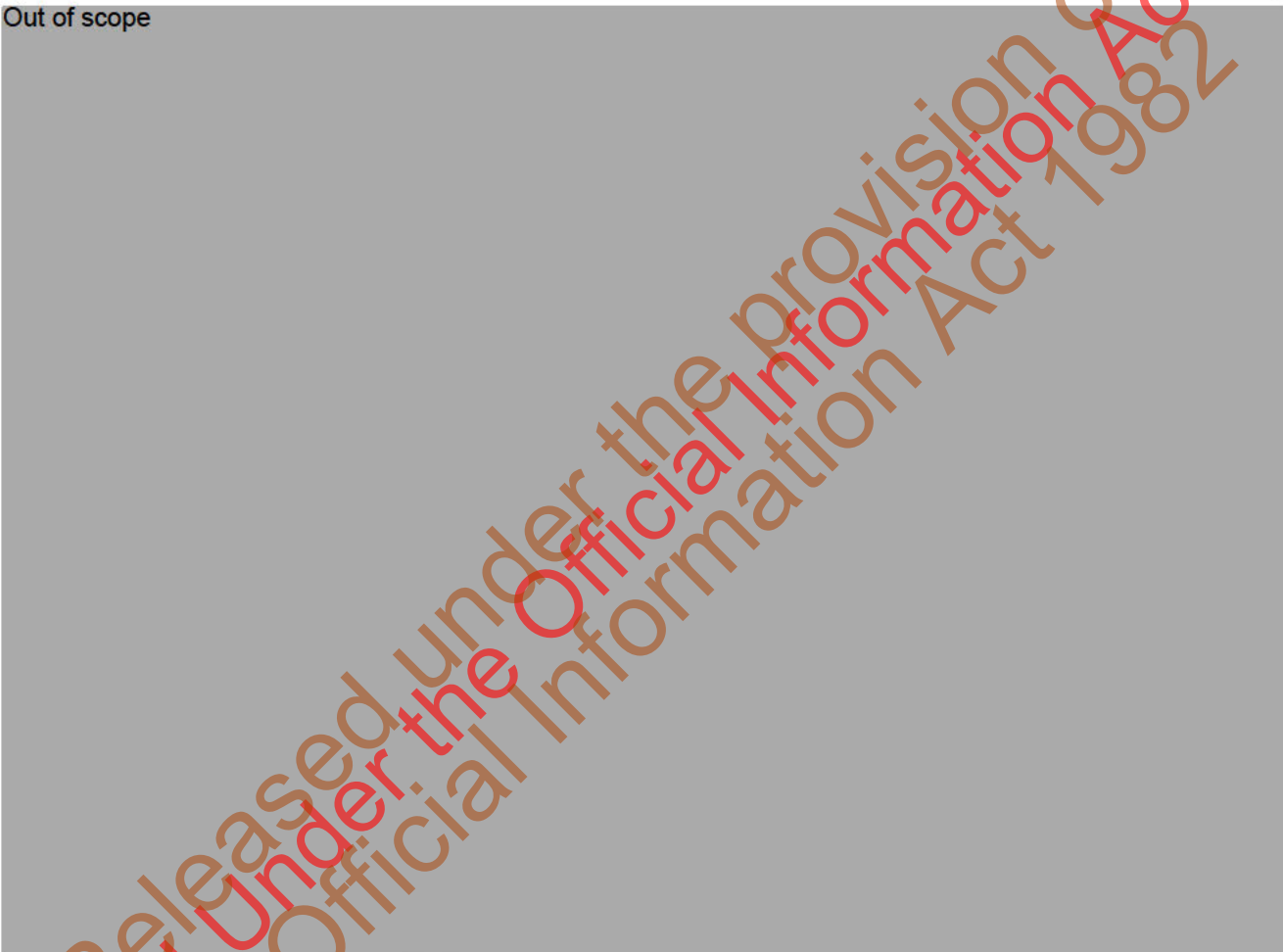
Hon James Shaw

**Minister for Climate Change**

S6(a)



Out of scope



Our Climate Change Response (Zero Carbon) Amendment Act 2019 legislates a 2050 emissions reduction target consistent with the 1.5°Celsius threshold, and our 2030 NDC is a waypoint on a journey toward this long-term goal. In keeping with the science, New Zealand is emphasising reductions in the long-lived gases that largely determine long-term warming of the climate. Our 2050 target is therefore set to reduce: emissions of biogenic methane to 24-47 percent below 2017 levels by 2050, and net emissions of all other greenhouse gases to zero by 2050. It also includes an interim step to reduce biogenic methane emissions to at least 10 percent below 2017 levels by 2030. New Zealand correspondingly will need to contribute a significant reduction in long-lived gases (estimated at around 52 percent after projecting for forestry removals) over the period 2021 to 2030.

<sup>11</sup> New Zealand's 2008-2012 target was to reduce emissions to 1990 levels on average over the Kyoto Protocol First Commitment Period; New Zealand's 2013-2020 target is to reduce emissions by 5 percent below 1990 levels by 2020.

**Element: How the Party considers that its NDC is fair and ambitious in the light of its national circumstances**

Sub-element:	Information:
<p>How the Party considers that its NDC contribution is fair and ambitious in the light of its national circumstances.</p>	<p>New Zealand is responsible for low levels of emissions now and historically (0.17 percent of global gross emissions in 2017). Countries which each individually contribute one per cent or less of global emissions account for nearly a quarter of total emissions. Therefore, New Zealand's efforts matter.</p> <p>The likely cost to the New Zealand economy of meeting this NDC budget in terms of GDP is high relative to many other parties. This is due to a number of factors, such as the existing high level of renewable electricity generation (80-85%), and the make-up of our emissions profile, where almost half of our total emissions originate from agriculture.</p> <p>New Zealand's 2050 target places an emphasis on long-lived gases. The target is to reduce global greenhouse gas (GHG) emissions to net zero by 2050 (excluding biogenic methane for which the target is 24-47%).</p> <p>The outcome we seek for the 'form' or 'type' of contribution we deliver is an NDC that provides a fair, comparable and transparent representation of New Zealand's effort on climate change.</p>



	Different forms of contribution will better facilitate the accurate measurement of reductions to track progress towards a country's global goal than others, or more clearly (or fairly) represent a country's "effort" (depending on their national circumstance).
Fairness considerations, including reflecting on equity:	A basket of indicators can give an idea of countries' efforts, and New Zealand looked at factors such as: national circumstances, including evolving circumstances such as population growth rates, the size of the forestry sector, the size of the agriculture sector, and access to natural resources; cost of effort (sharing), including to the economy; resource sharing, such as sharing greenhouse gas emissions, including carbon dioxide versus methane per capita; historical responsibility for climate change; income and capacity, such as the ability to afford to mitigate more emissions than others; abatement required to meet NDC headline target, and the gap between the business-as-usual emissions curve and emissions curve needed to meet the NDC target.
How the Party addressed Article 4, paragraph 3, of the Paris Agreement (i.e. how NDC target represents progression and highest possible ambition):	New Zealand's NDC target represents a progression beyond New Zealand's current 2020 target in terms of headline number, cost and emissions impact, reduction from business-as-usual emissions, improvement in emissions efficiency of the New Zealand economy and a stronger focus on domestic emissions reductions.
How the Party has addressed Article 4, paragraph 6, of the Paris Agreement (i.e. LD and small island developing states may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances):	N/A - noting Tokelau's preference to append an NDC to New Zealand's.
<b>Element: How the NDC contributes towards achieving the objective of the Convention as set out in its Article 2</b>	
<b>Sub-element:</b>	<b>Information:</b>
<i>Article 2 of the Convention</i> (i.e. stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system):	New Zealand welcomed the IPCC's <i>Special Report on global warming of 1.5°C</i> , and the urgency of climate action that we have a duty to respond to.  New Zealand's target choice should primarily be guided by the best available scientific knowledge. The IPCC is the definitive source of evidence to support climate change policy development. Its reports represent the best expert assessment of global knowledge on climate change.
How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement. (i.e. global temperature goals, including to limit global temperature to 1.5 degrees	New Zealand has a duty to respond to the IPCC's conclusion that limiting global warming to 1.5°C "would require rapid and far-reaching transitions" in most human activities; as well as the inclusion of emissions pathways consistent with limiting warming to 1.5 degrees, which have

Celsius):	<p>gained considerable influence as representing what is “necessary” to achieve the aim of the Paris Agreement.</p> <p>The report provided evidence to inform the 2050 target in New Zealand’s Climate Change Response (Zero Carbon) Amendment Act, which will be a significant challenge requiring early and more ambitious action across all sectors. The Act has legislated a domestic target out to 2050 that is consistent with 1.5 degrees Celsius.</p> <p>The NDC contributes towards these Articles by acknowledging the contribution of the Talanoa Dialogue.</p> <p>Additionally, there is a planned proposal to request the Climate Change Commission to review our NDC to provide advice about New Zealand’s targets (and the NDC target).</p>
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## Changes to Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement following ministerial consultation

Date Submitted:	27/02/2020	Tracking #: 2020-B-06507	
Security Level	RESTRICTED	MfE Priority:	Urgent

	Action sought:	Response by:
To Hon James Shaw, Minister for Climate Change	<p><b>Note</b> the changes to the Cabinet paper following ministerial consultation</p> <p><b>Discuss</b> with MfE/MFAT officials on Monday 02 March</p> <p><b>Lodge</b> the Cabinet paper by 05 March</p>	02 March 2020

Actions for Minister's Office Staff	<b>Return</b> the signed report to MfE
Number of appendices and attachments	Titles of appendices and attachments: 1. Cabinet paper and narrative: Updating New Zealand's nationally determined contribution under the Paris Agreement

### Ministry for the Environment contacts

Position	Name	Cell phone	1 <sup>st</sup> contact
Principal Author	Adam Bradshaw		
Responsible Manager	Sarah Deblock	0220124772	✓
- Director	Roger Lincoln	0272907625	

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**Changes to Cabinet paper on updating New Zealand's nationally determined contribution under the Paris Agreement following ministerial consultation**

Out of scope



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Out of scope



Signature

Roger Lincoln  
Director  
Climate Change Directorate

Hon James Shaw  
Minister for Climate Change

Date

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Restricted

Office of the Minister for Climate Change

Chair, Cabinet Environment, Energy and Climate Committee

Updating New Zealand's Nationally Determined Contribution under the Paris Agreement

Out of scope



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Out of scope

S6(a)

Out of scope

### **Background**

*New Zealand is committed to ambitious climate action and the Paris Agreement*

14. The Paris Agreement was designed to ensure that all countries, no matter how big or small, contribute to keeping average global temperature increase to well below 2°C above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5°C.
15. NDCs represent each country's contribution to these global temperature limits. NDCs are required to show a country's highest level of ambition to reduce global emissions, a progression on previous efforts, and to be more ambitious over time.
16. New Zealand's NDC represents our international contribution to mitigating climate change. It is a waypoint on a long-term journey towards the 2050 targets we set under the Zero Carbon Act, which are consistent with 1.5°C. It also sets us on a path aligned with the Paris Agreement's Article 4(1) objective for Parties to aim for carbon neutrality – balancing emissions and removals – in the second half of the century.
17. New Zealand's NDC is to reduce emissions to 30 per cent below 2005 levels by 2030. New Zealand's projected total emissions across the period 2021-2030 are 783 Mt CO<sub>2</sub>-e,



Out of scope

## Analysis

### *Approach to updating New Zealand's NDC in 2020*

26. New Zealand's NDC is short and succinct. Its structure has been modelled on how Parties to the Kyoto Protocol communicated their commitments. However, our existing NDC is not well understood. Public commentators often mischaracterise the nature and ambition of our NDC, which is then reported in domestic media coverage.<sup>7</sup>
27. Some Parties to the Paris Agreement have used, or plan to use, their NDCs to describe their approach to climate action, beyond an emissions reduction target. I propose that New Zealand enhance its NDC by providing increased information on our climate action, and its contribution towards limiting global temperature rise to 1.5°C.
28. The proposed update of the NDC was guided by the following principles:
- New Zealand's commitment to limiting global temperature rise to 1.5°C (rather than 2°C);
  - The NDC should effectively communicate the challenging nature of New Zealand's contribution to the global effort including through our domestic policies and measures;
  - The NDC should be enduring in nature and reflect the fact that domestic policies and actions may change or evolve over time, for example in response to the independent Climate Change Commission's advice, or due to technological advancements;
  - The NDC should be clearly communicated to ensure understanding of the technical elements of the NDC and how these enhance ambition, for example the implications of taking an absolute emissions budget approach, rather than a single year target;
  - The NDC should not prejudice how New Zealand will meet our NDC, but should continue to keep the option of using international carbon markets open for future governments, as a way to supplement domestic action.

### *Proposed NDC update*

Out of scope

<sup>7</sup> For example, Climate Action Tracker's report on New Zealand mischaracterises New Zealand's NDC to represent a weaker emissions reduction target than it actually is, by representing it as a 2030 single year target instead of a 2021-2030 budget period.

30. The key messages that I propose to communicate S6(a) are summarised below:

- New Zealand is committed to playing its part and taking action on climate change as part of the global effort through the Paris Agreement and in line with the IPCC Special Report on 1.5°C and the Talanoa Dialogue Call to Action.

S6(a)

- The 2050 targets will drive New Zealand's transition to a low emissions, climate resilient future and support New Zealanders to make decisions that will reduce emissions and promote climate resilience. Our NDC is our international contribution to climate change and a waypoint on a long-term journey towards our 2050 targets.
- Our domestic mitigation targets address long-lived and short-lived gases appropriately, considering scientific understanding of their different effects. We will take strong action on long-lived gases as these emissions remain in the atmosphere for centuries, increasing in concentration as long as the gases continue to be emitted and largely determine long-term warming.
- New Zealand's national circumstances directly relate to our emissions profile. New Zealand's population and economy are predicted to continue growing. The largest contributors to these emissions are the agriculture (48 per cent) and energy (41 per cent) sectors. New Zealand has a high proportion of renewable electricity generation (80 to 85 per cent).
- Achieving New Zealand's NDC target will be challenging. New Zealand's NDC under the Paris Agreement is to reduce emissions to 30 per cent below 2005 levels by 2030. As the NDC is an absolute emissions reduction target managed using an emissions budget approach, this means New Zealand will be responsible for reducing emissions across the entire NDC period, 2021-2030. This would make us responsible for reducing emissions by 182 million tonnes, which equates to around a quarter of our projected total emissions between now and 2030.<sup>8</sup>
- The 2021-2030 NDC is a waypoint on a journey toward the long-term 2050 target. New Zealand is set to reduce emissions of biogenic methane to 24-47 per cent below 2017 levels by 2050, and net emissions of all other greenhouse gases to zero by 2050. This includes an interim step to reduce biogenic methane emissions to at least 10 per cent below 2017 levels by 2030. Correspondingly we will need to contribute a significant reduction in long-lived gases, estimated at around 43 per cent below 2017 levels, by 2030 after accounting for projected forestry removals. Note that this figure is highly sensitive to updates and it does not represent a new target for 2030.

Out of scope

<sup>8</sup> Based on projections in New Zealand's 4<sup>th</sup> Biennial Report, 2019.

Out of scope



48. I believe that I have consulted extensively on the framework for delivering New Zealand's climate action out to 2050, which culminated in the Zero Carbon Act's near unanimous adoption late last year. I view the NDC as a component of this wider climate policy framework, and a waypoint on our transition to a low emissions, climate resilient Aotearoa. My proposal is therefore to enhance the NDC with information reflecting the matters covered by the Zero Carbon Bill consultation without undertaking further comprehensive consultation.

Out of scope





## Recommendations

Out of scope

8. **Note** that the Minister for Climate Change has requested the Climate Change Commission to provide advice and recommendations to the Government on whether the NDC should change to bring it in line with the global 1.5°C temperature goal and, if so, how;
9. **Request** the Minister for Climate Change to return to Cabinet in early 2021 following receipt of the Climate Change Commission's advice on the NDC;

Out of scope

Authorised for lodgement.

Hon James Shaw

Minister for Climate Change



Appendix 2: Contextual information accompanying New Zealand's NDC

S6(a)

Out of scope

Our Climate Change Response (Zero Carbon) Amendment Act 2019 legislates a 2050 emissions reduction target consistent with the 1.5°C threshold, and our 2030 NDC is a waypoint on a journey toward this long-term goal. In keeping with the science, New Zealand is emphasising reductions in the long-lived gases that largely determine long-term warming of the climate. Our 2050 target is therefore set to reduce: emissions of biogenic methane to 24-47 per cent below 2017 levels by 2050, and net emissions of all other greenhouse gases to zero by 2050. It also includes an interim step to reduce biogenic methane emissions to at least 10 per cent below 2017 levels by 2030. New Zealand correspondingly will need to contribute a significant reduction in long-lived gases (currently

<sup>11</sup> New Zealand's 2008-2012 target was to reduce emissions to 1990 levels on average over the Kyoto Protocol First Commitment Period; New Zealand's 2013-2020 target is to reduce emissions by 5 per cent below 1990 levels by 2020.

estimated at around 43 per cent below 2017 levels, by 2030 after accounting for projected forestry removals.

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Out of scope

**Element: How the Party considers that its NDC is fair and ambitious in the light of its national circumstances**

Sub-element:	Information:
How the Party considers that its NDC contribution is fair and ambitious in the light of its national circumstances:	<p>New Zealand is responsible for low levels of emissions now and historically (0.17 per cent of global gross emissions in 2017). Countries which each individually contribute one per cent or less of global emissions account for nearly a quarter of total emissions. Therefore, New Zealand's efforts matter.</p> <p>The likely cost to the New Zealand economy of meeting this NDC budget in terms of GDP is high relative to many other parties. This is due to a number of factors, such as the existing high level of renewable electricity generation (80-85 per cent), and the make-up of our emissions profile, where almost half of our total emissions originate from agriculture.</p> <p>New Zealand's 2050 target places an emphasis on long-lived gases. The target is to reduce global greenhouse gas (GHG) emissions to net zero by 2050 (excluding biogenic methane for which the target is 24-47 per cent below 2017 levels).</p> <p>The outcome we seek for the 'form' or 'type' of contribution we deliver is an NDC that provides a fair, comparable and transparent representation of New Zealand's effort on climate change.</p>



	Different forms of contribution will better facilitate the accurate measurement of reductions to track progress towards a country's global goal than others, or more clearly (or fairly) represent a country's "effort" (depending on their national circumstance).
Fairness considerations, including reflecting on equity:	A basket of indicators can give an idea of countries' efforts, and New Zealand looked at factors such as: national circumstances, including evolving circumstances such as population growth rates, the size of the forestry sector, the size of the agriculture sector, and access to natural resources; cost of effort (sharing), including to the economy; resource sharing, such as sharing greenhouse gas emissions, including carbon dioxide versus methane per capita; historical responsibility for climate change; income and capacity, such as the ability to afford to mitigate more emissions than others; abatement required to meet NDC headline target, and the gap between the business-as-usual emissions curve and emissions curve needed to meet the NDC target.
How the Party addressed Article 4, paragraph 3, of the Paris Agreement (i.e. how NDC target represents progression and highest possible ambition):	New Zealand's NDC target represents a progression beyond New Zealand's current 2020 target in terms of headline number, cost and emissions impact, reduction from business-as-usual emissions, improvement in emissions efficiency of the New Zealand economy and a stronger focus on domestic emissions reductions.
How the Party has addressed Article 4, paragraph 6, of the Paris Agreement (i.e. LD and small island developing states may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances):	N/A – noting Tokelau's preference to append an NDC to New Zealand's.
<b>Element: How the NDC contributes towards achieving the objective of the Convention as set out in its Article 2</b>	
<b>Sub-element:</b>	<b>Information:</b>
<i>Article 2 of the Convention</i> (i.e. stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system):	New Zealand welcomed the IPCC's <i>Special Report on global warming of 1.5°C</i> , and the urgency of climate action that we have a duty to respond to.  New Zealand's target choice should primarily be guided by the best available scientific knowledge. The IPCC is the definitive source of evidence to support climate change policy development. Its reports represent the best expert assessment of global knowledge on climate change.
How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement. (i.e. global temperature goals, including to limit global temperature to 1.5°C):	New Zealand has a duty to respond to the IPCC's conclusion that limiting global warming to 1.5°C "would require rapid and far-reaching transitions" in most human activities; as well as the inclusion of emissions pathways consistent with limiting warming to 1.5°C, which have



	<p>gained considerable influence as representing what is “necessary” to achieve the aim of the Paris Agreement.</p> <p>The report provided evidence to inform the 2050 target in New Zealand’s Climate Change Response (Zero Carbon) Amendment Act, which will be a significant challenge requiring early and more ambitious action across all sectors. The Act has legislated a domestic target out to 2050 that is consistent with 1.5°C.</p> <p>The NDC contributes towards these Articles by acknowledging the contribution of the Talanoa Dialogue.</p> <p>Additionally, there is a planned proposal to request the Climate Change Commission to review our NDC to provide advice about New Zealand’s targets (and the NDC target).</p>
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**Updated communications plan for the announcement on the NDC**

**April 2020**

Out of scope

[Redacted]

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**Key messages for announcement** (tentative date of 22/23 April)

Released Under the Official Information Act 1982

1. The Minister for Climate Change has asked the Climate Change Commission to review New Zealand's NDC to ensure its compatibility with limiting global warming to 1.5°C degrees.
2. If advice concludes that it is not compatible, the Commission will provide recommendations on how to align the NDC with the global 1.5°C temperature goal.
3. The independence of the Commission's advice will provide assurance to New Zealanders and the international community that our commitment to climate action is real and our ambition is high.
4. New Zealand has communicated this process to the UNFCCC Secretariat.
5. While New Zealand's current NDC is already challenging, we consider this process of reviewing our NDC in light of an effort to limit warming to 1.5°C degrees will best enable New Zealand to support global ambition for the Paris Agreement.
6. New Zealand's current NDC target is to reduce emissions to 30% below 2005 levels across the period 2021 – 2030.
  - Our NDC needs to represent a country's highest possible ambition. New Zealand is committed to taking action on climate change that is consistent with the global effort to limit warming to 1.5°C. This is why we are asking the Climate Change Commission to advise us on the level of ambition of the NDC.

S6(a)

- Our NDC target will be managed using an emissions budget approach. This sets a national budget (or limit) of greenhouse gases able to be emitted for the period 2021 – 2030. The NDC states that the emissions reduction target will likely be met through a combination of afforestation, domestic emissions reductions, and access to international carbon markets with environmental integrity.
- This is a different approach to the 2050 target, which is a point year target. By comparison, point year targets represent a goal for the target year only, e.g. net zero emissions in 2050.
- The NDC target was determined in 2015 following Māori, stakeholder and public consultation, as well as economic modelling of the impact of the NDC on our economy and households. The process further considered what would represent maximum possible ambition for New Zealand's contribution, taking into account factors like, national circumstances, historical responsibility for climate change, our status as a developed country, the cost of effort, carbon dioxide emissions per capita versus all-greenhouse gas per capita and national GDP.

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Out of scope

13	What makes New Zealand's NDC challenging?	New Zealand's NDC already represents a significant challenge to reduce our emissions.
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		<p>Projected net emissions for the period 2021-2030 are 698Mt CO<sub>2</sub>-e. This means the current abatement task corresponds to 181.90 Mt CO<sub>2</sub>-e over 2021-2030.<sup>1</sup></p> <p>To put this figure in context, this is more than two times New Zealand's gross emissions in 2017.<sup>2</sup> It is also more than the projected emissions for the transport over the entire NDC period.<sup>3</sup> We have a big task ahead of us.</p> <p>The Commission will provide advice on whether the NDC is compatible with the temperature goal of 1.5°C</p>
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Out of scope

#### Back pocket questions and answers

Question	Answer
<p>Is New Zealand's NDC compatible with the 1.5°C scenario?</p>	<p>The Commission will re-evaluate the NDC in light of that objective</p> <p>MfE officials' initial findings are that New Zealand's NDC is consistent with pathways limiting warming to 1.5°C with "high overshoot" in the IPCC Special Report on 1.5°C. In these scenarios, the global mean temperature exceeds 1.5°C above preindustrial levels temporarily before dropping back to below the 1.5°C threshold. It is not consistent with pathways limiting warming to 1.5°C with "no or limited overshoot".</p> <p>In light of these findings, the Minister for Climate Change has asked the Climate Change Commission to review the NDC and submit a final report by <b>XX</b> 2021. The Commission will provide advice on whether the NDC is compatible with the global 1.5°C temperature goal; and if advice concludes that it is not compatible, recommendations on how to align the NDC with the global 1.5°C temperature goal, will be provided.</p>

<sup>1</sup> Includes Tokelau's projected emissions contribution of 0.03Mt CO<sub>2</sub>-e and excludes projected emissions removals from forestry activities

<sup>2</sup> Gross emissions in 2017 were 80.85 Mt CO<sub>2</sub>-e as reported in *New Zealand's 2019 Greenhouse Gas Inventory* (April 2019)

<sup>3</sup> Emissions from transport for 2021-2030 are projected to total 156.85 Mt. This value does not include emissions from international transport to/from New Zealand. For more information see *New Zealand's Fourth Biennial Report* (December 2019).

<p>Is the Government not pushing all difficult decisions to the Commission, when the advice it has received is that the NDC is not consistent with the temperature goal in the ZCA?</p>	<p>Any decision taken by Cabinet to adjust the NDC target needs to be properly considered, with a detailed assessment of the NDC in light of the change in circumstances since the NDC was first submitted in 2016 (e.g. IPCC 1.5°C report, Zero Carbon Act etc.). The Minister has asked the Commission to review the NDC and its compatibility with the global 1.5°C temperature goal, and recommend any changes.</p> <p>The Commission was established to provide independent expert advice to the Government and to monitor and review its progress towards emissions reduction and adaptation goals. It is not a decision making body. Because the Commission was not established until December last year it was not possible to ask for the assessment in time S6(a)</p>
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Out of scope

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**Updated communications plan for the announcement on the NDC**

**April 2020**

Out of scope

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**Key messages for announcement** (tentative date of 22/23 April)

Released Under the Official Information Act 1982

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2. If advice concludes that it is not compatible, the Commission will provide recommendations on how to align the NDC with the global 1.5°C temperature goal.
3. The independence of the Commission's advice will provide assurance to New Zealanders and the international community that our commitment to climate action is real and our ambition is high.
4. New Zealand has communicated this process to the UNFCCC Secretariat.
5. While New Zealand's current NDC is already challenging, we consider this process of reviewing our NDC in light of an effort to limit warming to 1.5°C degrees will best enable New Zealand to support global ambition for the Paris Agreement.
6. New Zealand's current NDC target is to reduce emissions to 30% below 2005 levels across the period 2021 – 2030.
  - Our NDC needs to represent a country's highest possible ambition. New Zealand is committed to taking action on climate change that is consistent with the global effort to limit warming to 1.5°C. This is why we are asking the Climate Change Commission to advise us on the level of ambition of the NDC.

S6(a)

- Our NDC target will be managed using an emissions budget approach. This sets a national budget (or limit) of greenhouse gases able to be emitted for the period 2021 – 2030. The NDC states that the emissions reduction target will likely be met through a combination of afforestation, domestic emissions reductions, and access to international carbon markets with environmental integrity.
- This is a different approach to the 2050 target, which is a point year target. By comparison, point year targets represent a goal for the target year only, e.g. net zero emissions in 2050.
- The NDC target was determined in 2015 following Māori, stakeholder and public consultation, as well as economic modelling of the impact of the NDC on our economy and households. The process further considered what would represent maximum possible ambition for New Zealand's contribution, taking into account factors like, national circumstances, historical responsibility for climate change, our status as a developed country, the cost of effort, carbon dioxide emissions per capita versus all-greenhouse gas per capita and national GDP.

Out of scope

	Risk	Mitigation
Out of scope		
2	New Zealand's NDC may be judged to not be challenging enough.	<p>Present information showing how it is ambitious, and emphasise it is being reviewed independently, so could change.</p> <p>Provide context with other countries' commitments and our circumstances.</p> <p>Identify potentially critical parties and brief them on underlying commitment. New Zealand can work to ensure judgements are factually based, but cannot fully mitigate against a judgement on whether the NDC is ambitious enough.</p>

S6(a)



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Out of scope



13	What makes New Zealand's NDC challenging?	New Zealand's NDC already represents a significant challenge to reduce our emissions.
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		<p>Projected net emissions for the period 2021-2030 are 698Mt CO<sub>2</sub>-e. This means the current abatement task corresponds to 181.90 Mt CO<sub>2</sub>-e over 2021-2030.<sup>1</sup></p> <p>To put this figure in context, this is more than two times New Zealand’s gross emissions in 2017.<sup>2</sup> It is also more than the projected emissions for the transport over the entire NDC period.<sup>3</sup> We have a big task ahead of us.</p> <p>The Commission will provide advice on whether the NDC is compatible with the temperature goal of 1.5°C.</p>
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Out of scope

### Back pocket questions and answers

Question	Answer
<p>Is New Zealand’s NDC compatible with the 1.5°C scenario?</p>	<p>The Commission will re-evaluate the NDC in light of that objective</p> <p>MfE officials’ initial findings are that New Zealand’s NDC is consistent with pathways limiting warming to 1.5°C with “high overshoot” in the IPCC Special Report on 1.5°C. In these scenarios, the global mean temperature exceeds 1.5°C above preindustrial levels temporarily before dropping back to below the 1.5°C threshold. It is not consistent with pathways limiting warming to 1.5°C with “no or limited overshoot”.</p> <p>In light of these findings, the Minister for Climate Change has asked the Climate Change Commission to review the NDC and submit a final report alongside the Commission’s recommendations on the first three emissions budgets and advice on the first emissions reduction plan. The Commission will provide advice on whether the NDC is compatible with the global 1.5°C temperature goal; and if advice concludes that it is not compatible,</p>

<sup>1</sup> Includes Tokelau’s projected emissions contribution of 0.03Mt CO<sub>2</sub>-e and excludes projected emissions removals from forestry activities

<sup>2</sup> Gross emissions in 2017 were 80.85 Mt CO<sub>2</sub>-e as reported in *New Zealand’s 2019 Greenhouse Gas Inventory* (April 2019)

<sup>3</sup> Emissions from transport for 2021-2030 are projected to total 156.85 Mt. This value does not include emissions from international transport to/from New Zealand. For more information see *New Zealand’s Fourth Biennial Report* (December 2019).

	<p>recommendations on how to align the NDC with the global 1.5°C temperature goal, will be provided.</p>
<p>Is the Government not pushing all difficult decisions to the Commission, when the advice it has received is that the NDC is not consistent with the temperature goal in the ZCA?</p>	<p>Any decision taken by Cabinet to adjust the NDC target needs to be properly considered, with a detailed assessment of the NDC in light of the change in circumstances since the NDC was first submitted in 2016 (e.g. IPCC 1.5°C report, Zero Carbon Act etc.). The Minister has asked the Commission to review the NDC and its compatibility with the global 1.5°C temperature goal, and recommend any changes</p> <p>The Commission was established to provide independent expert advice to the Government and to monitor and review its progress towards emissions reduction and adaptation goals. It is not a decision making body. Because the Commission was not established until December last year it was not possible to ask for the assessment in time to inform this update of the NDC, due to our commitment to submit the update in 2020.</p>
<p>Given the 2050 target is consistent with 1.5°C, and the 2030 target is considered more ambitious than the 2050 target, why does NZ need an assessment from the Commission to assess the compatibility of the NDC with the global temperature goal?</p>	<p>We assessed consistency with 1.5°C by comparing our targets to emissions pathways in the IPCC Special Report on 1.5°C. In those pathways, CO2 emissions reach net zero around 2050. However, emissions do not decrease linearly; they decrease quickly initially and more slowly as they approach net zero. This means that, although our 2050 target is consistent, and our 2030 target requires steeper reductions than our 2050 target, it may still not be consistent with the 1.5°C goal as it is not as steep as reductions in the global cost-effective pathways assessed in the IPCC report.</p>

Out of scope