

From: s 9(2)(a)
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Draft terms of reference - Climate Change Commission request
Date: Tuesday, 25 February 2020 1:11:11 pm
Attachments: [image001.png](#)

Hi s 9(2)(a)

Yes, I am free all afternoon tomorrow to meet. Could you please send an invitation to confirm? I will organise participation from MfE side. Happy to meet at the Commission or MfE.

Cheers,

s 9(2)(a)

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Tuesday, 25 February 2020 12:58 pm
To: s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Subject: Re: Draft terms of reference - Climate Change Commission request

Hi s 9(2)(a)

Thank you so much for getting this to us so promptly! We'll aim to get you some comments back ASAP. Any chance you could meet tomorrow afternoon?

Warm regards,
s 9(2)(a)

Get [Outlook for iOS](#)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Tuesday, February 25, 2020 12:34:28 PM
To: s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Subject: Draft terms of reference - Climate Change Commission request

Kia ora s 9(2)(a)

Thanks for the call earlier.

As requested, please find attached a copy of the draft terms of reference following the Minister's letter to Dr Rodd Carr, indicating his intention to request advice from the Commission on two matters relating to climate change. The Commission's timely feedback on this draft will be much appreciated. I am happy to talk/meet to hash out some of the finer details of the TOR in advance of the 3 March meeting between Dr Carr and Minister Shaw.

If you have any questions, please let me know.

Many thanks,

s 9(2)(a)

From: s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Sent: Tuesday, 25 February 2020 10:15 am
To: s 9(2)(a) <[redacted]@mfe.govt.nz>
Cc: s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@climatecommission.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>
Subject: Re: Kia Ora colleagues - quick question

Thanks s 9(2)(a) [redacted] I'll give you a call this morning. We're keen to put in a couple of appointments in to discuss the terms and also get a version as soon as possible.

Nga mihi,

s 9(2)(a)

Get [Outlook for iOS](#)

From: s 9(2)(a) <[redacted]@mfe.govt.nz>
Sent: Tuesday, February 25, 2020 9:07:15 AM
To: s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Cc: s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@climatecommission.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>; s 9(2)(a) <[redacted]@mfe.govt.nz>
Subject: RE: Kia Ora colleagues - quick question

Hi s 9(2)(a) [redacted]

Yes, I am working on both elements of the request. I suggest that we chat briefly today to discuss the TOR.

Copying in Chris Holland for his awareness after our meeting yesterday.

Thanks,

s 9(2)(a)

s 9(2)(a)

23 Kate Sheppard Place, PO Box 10362, Wellington 6143

MfE_logo

From: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>
Sent: Tuesday, 25 February 2020 7:21 am
To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>;
s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Cc: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Subject: Re: Kia Ora colleagues - quick question

Thanks all! Appreciate your help. Assuming s 9(2)(a) is working on both the methane and the NDC elements of the request?

Warm regards,
s 9(2)(a) <[REDACTED]>

Get [Outlook for iOS](#)

From: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Sent: Tuesday, February 25, 2020 7:02:51 AM
To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Cc: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Subject: Re: Kia Ora colleagues - quick question

s 9(2)(a) <[REDACTED]> is working on this (copied in)

From: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Sent: Tuesday, February 25, 2020 6:21:03 AM
To: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Cc: s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Subject: RE: Kia Ora colleagues - quick question

Hi s 9(2)(a) <[REDACTED]>

Either s 9(2)(a) <[REDACTED]> or I can touch base in the first instance. s 9(2)(a) <[REDACTED]> is across the detail of the request on the NDC.

I'm out of the office today but can chat later this afternoon if it suits.

s 9(2)(a) <[REDACTED]>

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Monday, 24 February 2020 4:50 PM
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Subject: Kia Ora colleagues - quick question

MFE CYBER SECURITY WARNING
This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Just touching base to ask who best to liaise with on the terms of reference re methane and NDC items

Nga mihi,
s 9(2)(a)

Get [Outlook for iOS](#)

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

Ministerial request for advice: Draft Terms of Reference

Climate Change Commission: advice and recommendations to the Minister for Climate Change

Draft Terms of Reference

In December 2019, the Minister for Climate Change announced the establishment of the Climate Change Commission (the Commission). 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. Membership of the Commission is set out in Annex 1.

On 18 February 2020, the Minister for Climate Change, sent a letter to the Chair of the Climate Change Commission (Annex 2), Dr Rod Carr, indicating his intention to request advice from the Commission on two matters relating to climate change under section 5K of the Climate Change Response Act 2002 (the CCRA):

1. Advice on the 2050 target for biogenic methane; and
2. Advice on New Zealand's first Nationally Determined Contribution (NDC) under the Paris Agreement

Accordingly, it is expected that the Commission will provide to the Minister for Climate Change, two reports focusing on the following matters:

- (i) The **2050 target for biogenic methane** (section 5Q(1)(b) of the CCRA):
 - a. **advice** on whether the 2050 target for biogenic methane emissions should be narrowed;
 - b. **advice** on whether the 2050 target for biogenic methane emissions is consistent with the purpose of the CCRA;
 - c. **recommendations** for a precise range for the 2050 target, consistent with the purpose of the CCRA.

The purpose of providing advice on the 2050 target for biogenic methane is to clarify whether the 24-47% reduction range should be narrowed so as to provide more certainty for planning and/or investment purposes, and whether the existing reductions in biogenic methane emissions are consistent with the purpose of the CCRA.

- (ii) **New Zealand's first Nationally Determined Contribution under the Paris Agreement:**
 - a. **advice** on whether the NDC is consistent with the global 1.5°C temperature goal;
 - b. **advice** on whether the NDC needs to be revised to make it consistent with the global 1.5°C temperature goal;

- c. **advice** on the whether New Zealand should use GWP-100 metric values from the IPCC's 5th Assessment Report (2013) with or without carbon cycle feedback for target accounting, and the implications of this for targets under the Paris Agreement;
- d. **recommendation** of changes to the NDC to ensure consistency with the global 1.5°C temperature goal;
- e. **recommendation** of which GWP-100 metric value is most appropriate to use, and why.

The purpose of providing advice on New Zealand's first NDC under the Paris Agreement is to understand whether the NDC is consistent with the global 1.5°C temperature goal. If it is not consistent with the global temperature goal, recommendations on how it needs to be changed to be consistent, should be provided.

The purpose of providing advice on the GWP-100 metric values is to ensure that New Zealand is using the internationally accepted method for target accounting.

Mode of work

3. Consultation consistent with s 5N of the CCRA, will take place in the fourth quarter of 2020. The Committee is expected to engage with the public, iwi/hapu/Māori, industry, technical experts, special interest groups, sector lead groups and other interested parties;
4. The Commission will be able to draw upon a range of people from government agencies to inform specific elements of the work being undertaken;

Expected timeline

The final report is to be provided to the Minister for Climate Change at the same time that the Commission recommends the first three emissions budgets and advises on the first emissions reduction plan, that is, no later than 1 February 2021.

A **first draft report by October 2020**. The first draft report should include advice on the feasibility of setting a precise 2050 target for biogenic methane. Further, advice on whether New Zealand's NDC is consistent with the global 1.5°C temperature goal and, if not, how it should change.

A **second draft report by December 2020**. In light of advice provided in the first draft report, the second draft report should provide recommendations for how New Zealand can ensure its 2050 target for biogenic methane is consistent with the purpose of the CCRA, and provide a level of certainty for New Zealand stakeholders.

Recommendations should also be provided on whether the NDC should change to bring it in line with the global 1.5°C temperature goal.

If the second draft report recommends that the 2050 target and/or the NDC target should change, implications for New Zealand should be identified.

A **final report, no later than 1 February 2021**, with final advice and recommendations. The final report should provide a range of options for consideration.

Reporting

5. Under s 5L (2) of the CCRA, the Minister for Climate Change is required to table the final report with the House of Representatives. The Commission must make the document publicly available as soon as practicable after it is presented to the House

s
9(2)
(a)

Comment This general date was suggested following a meeting with MfE and Commission officials on 24/02/2020, and is meant to align with pre-planned engagement.

of Representatives, but no later than 20 working days after providing it to the Minister (even if the document has not been presented to the House by that date).

Annex 1: Membership of the Climate Change Commission

- Dr Rodd Car (Chairperson)
- Ms Lisa Tumahai (Deputy Chairperson)
- Dr Harry Clark
- Dr Judy Lawrence
- Professor Nicola Shadbolt
- Ms Catherine Leining
- Professor James Renwick

Annex 2: Letter from Hon James Shaw, Minister for Climate Change, to Rod Carr, Chair of the Climate Change Commission

[to be inserted]

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To: [REDACTED]
Cc:
Subject: RE: Draft terms of reference for CCC
Date: Monday, 2 March 2020 12:06:32 pm

Thanks s 9(2)(a)

How about we meet at 12.30 as previously planned and finalise the TOR just so we're both clear on what the Minister wants and the process moving forward.

I have no issues with either of the sentences you propose below.

From: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>
Sent: Monday, 2 March 2020 11:54 am
To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Cc: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>
Subject: RE: Draft terms of reference for CCC

Thanks s 9(2)(a)

Our concerns were just to ensure that that the Commission didn't *have* to advise on a more specific target (either a range or specific number) if they considered the evidence didn't support those conclusions. The Minister's wording is helpful in that regard.

However, re-reading the sentence again, both sentences could be read as if the Commission's advice *should* include a recommendation on a more specific target (as the conditional 'any' is in the first clause and doesn't necessarily apply to the second). To avoid this can we suggest the following:

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, **such as a more specific target**.

Or

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, including **whether a more specific target would be appropriate**.

Let me know your thoughts on this. I know we are down to the fine details but I think it would be helpful for both Government and the Commission to be clear exactly what is being asked now before the work begins.

Happy to meet at 12:30 if that is still helpful.

s 9(2)(a)

From: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Sent: Monday, 2 March 2020 11:25 am

To: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>

Subject: RE: Draft terms of reference for CCC

Hi s 9(2)(a) <[REDACTED]>

The Minister had only one suggestion which related to the following point in the TOR:

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, including a narrowing of the target range.

He was clear that he is looking for specificity here, and suggested altering the sentence to say:

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, including a **more specific** target.

I recall from our conversation last week that the Commission would not come back with a specific number for the reduction of biogenic methane. I think that it is important we reflect the Ministers intention but also that we don't tie the hands of the Commission to providing a specific number – I believe that this wording should reflect this.

I am happy to talk about it as well, so just give me a call. If you are ok with this wording, perhaps we don't need the meeting today.

Cheers,

s 9(2)(a) <[REDACTED]>

From: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>

Sent: Monday, 2 March 2020 10:52 am

To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>

Subject: RE: Draft terms of reference for CCC

MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Hey s 9(2)(a) <[REDACTED]>

Did you get any feedback from the Minister over the weekend? Happy to give you a call if that would be quicker.

s 9(2)(a) <[REDACTED]>

-----Original Appointment-----

From: s 9(2)(a) <[REDACTED]@mfe.govt.nz>

Sent: Friday, 28 February 2020 3:02 pm

To: s 9(2)(a)

Subject: Draft terms of reference for CCC

When: Monday, 2 March 2020 12:30 pm-1:00 pm (UTC+12:00) Auckland, Wellington.

Where: Meetingroom EH 7D

[sending updated time that works with you, Chris]

Hi s 9(2)(a)

Feel free to forward this invitation to others at the Commission who you believe should be involved in the finalisation of the draft ToR. We will discuss any feedback from Minister Shaw and his office.

See you Monday.

s 9(2)(a)

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Draft terms of reference for CCC
Date: Tuesday, 3 March 2020 2:35:25 pm
Attachments: [Draft Terms of Reference - Climate Change Commission request.docx](#)
[Draft Terms of Reference - Climate Change Commission request.pdf](#)

Hi s 9(2)(a) thanks so much for this! Glad to hear that the meeting went well.

See attached the TORs that were sent to the office after your email this morning.

Just get in touch if you have any questions moving forward.

Thanks,
s 9(2)(a)

From: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>
Sent: Tuesday, 3 March 2020 10:54 am
To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>
Cc: s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@iccc.mfe.govt.nz>
Subject: Re: Draft terms of reference for CCC

Hi s 9(2)(a)

Just heard back from the Minister's meeting with Dr Carr this morning. Seems that both were generally comfortable with the TOR. There were some changes agreed which were:

Amend (i) a to say

(i) a advice on whether the 2050 target for biogenic methane is consistent with the global 1.5 degree temperature goal;

Delete (i) b

Amend (i) c

(i) c recommendations on any changes to the 2050 biogenic methane target, for example narrowing the target range.

Can you amend the TOR along these lines and let the office know.

Thanks

s 9(2)(a)

From: s 9(2)(a) [redacted] <[redacted]@mfe.govt.nz>
Sent: Monday, March 2, 2020 11:25 AM
To: s 9(2)(a) [redacted]
Subject: RE: Draft terms of reference for CCC

Hi s 9(2)(a) [redacted]

The Minister had only one suggestion which related to the following point in the TOR:

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, including a narrowing of the target range.

He was clear that he is looking for specificity here, and suggested altering the sentence to say:

(i) c. **recommendations** on any changes to the 2050 biogenic methane target, including a **more specific** target.

I recall from our conversation last week that the Commission would not come back with a specific number for the reduction of biogenic methane. I think that it is important we reflect the Ministers intention but also that we don't tie the hands of the Commission to providing a specific number – I believe that this wording should reflect this.

I am happy to talk about it as well, so just give me a call. If you are ok with this wording, perhaps we don't need the meeting today.

Cheers,
s 9(2)(a) [redacted]

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Climate Change Commission: advice and recommendations to the Minister for Climate Change

Draft Terms of Reference

In December 2019, the Minister for Climate Change announced the establishment of the Climate Change Commission (the Commission). 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. Membership of the Commission is set out in Annex 1.

On 18 February 2020, the Minister for Climate Change, sent a letter to the Chair of the Climate Change Commission (Appendix 1), Dr Rod Carr, indicating his intention to request advice from the Commission on two matters relating to climate change under section 5K of the Climate Change Response Act 2002 (the CCRA):

1. Advice on the 2050 target for biogenic methane; and
2. Advice on New Zealand's first Nationally Determined Contribution (NDC) under the Paris Agreement

Accordingly, it is expected that the Commission will provide to the Minister for Climate Change, advice and recommendations in the form of a report, focusing on the following matters:

- (i) The level of the **2050 target for biogenic methane** (section 5Q(1)(b) of the CCRA), including:
 - a. **advice** on whether the 2050 target for biogenic methane is consistent with the global 1.5 degree temperature goal;
 - b. **recommendations** on any changes to the 2050 biogenic methane target, for example narrowing the target range.
- (ii) **New Zealand's first Nationally Determined Contribution under the Paris Agreement:**
 - a. **advice** on whether the NDC is compatible with the global 1.5°C temperature goal;
 - b. **recommendations** on any changes to the NDC to ensure it is compatible with the global 1.5°C temperature goal.

Mode of work

The Commission must fulfil the requirements of section 5N of the CCRA, and is expected to engage with the public, iwi/hapū/Māori, industry, technical experts, special interest groups, sector lead groups and other interested parties.

The Commission will be able to draw upon a range of people from government agencies to inform specific elements of the work being undertaken.

Expected timeline

The Commission's advice on these matters in the form of a final report, is to be provided to the Minister for Climate Change at the same time that the Commission recommends the first three emissions budgets and advises on the first emissions reduction plan, that is, no later than 1 February 2021.

Reporting

Under s 5L (2) of the CCRA, the Minister for Climate Change is required to table the Commission's final report with the House of Representatives. The Commission must make the document publicly available as soon as practicable after it is presented to the House of Representatives, but no later than 20 working days after providing it to the Minister (even if the document has not been presented to the House by that date).

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Annex 1: Membership of the Climate Change Commission

- Dr Rod Carr (Chairperson)
- Ms Lisa Tumahai (Deputy Chairperson)
- Dr Harry Clark
- Dr Judy Lawrence
- Professor Nicola Shadbolt
- Ms Catherine Leining
- Professor James Renwick

Appendix 1: Letter from Hon James Shaw, Minister for Climate Change, to Rod Carr, Chair of the Climate Change Commission

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a)
Sent: November 2020 11:36 am
To: s 9(2)(a)
Cc:
Subject: [UNCLASSIFIED] RE: [IN-CONFIDENCE] Shared evidence base

[UNCLASSIFIED]

Morena s 9(2)(a)

Hope you are well.

I'm following up from the email that Karen sent you earlier. s 9(2)(a) has asked me to support the team in coordinating the Commission sharing evidence base materials with agencies.

We have come to more progress on this and I would like to share with you our approach in the next couple of weeks.

Would it be beneficial if you and I have a phone /zoom call to go over this either today or tomorrow?

Look forward to hearing from you.

Nga mihi

s 9(2)(a)



s 9(2)(a)

climatecommission.govt.nz

[UNCLASSIFIED]

From: s 9(2)(a)
Sent: Tuesday, 24 November 2020 4:32 pm
To: s 9(2)(a) [@mfe.govt.nz](mailto:s 9(2)(a)@mfe.govt.nz)
Cc: s 9(2)(a) [@climatecommission.govt.nz](mailto:s 9(2)(a)@climatecommission.govt.nz); s 9(2)(a) [@climatecommission.govt.nz](mailto:s 9(2)(a)@climatecommission.govt.nz); s 9(2)(a) [@climatecommission.govt.nz](mailto:s 9(2)(a)@climatecommission.govt.nz); s 9(2)(a) [@climatecommission.govt.nz](mailto:s 9(2)(a)@climatecommission.govt.nz)
Subject: Shared evidence base

[IN-CONFIDENCE]

Hi s 9(2)(a)

As discussed last week, we have started a process where we are sharing evidence and information with relevant agencies. We are doing this under the pending Memorandum of Understanding on the basis of forming a shared evidence base, as well as asking for a review of the chapters.

We are looking to produce two reports for consultation with broadly the structure outlined in the table below. Note this is very much a moving feast, and is subject to change in the coming weeks. The evidence we are sharing with agencies are the chapters of the more detailed Evidence Report.

I've attached the chapters that we have sent out so far. Again, this material is subject to change, we have not yet received comments from the Commissioners, and so we ask that you please don't share it outside of your team.

You'll see from what I've attached that we have shared very little of this with agencies so far. We are still refining chapters and completing analysis, but we will be sharing more in the coming weeks. We will also be streamlining the process of sharing this, with one person here in the Commission being the liaison point for this. We will make sure that you are CC'd into the emails that go out.

I know that you have particular interest in our modelling assumptions and results. We are yet to share our scenarios and pathways chapters (chapters 8 and 9 of the Evidence Report). Our team here has had several meetings with s 9(2)(a) – talking through initial scenario results and baselines. We have not yet talked through our central path, which we will use to inform our proposed emissions budgets. The key reason for this is that we are still running and refining this – it has been delayed as we've been waiting on the new projections. In the next day or so, there will also be a video of s 9(2)(a) explaining our modelling on our website (I understand s 9(2)(a) attended the session on this last week). Our modelling team will also be presenting to the Interagency Modelling Group in the coming weeks.

Draft Advice Report: advice, recommendations & key judgements (<100 pages)	Draft Evidence Report: evidence, assumptions & projections (approx. 500 pages)
<p>REPORT STRUCTURE:</p> <ol style="list-style-type: none"> 1. Aotearoa's first emissions budgets 2. The path to 2035 3. The impacts of emissions budgets on New Zealanders 4. How Aotearoa should contribute to the 1.5°C global goal? 5. Direction of policy in the Government's Emissions Reduction Plan 6. Rules for measuring progress <p>Note: the 8 pieces of advice we are required to deliver under the Act sit across various chapters in this report.</p>	<p>REPORT STRUCTURE:</p> <p><i>Introduction</i></p> <p><i>Part 1: Our place in the climate world</i></p> <ol style="list-style-type: none"> 1. The science of climate change 2. What are other countries doing? 3. How to measure progress <p><i>Part 2: Our current path</i></p> <ol style="list-style-type: none"> 4. Reducing emissions <ol style="list-style-type: none"> a. HIP b. Transport, buildings and urban c. Agriculture d. Waste 5. Removing carbon from our atmosphere 6. Māori focus* [name TBC] 7. Where are we currently headed? <p><i>Part 3: How can we reach our climate goals?</i></p> <ol style="list-style-type: none"> 8. What our future could look like 9. Which path could we take? 10. Our contribution to a global 1.5 degree world <p><i>Part 4: What this could mean for New Zealanders</i></p> <ol style="list-style-type: none"> 11. Introduction 12. How we earn our way in the world 13. Household and communities [impacts] 14. Environment and ecology [impacts] 15. The mitigation-adaptation link 16. Overall implications <p><i>Part 5: How our elected officials can make the difference</i></p>

- 17. Our approach to policy
 - 18. The shape of Aotearoa's emissions r
- Conclusion: where to from here?*

Ngā mihi,
s 9(2)(a)

**CLIMATE
CHANGE
COMMISSION**

s 9(2)(a)

W climatecommission.govt.nz

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Attachments mentioned in email of 24 Nov 2020 at 4:32 pm withheld in full under 9(2)(g)(i).

Final version of these chapter are available at: <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/draft-advice-report-and-documents/>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To:
Subject: RE: [UNCLASSIFIED] Draft Climate Change Commission Waste chapter for facts and accuracy checking
Date: Monday, 30 November 2020 1:47:00 pm
Attachments: [image002.png](#)

[UNCLASSIFIED]

Hi s 9(2)(a)

You need to send the attached version – he won't be able to see the sharepoint link I think.

Cheers,
s 9(2)(a)

[UNCLASSIFIED]

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Monday, November 30, 2020 1:32 PM
To: s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Subject: [UNCLASSIFIED] Draft Climate Change Commission Waste chapter for facts and accuracy checking

[UNCLASSIFIED]

Kia ora s 9(2)(a)

I hope this email finds you well. I am supporting s 9(2)(a) in coordinating the peer review process of our Report #2: Evidence report (see Report Structure below).

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on an confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

Please see the draft chapter – Waste *mitigation opportunities and challenges* attached. Note that this is internal drafts (some parts are a work in progress) and have not yet been seen by our Board. As such, please don't circulate this beyond your team.

Any comments or feedback by **midday Thursday 3rd December** would be appreciated.

What we're looking for in the review:

1. Is it logical and accurate
2. Any major mitigation opportunities missing
3. Are major connections acknowledged (e.g. link biofuels to land)
4. Are there unacknowledged elephants (essentially weaknesses, major issues/risks)

5. Are key limitations covered briefly (barriers)

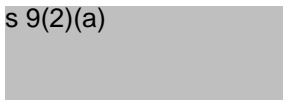
Report structure:

- We thought it'd be helpful for you to understand where this work fits in the main report (outlined below)
- We are using an adaptive approach to deliver the reports – the below is subject to change, so please keep it confidential
- We may move the pieces within the structure around a bit

Report 1: Draft advice (including recommendations, key judgements and consultation questions) (<100 pages)	Report 2: Draft evidence (including assumptions & other judgements) (300 pages)
This report will ensure our consultation process meets the consultation requirements in the Act. This advice is in the name of the Commissioners.	This shows the evidence produced by the Commission staff and used to create the Commissioners draft advice, and will be a companion product released for the consultation period.
<p>Report structure:</p> <p>Advice, recommendations, & key judgements</p> <ol style="list-style-type: none"> 1. Executive summary 2. Introduction 3. Overview of Science (including methane section 5K advice) + International context 4. Rules for measuring progress 5. Sector Pathways & Proposed Emissions Budgets (including summary discussion of mitigation technologies, advice on the proportion of emissions removals, delivery risks and forestry risks discussion, budget offshore mitigation advice) 6. NDC advice 7. Impacts assessment 8. Advice on policy direction 9. Conclusions & recommendations <p>Note: the Commissions 8 pieces of advice would sit across the chapters in the relevant place.</p>	<p>Report structure:</p> <p>Evidence, assumptions & judgements</p> <ol style="list-style-type: none"> 1. Introduction 2. Overview of Science (including methane section 5K analysis) + International context 3. Rules for measuring progress 4. Sector mitigation options (technologies, practices, and removals) and barriers 5. Modelling methodology(?) 6. Reference case 7. Sector Pathways 8. NDC 9. Impacts assessment 10. Policy direction considerations 11. Conclusions

Ngā mihi,

s 9(2)(a)



s 9(2)(a)



W climatecommission.govt.nz

[UNCLASSIFIED]

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a)
Sent: November 2020 2:13 pm
To: s 9(2)(a)
Cc:
Subject: [UNCLASSIFIED] RE: Draft Climate Change Commission Waste chapter for facts and accuracy checking
Attachments: Evidence CH 04d - Waste Reducing emissions SENT FOR PEER REVIEW.docx

[UNCLASSIFIED]

Kia ora s 9(2)(a)

Resend the same attachment as Francisco pointed out you might not be able to access the first attachment in SharePoint.

We look forward to receiving your feedback before Thursday.

Nga mihi

s 9(2)(a)

[UNCLASSIFIED]

From: s 9(2)(a)
Sent: Monday, 30 November 2020 1:32 pm
To: s 9(2)(a) <@mfe.govt.nz>
Cc: s 9(2)(a) <@climatecommission.govt.nz>; s 9(2)(a) <@climatecommission.govt.nz>
Subject: Draft Climate Change Commission Waste chapter for facts and accuracy checking

[UNCLASSIFIED]

Kia ora s 9(2)(a)

I hope this email finds you well. I am supporting s 9(2)(a) in coordinating the peer review process of our Report #2: Evidence report (see Report Structure below).

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on a confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

Please see the draft chapter – Waste *mitigation opportunities and challenges* attached. Note that this is internal drafts (some parts are a work in progress) and have not yet been seen by our Board. As such, please don't circulate this beyond your team.

Any comments or feedback by **midday Thursday 3rd December** would be appreciated.

What we're looking for in the review:

- 1) Is it logical and accurate

- 2) Any major mitigation opportunities missing
- 3) Are major connections acknowledged (e.g. link biofuels to land)
- 4) Are there unacknowledged elephants (essentially weaknesses, major issues/risks)
- 5) Are key limitations covered briefly (barriers)

Report structure:

- We thought it'd be helpful for you to understand where this work fits in the main report (outlined below)
- We are using an adaptive approach to deliver the reports – the below is subject to change, so please keep it confidential
- We may move the pieces within the structure around a bit

Report 1: Draft advice (including recommendations, key judgements and consultation questions) (<100 pages)	Report 2: Draft evidence (including assumptions & other judgements) (300 pages)
This report will ensure our consultation process meets the consultation requirements in the Act. This advice is in the name of the Commissioners.	This shows the evidence produced by the Commission staff and used to create the Commissioners draft advice, and will be a companion product released for the consultation period.
<p>Report structure:</p> <p>Advice, recommendations, & key judgements</p> <ol style="list-style-type: none"> 1. Executive summary 2. Introduction 3. Overview of Science (including methane section 5K advice) + International context 4. Rules for measuring progress 5. Sector Pathways & Proposed Emissions Budgets (including summary discussion of mitigation technologies, advice on the proportion of emissions removals, delivery risks and forestry risks discussion, budget offshore mitigation advice) 6. NDC advice 7. Impacts assessment 8. Advice on policy direction 9. Conclusions & recommendations <p>Note: the Commissions 8 pieces of advice would sit across the chapters in the relevant place.</p>	<p>Report structure:</p> <p>Evidence, assumptions & judgements</p> <ol style="list-style-type: none"> 1. Introduction 2. Overview of Science (including methane section 5K analysis) + International context 3. Rules for measuring progress 4. Sector mitigation options (technologies, practices, and removals) and barriers 5. Modelling methodology(?) 6. Reference case 7. Sector Pathways 8. NDC 9. Impacts assessment 10. Policy direction considerations 11. Conclusions

Ngā mihi,

s 9(2)(a)

Attachment withheld in full under 9(2)(g)(i).

Final version of the chapter is available at: <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-04d-Reducing-emissions-Waste-20-Jan-2021.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a)
Sent: Tuesday, 1 December 2020 4:25 pm
To: s 9(2)(a)
Cc:
Subject: [UNCLASSIFIED] For fact checking and accuracy checking on Climate Change Commission Evidence report chapter
Attachments: Evidence CH Impacts - for external review.docx

[UNCLASSIFIED]

Kia ora s 9(2)(a)

I hope this email finds you well. I am supporting s 9(2)(a) in coordinating the peer review process of our Report #2: Evidence report (see Report Structure below).

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on a confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

Please see the draft chapter – “Impacts” attached. Note that this is internal drafts (some parts are a work in progress) and have not yet been seen by our Board. As such, please don’t circulate this beyond your team.

Any comments or feedback by **midday Thursday 3rd December** would be appreciated.

What we’re looking for in the review:

- 1) Is it logical and accurate
- 2) Any major mitigation opportunities missing
- 3) Are major connections acknowledged (e.g. link biofuels to land)
- 4) Are there unacknowledged elephants (essentially weaknesses, major issues/risks)
- 5) Are key limitations covered briefly (barriers)

Report structure:

- We thought it’d be helpful for you to understand where this work fits in the main report (outlined below)
- We are using an adaptive approach to deliver the reports – the below is subject to change, so please keep it confidential
- We may move the pieces within the structure around a bit

Report 1: Draft advice (including recommendations, key judgements and consultation questions) (<100 pages)	Report 2: Draft evidence (including assumptions & other judgements) (300 pages)
This report will ensure our consultation process meets the consultation requirements in the Act. This advice is in the name of the Commissioners.	This shows the evidence produced by the Commission staff and used to create the Commissioners draft advice, and will be a companion product released for the consultation period.
Report structure:	Report structure:
Advice, recommendations, & key judgements 1. Executive summary	Evidence, assumptions & judgements 1. Introduction

2. Introduction
3. Overview of Science (including methane section 5K advice) + International context
4. Rules for measuring progress
5. Sector Pathways & Proposed Emissions Budgets (including summary discussion of mitigation technologies, advice on the proportion of emissions removals, delivery risks and forestry risks discussion, budget offshore mitigation advice)
6. NDC advice
7. Impacts assessment
8. Advice on policy direction
9. Conclusions & recommendations

2. Overview of Science (including methane section 5K analysis) + International context
3. Rules for measuring progress
4. Sector mitigation options (technologies, practices, and removals) and barriers
5. Modelling methodology(?)
6. Reference case
7. Sector Pathways
8. NDC
9. Impacts assessment
10. Policy direction considerations
11. Conclusions

Note: the Commissions 8 pieces of advice would sit across the chapters in the relevant place.

Ngā mihi,

s 9(2)(a)



s 9(2)(a)

W climatecommission.govt.nz

[UNCLASSIFIED]

Attachment withheld in full under 9(2)(g)(i).

Final version of the chapter is available at: <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-12-How-we-earn-our-way-in-the-world-20-Jan-2021.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a)
Sent: December 2020 1:32 pm
To: s 9(2)(a) @mfe.govt.nz
Cc: s 9(2)(a)
Subject: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report
Attachments: Evidence CH 04d - Waste Reducing emissions SENT FOR PEER REVIEW.docx

[UNCLASSIFIED]

Kia ora s 9(2)(a)

Hope you are well. Your contact details were provided by s 9(2)(a)

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on a confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

The Climate Change Commission is currently drafting two reports, namely, the Recommendations report and the Evidence report. We trust it will be beneficial to us if we seek your peer review of the chapter: ***“Waste sector opportunities and challenges”***.

The report contains approx. 12 pages and we are asking for fact checking and accuracy checking or any gaps that we have not included in the report, **specially page 12**.

We would be appreciate if you are able to provide us your feedback before Thursday 3rd Dec lunchtime.

Our public consultation starts on 1 Feb 2021 and there will also be opportunity to input into our analysis.

I look forward to hearing from you.

Nga mihi

s 9(2)(a)



s 9(2)(a)

W climatecommission.govt.nz

[UNCLASSIFIED]

Attachment withheld in full under 9(2)(g)(i).

Final version of the chapter is available at: <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-04d-Reducing-emissions-Waste-20-Jan-2021.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Wednesday, 2 December 2020 8:56 am
To: s 9(2)(a)
Cc:
Subject: RE: [UNCLASSIFIED] For fact checking and accuracy checking on Climate Change Commission Evidence report chapter

Kia ora s 9(2)(a)

Thanks for sharing this draft chapter. We will do our best to provide comments back to you by midday tomorrow.

Ngā mihi.

s 9(2)(a)

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Tuesday, 1 December 2020 4:25 PM
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Subject: [UNCLASSIFIED] For fact checking and accuracy checking on Climate Change Commission Evidence report chapter

[UNCLASSIFIED]

Kia ora s 9(2)(a)

I hope this email finds you well. I am supporting s 9(2)(a) in coordinating the peer review process of our Report #2: Evidence report (see Report Structure below).

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on a confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

Please see the draft chapter – “Impacts” attached. Note that this is internal drafts (some parts are a work in progress) and have not yet been seen by our Board. As such, please don’t circulate this beyond your team.

Any comments or feedback by **midday Thursday 3rd December** would be appreciated.

What we’re looking for in the review:

- 1) Is it logical and accurate
- 2) Any major mitigation opportunities missing
- 3) Are major connections acknowledged (e.g. link biofuels to land)
- 4) Are there unacknowledged elephants (essentially weaknesses, major issues/risks)
- 5) Are key limitations covered briefly (barriers)

Report structure:

- We thought it’d be helpful for you to understand where this work fits in the main report (outlined below)
- We are using an adaptive approach to deliver the reports – the below is subject to change, so please keep it confidential
- We may move the pieces within the structure around a bit

<p>Report 1: Draft advice (including recommendations, key judgements and consultation questions) (<100 pages)</p>	<p>Report 2: Draft evidence (including assumptions & other judgements) (300 pages)</p>
<p>This report will ensure our consultation process meets the consultation requirements in the Act. This advice is in the name of the Commissioners.</p>	<p>This shows the evidence produced by the Commission staff and used to create the Commissioners draft advice, and will be a companion product released for the consultation period.</p>
<p>Report structure:</p> <p>Advice, recommendations, & key judgements</p> <ol style="list-style-type: none"> 1. Executive summary 2. Introduction 3. Overview of Science (including methane section 5K advice) + International context 4. Rules for measuring progress 5. Sector Pathways & Proposed Emissions Budgets (including summary discussion of mitigation technologies, advice on the proportion of emissions removals, delivery risks and forestry risks discussion, budget offshore mitigation advice) 6. NDC advice 7. Impacts assessment 8. Advice on policy direction 9. Conclusions & recommendations <p>Note: the Commissions 8 pieces of advice would sit across the chapters in the relevant place.</p>	<p>Report structure:</p> <p>Evidence, assumptions & judgements</p> <ol style="list-style-type: none"> 1. Introduction 2. Overview of Science (including methane section 5K analysis) + International context 3. Rules for measuring progress 4. Sector mitigation options (technologies, practices, and removals) and barriers 5. Modelling methodology(?) 6. Reference case 7. Sector Pathways 8. NDC 9. Impacts assessment 10. Policy direction considerations 11. Conclusions

Ngā mihi,

s 9(2)(a)



s 9(2)(a)

W climatecommission.govt.nz

[UNCLASSIFIED]

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

s 9(2)(a)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Wednesday, 2 December 2020 3:18 pm
To: s 9(2)(a)
Cc:
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

Kia ora, just noting that I'll have feedback to you by COP Friday, as discussed with Francisco over the phone.

Thank you,

s 9(2)(a)

23 Kate Sheppard Place, Thorndon, Wellington 6143



**Making Aotearoa New Zealand
the most liveable place in the world**
Aotearoa – he wāhiwhāhiwhā māori hāwhāiri mā te taiao

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Wednesday, 2 December 2020 8:31 am
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

[UNCLASSIFIED]

Hi s 9(2)(a)

Just concentrate on the refrigerants please – the waste part of the mitigation options have been sent to other from MfE.

Thank you,



s 9(2)(a)

W climatecommission.govt.nz

[UNCLASSIFIED]

From: s 9(2)(a) <[redacted]@mfe.govt.nz>
Sent: Wednesday, December 2, 2020 8:25 AM
To: s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Cc: s 9(2)(a) <[redacted]@climatecommission.govt.nz>; s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

Kia ora s 9(2)(a) <[redacted]>

Thanks for getting in touch, this looks really interesting. Will aim to get a response to you by lunchtime tomorrow.

Have you sent this material to others at MfE? I know few people thinking about evidence base for the waste ERP – if you haven't already been in touch with them, I can pass this on. If you have sent it to other MfE colleagues already, let me know, as I'd like to coordinate my feedback with theirs.

Ngā mihi.
 s 9(2)(a) <[redacted]>

23 Kate Sheppard Place, Thorndon, Wellington 6143



From: s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Sent: Tuesday, 1 December 2020 1:32 pm
To: s 9(2)(a) <[redacted]@mfe.govt.nz>
Cc: s 9(2)(a) <[redacted]@climatecommission.govt.nz>; s 9(2)(a) <[redacted]@climatecommission.govt.nz>
Subject: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

[UNCLASSIFIED]

Kia ora s 9(2)(a) <[redacted]>

Hope you are well. Your contact details were provided by s 9(2)(a) <[redacted]>

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on an confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

The Climate Change Commission is currently drafting two reports, namely, the Recommendations report and the Evidence report. We trust it will be beneficial to us if we seek your peer review of the chapter: **“Waste sector opportunities and challenges”**.

The report contains approx. 12 pages and we are asking for fact checking and accuracy checking or any gaps that we have not included in the report, **specially page 12**.

We would be appreciate if you are able to provide us your feedback before Thursday 3rd Dec lunchtime.

Our public consultation starts on 1 Feb 2021 and there will also be opportunity to input into our analysis.

I look forward to hearing from you.

Nga mihi

s 9(2)(a)



s 9(2)(a)
W climatecommission.govt.nz

[UNCLASSIFIED]

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Wednesday, 2 December 2020 8:31 am
To: s 9(2)(a)
Cc:
Subject: fact checking and accuracy checking of Climate Change Commission Evidence report

Okay, thanks!

s 9(2)(a)

23 Kate Sheppard Place, Thorndon, Wellington 6143



**Making Aotearoa New Zealand
the most liveable place in the world**
Aotearoa – he aotearoa māori haka mā te taiao

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Wednesday, 2 December 2020 8:31 am
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

[UNCLASSIFIED]

Hi s 9(2)(a)

Just concentrate on the refrigerants please – the waste part of the mitigation options have been sent to other from MfE.

Thank you,



s 9(2)(a)

W climatecommission.govt.nz

From: s 9(2)(a)
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: [UNCLASSIFIED] Draft Climate Change Commission Waste chapter for facts and accuracy checking
Date: Friday, 4 December 2020 9:05:53 pm
Attachments: [image001.png](#)

Hi s 9(2)(a)

Thanks heaps for this! Very solid effort.

Cheers,
s 9(2)(a)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Friday, 4 December 2020 3:42 PM
To: s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Subject: RE: [UNCLASSIFIED] Draft Climate Change Commission Waste chapter for facts and accuracy checking

Hi team, apologies for the delay, please find our feedback attached.

Thanks
s 9(2)(a)

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Monday, 30 November 2020 1:32 PM
To: s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Subject: [UNCLASSIFIED] Draft Climate Change Commission Waste chapter for facts and accuracy checking

[UNCLASSIFIED]

Kia ora s 9(2)(a)

I hope this email finds you well. I am supporting s 9(2)(a) in coordinating the peer review process of our Report #2: Evidence report (see Report Structure below).

Under the pending Memorandum of Understanding between the Climate Change Commission (CCC) and Government agencies, there is agreement to collaborate on the development of an evidence base and to share information early on a confidential basis to ensure all agencies are able to meet the statutory deadlines. Our draft work would benefit from your early peer review.

Please see the draft chapter – Waste *mitigation opportunities and challenges* attached. Note that

this is internal drafts (some parts are a work in progress) and have not yet been seen by our Board. As such, please don't circulate this beyond your team.

Any comments or feedback by **midday Thursday 3rd December** would be appreciated.

What we're looking for in the review:

- 1) Is it logical and accurate
- 2) Any major mitigation opportunities missing
- 3) Are major connections acknowledged (e.g. link biofuels to land)
- 4) Are there unacknowledged elephants (essentially weaknesses, major issues/risks)
- 5) Are key limitations covered briefly (barriers)

Report structure:

- We thought it'd be helpful for you to understand where this work fits in the main report (outlined below)
- We are using an adaptive approach to deliver the reports – the below is subject to change, so please keep it confidential
- We may move the pieces within the structure around a bit

Report 1: Draft advice (including recommendations, key judgements and consultation questions) (<100 pages)	Report 2: Draft evidence (including assumptions & other judgements) (300 pages)
This report will ensure our consultation process meets the consultation requirements in the Act. This advice is in the name of the Commissioners.	This shows the evidence produced by the Commission staff and used to create the Commissioners draft advice, and will be a companion product released for the consultation period.
<p>Report structure:</p> <p>Advice, recommendations, & key judgements</p> <ol style="list-style-type: none"> 1. Executive summary 2. Introduction 3. Overview of Science (including methane section 5K advice) + International context 4. Rules for measuring progress 5. Sector Pathways & Proposed Emissions Budgets (including summary discussion of mitigation technologies, advice on the proportion of emissions removals, delivery risks and forestry risks discussion, budget offshore mitigation advice) 6. NDC advice 	<p>Report structure:</p> <p>Evidence, assumptions & judgements</p> <ol style="list-style-type: none"> 1. Introduction 2. Overview of Science (including methane section 5K analysis) + International context 3. Rules for measuring progress 4. Sector mitigation options (technologies, practices, and removals) and barriers 5. Modelling methodology(?) 6. Reference case 7. Sector Pathways 8. NDC 9. Impacts assessment 10. Policy direction considerations

- 7. Impacts assessment
- 8. Advice on policy direction
- 9. Conclusions & recommendations

11. Conclusions

Note: the Commissions 8 pieces of advice would sit across the chapters in the relevant place.

Ngā mihi,

s 9(2)(a)



s 9(2)(a)

www.climatecommission.govt.nz

[UNCLASSIFIED]

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

Attachment withheld in full under 9(2)(g)(i).

Final version of the Chapter is available at: <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-04d-Reducing-emissions-Waste-20-Jan-2021.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

s 9(2)(a)

From: s 9(2)(a) @mfe.govt.nz>
Sent: Monday, 7 December 2020 5:45 pm
To: s 9(2)(a)
Cc:
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report
Attachments: Evidence CH 04d - Waste Reducing emissions SENT FOR PEER REVIEW.docx

Kia ora koutou,

Thank you for the opportunity to comment on the report, and apologies for the delay in getting back to you, some urgent work . I've attached a copy updated with feedback on refrigerants in track changes. These changes are based on the path we've been following at MfE (particularly in the options section).

I've also attached to this email the report on emissions projections we looked at in the HFC workshop earlier in the year – you may want to add the scenario graphic or more evidence to support the comments I've included re not meeting 2050 targets with just our Kigali phase down. Wasn't quite sure whether that was too much detail, but in short – happy to help with any further evidence base work. 😊

Thanks again,

s 9(2)(a)

23 Kate Sheppard Place, Thorndon, Wellington 6143



Ministry for the
Environment
 Manatū Mo Te Taiao



**Making Aotearoa New Zealand
 the most liveable place in the world**

Aotearoa – ko whakamua mātau huarua mā te taiao

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Wednesday, 2 December 2020 8:31 am
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) climatecommission.govt.nz>
Subject: RE: [UNCLASSIFIED] For peer review: fact checking and accuracy checking of Climate Change Commission Evidence report

[UNCLASSIFIED]

Hi s 9(2)(a)

Just concentrate on the refrigerants please – the waste part of the mitigation options have been sent to other from MfE.

Thank you,



s 9(2)(a)



RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Attachment withheld in full under 9(2)(g)(i).

Final version of the Chapter is available at: <https://ccc-production-media.s3.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-04d-Reducing-emissions-Waste-20-Jan-2021.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To:
Subject: Question about MFE baselines and Waste Minimisation Plans
Date: Wednesday, 26 August 2020 2:22:00 pm
Attachments: [image001.png](#)

[UNCLASSIFIED]

Hi s 9(2)(a)

Hope you're well – thanks again for consulting with us earlier and sharing the draft reports.

I had a question as to whether MFE were planning on incorporating local waste management plans in the baseline projections for waste? Some councils like Auckland are setting quite aggressive targets for waste minimisation.

Thanks,



s 9(2)(a)

[W climatecommission.govt.nz](http://climatecommission.govt.nz)

[UNCLASSIFIED]

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To:
Cc:
Subject: RE: [UNCLASSIFIED] F Gasses?
Date: Tuesday, 8 September 2020 4:16:11 pm
Attachments: [image001.png](#)

Just on energy consumption; thanks to the wonders of how refrigerants work, they are remarkably efficient (able to shift many units of heat energy for a single unit of electrical energy) so even a reduction in this efficiency isn't going to undermine the wonders of refrigerants. So it's highly likely that the GHG emissions from the refrigerant gases themselves would be much greater than any electricity emissions, even in a country that relies on fossil fuels for electricity let alone NZ.

From: s 9(2)(a) @mfe.govt.nz>
Sent: Tuesday, 8 September 2020 3:38 PM
To: s 9(2)(a) @climatecommission.govt.nz>; s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @mfe.govt.nz>
Subject: RE: [UNCLASSIFIED] F Gasses?

I can see merit in F-gases falling in either grouping. The points outlined below are all good reasons for moving refrigerants to waste

On the flip side - the refrigeration sector is a reasonably large consumer of electricity (ie, coolstores, heatpumps etc) and will likely continue to grow in electricity demand as we transition to low-GWP refrigerants that are less energy efficient in delivering the same cooling...

Cheers,
s 9(2)(a)

From: s 9(2)(a) @climatecommission.govt.nz>
Sent: Tuesday, 8 September 2020 2:57 PM
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Cc: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>
Subject: RE: [UNCLASSIFIED] F Gasses?

[UNCLASSIFIED]

Yes, that was the logic that was raised by the HIP team – the same policy instruments (product stewardship etc) also apply to waste and F gases.

[UNCLASSIFIED]

From: s 9(2)(a) @mfe.govt.nz>
Sent: Tuesday, September 8, 2020 2:55 PM
To: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @climatecommission.govt.nz>
Cc: s 9(2)(a) @mfe.govt.nz>; s 9(2)(a) @mfe.govt.nz>

Subject: RE: [UNCLASSIFIED] F Gasses?

Random thought: it seems to me that there may be some logic to thinking about waste and F-gases in a similar way, because they are two sectors for which there are big gaps in time between the activity that can be priced and regulated (waste disposal or consumption of F-gases) and the emissions occurring. Consequently the ETS and other policies have to deal with potential emissions.

From: s 9(2)(a) <[REDACTED]@mfe.govt.nz>

Sent: Tuesday, 8 September 2020 1:20 PM

To: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>

Cc: s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>; s 9(2)(a) <[REDACTED]@mfe.govt.nz>

Subject: RE: [UNCLASSIFIED] F Gasses?

Hi s 9(2)(a)

As the GHG inventory reports F-gases in the IPPU sector, and different staff are involved in F-gases, we have not considered this to my knowledge. However I understand that for the purposes of ERPs, the emissions are grouped differently for various reasons.

My concerns are more practical than theoretical. One issue I can see is that “waste” as per the inventory will no longer be equivalent to “waste” as per the ERP, so it might be practical to keep F-gases under HIP which is not so easily confused with existing inventory sectors. Another consideration is engaging with even more staff under the waste ERP at MfE, which to me anyway feels a bit cumbersome as it is noting we have a lot of Waste and other expertise involved. However, if the benefits you have in mind outweigh these kinds of considerations then I suggest discussing with s 9(2)(a)

s 9(2)(a) you may also have thoughts.

Forgive me I don't recall what the local government baselines issue was specifically, if you wanted to get back to me about that separately.

Cheers

s 9(2)(a)

From: s 9(2)(a) <[REDACTED]@climatecommission.govt.nz>

Sent: Tuesday, 8 September 2020 12:02 PM

To: s 9(2)(a) <[REDACTED]@mfe.govt.nz>

Subject: [UNCLASSIFIED] F Gasses?

[UNCLASSIFIED]

Hi s 9(2)(a)

Hope you're well today.

There's been some discussion internally here in the commission about the possibility of moving F-Gasses from the Heat, Industry and Power area to the Waste area. I was wondering whether MfE has had any internal discussion about whether it could sit in Waste and what the outcomes of those discussions were. Also interested in your thoughts on this topic.

Also – I'm still looking into the issue of local government and baselines – trying to set up a meeting with LGNZ so I'll let you know once I have more information about baselines.

Cheers,



s 9(2)(a)

www.climatecommission.govt.nz

[UNCLASSIFIED]

Please Note: The information contained in this e-mail message and any attached files may be confidential information, and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE OFFICIAL INFORMATION ACT

From: s 9(2)(a)
To: [REDACTED]
Subject: FW: Waste minimisation policy emission reduction potential - a circular economy approach (TRG feedback)
Date: Friday, 2 October 2020 1:33:00 pm
Attachments: [image001.png](#)
[Waste minimisation policy emisison reduction potential - a circular economy approach 27 Aug 2020.pdf](#)

[UNCLASSIFIED]

[UNCLASSIFIED]

From: s 9(2)(a) [REDACTED]@mfe.govt.nz>
Sent: Thursday, August 27, 2020 10:28 AM
To: s 9(2)(a) [REDACTED]@climatecommission.govt.nz>
Cc: s 9(2)(a) [REDACTED]@climatecommission.govt.nz>; s 9(2)(a) [REDACTED]@mfe.govt.nz>; s 9(2)(a) [REDACTED]@mfe.govt.nz>; s 9(2)(a) [REDACTED]@mfe.govt.nz>
Subject: Waste minimisation policy emission reduction potential - a circular economy approach (TRG feedback)

Kia ora s 9(2)(a) [REDACTED]

As discussed and apologies for the delay. Please find attached our TRG feedback on broader waste emissions reduction potential. Hopefully this is useful and illustrates the opportunity in considering a circular economy approach to waste, which includes both organic and inorganic materials.

MfE's Deputy Secretary for Waste and Resource Efficiency, s 9(2)(a) [REDACTED] would welcome the opportunity to meet with the Commission and engage in a dialogue on the Ministry's wider work programme for waste. This could be facilitated with a presentation and overview of the rapidly evolving work programme and follow up discussion.

Do let us know if this is of interest.

Ngā mihi nui,

s 9(2)(a) [REDACTED]

Environment House, 23 Kate Sheppard Place, PO Box 10362, Wellington 6143

Please note: my normal working hours are 7.00am-3.30pm.

<http://intranet/sites/all/files/Lockup-8pt.png>



Please Note: The information contained in this e-mail message and any attached files may be confidential information and may also be the subject of legal professional privilege. It is not necessarily the official view of the Ministry for the Environment. If you are not the intended recipient, any use, disclosure or copying of this e-mail is unauthorised. If you have received this e-mail in error, please notify us immediately by reply e-mail and delete the original. Thank you.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

Waste minimisation policy emission reduction potential – a circular economy approach

Purpose

1. The purpose of this feedback is to encourage the Climate Change Commission to consider the circular economy approach when considering waste emissions from organic and inorganic materials.

Key messages

1. The Ministry's waste and resource efficiency work programme is well underway. In the next twelve months, working with key stakeholders, the New Zealand Waste Strategy, the investment framework and the delivery vehicle for a once in a life time transformative work programme will take shape.
2. This transition to a world leading resource recovery system will have significant social, economic and environmental benefits across the economy. The transition will be underpinned by the waste levy expansion, delivering the enabling investment opportunity estimated \$276 million per annum by 2024.
3. The work programme will present large scale waste minimisation options using a waste hierarchy approach, for both organic and inorganic materials to be considered for prioritisation and funding across a range of intervention options e.g. infrastructure, recovery systems, behaviour change, community projects, research and development, etc. Both inorganic and organic material types have significant greenhouse gas emission reduction potential and a small number of examples have been provided below.
4. A circular economy approach to resource management is needed. New Zealand has the highest per capita municipal waste to landfill in the OECD. The Climate Change Commission is in a unique position to advise New Zealand in its transition to a circular economy which takes a broader view of waste policy intervention benefits from an emissions standpoint.

Background

5. The waste component of our future emissions reduction plan will build on and complement the ambitious Waste and Resource Recovery work programme already underway at the Ministry for the Environment.
6. Recent Government decisions to expand the waste disposal levy (announced 15 July) are likely to have a significant impact on the waste sector and simultaneously create opportunities for emissions reductions. These decisions will:
 - progressively increase the levy rate for municipal landfills that take household waste
 - apply the waste disposal levy to additional landfill types, including construction and demolition fills
 - collect better data about the waste that we are creating and how we are managing it, allowing us to identify where to focus efforts to minimise waste and reduce emissions.
7. The expansion of the waste disposal levy could increase levy revenue from around \$36 million to up to \$276 million per annum, dramatically increasing opportunities to invest in resource recovery infrastructure and initiatives that support waste reduction. Many of these initiatives will have direct (landfill) and indirect (non-landfill) greenhouse gas emission reduction benefits.

The levy changes are provisionally set to run from mid-2021 to 2024, but Cabinet will confirm these timeframes in late-2020.

8. These changes are part of a broader work programme that aims to transform New Zealand's waste sector and give effect to the levy changes over the next 10-15 years, at least. This work programme will be underpinned by:
 - a new long-term waste strategy, which is likely to include goals and targets to guide priorities, activities and investment. There will be important links between this strategy work and the emissions reduction plan, in relation to both organic waste disposal and the emissions profile of the waste and resource recovery system as a whole. (To be completed by late-2021).
 - a long-term infrastructure plan with a 10 year horizon that guides investment in resource recovery and other infrastructure to support improved waste outcomes. Again, emissions reduction will be a necessary consideration in this work. (To be completed by late 2021).
 - a series of shorter-term action and investment plans that guide more immediate priorities and projects. These will be updated every three years and will support the longer-term strategy and infrastructure plans described above. (To be completed by late-2020).
 - updated legislation on waste, which will put in place the governance and institutional arrangements for the new system, arrangements for the allocation of funds, updated regulatory tools, information gathering powers, enforcement responsibilities and powers, and reporting systems. (To be completed by end 2022).
9. Diverting organic waste (e.g. kitchen and garden waste, and materials such as timber and paper) from landfill will be key to reducing emissions from the waste sector. Infrastructure that facilitates the diversion of organics can be funded through future waste levy fund investment (for example, diversion to composting and anaerobic digesters reduce methane emissions from landfills). Plans are also underway to standardise kerbside collections, which will help to ensure that resources are diverted including food waste.

Data and modelling gaps

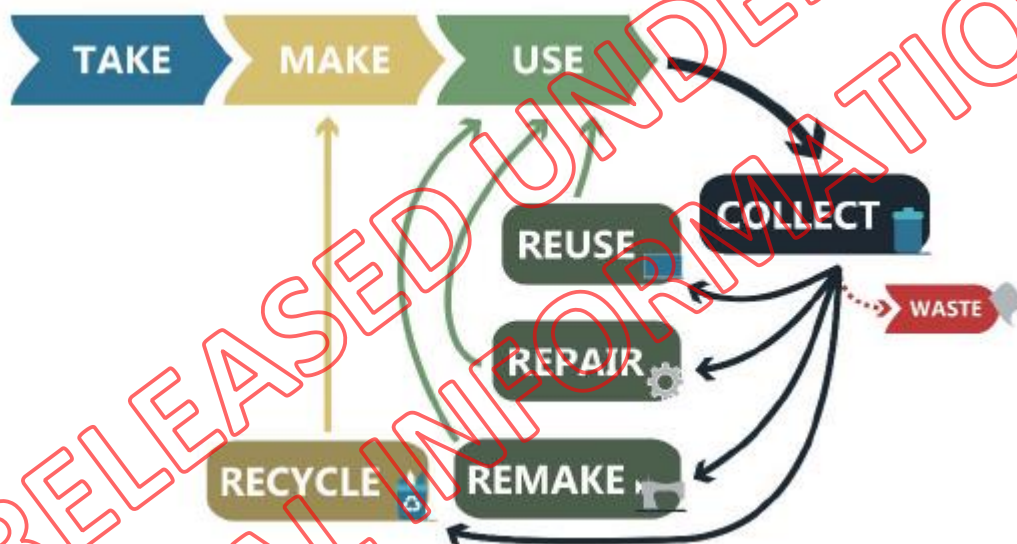
10. Currently, there is limited data available about the wider waste sector and our advice on waste emissions relies heavily on assumptions and modelling driven by landfill disposal data. The current data provides a starting point for formulating goals and targets for the wider waste sector, which includes both organic and inorganic materials.
11. When developing policy and identifying new opportunities for emissions reductions, it is essential to consider the emission reduction benefits from both organic and inorganic materials, especially when considering targets and investment priorities. In order to do this, there is an urgent need to improve our national data on New Zealand's resource recovery system. This is unlikely to be achieved in a timeframe to support the first emissions reduction plan, but that does not mean we should not consider prioritisation of waste minimisation initiatives that also reduce inorganic materials in the emissions context.

A circular economy approach

12. The Climate Change Commission is in a unique position to guide New Zealand towards a circular economy approach. The World Economic Forum is now increasingly focused on promoting and supporting a global transition to a circular economy. It estimates the world is only currently 9% circular, and that in 2019, over 92 billion tonnes of materials were extracted and processed

globally, contributing to about half of global CO₂ emissions. It is easy to see why the circular economy alternative appeals, when it could offer up to \$4.5 trillion in economic benefits by 2030.

13. A circular economy approach designs out waste and brings positive society-wide benefits, building economic, natural, and social capital. It is based on three principles:
 - a. Design out waste and pollution
 - b. Keep products and materials in use
 - c. Regenerate natural systems
14. In practice this means shifting from a linear take-make-waste economic model, towards a take, make, use, reuse, repair, remanufacture, and recycle economic model. New Zealand's resources should not become waste, rather they can be maintained within the economy, providing social, economic and environmental benefits for longer.



15. A circular economy approach would require products and components are in some form of active use for longer. This would mean products can be easily disassembled and remanufactured, repaired, reused and/or biodegraded. For example, if 'refill' models were used for personal care and home products, packaging and transport savings would represent an 80-85% reduction in associated greenhouse gas emissions compared to single-use bottles.
16. Benefits of keeping products/components in use for longer avoids exploitation of natural resources and production of greenhouse gas emissions from resource extraction, product manufacturing and end-of-life treatment.

Product stewardship

17. On 29 July 2020, Hon. Eugenie Sage declared six priority products that will see regulated product stewardship schemes developed and accredited for implementation. These products include

plastic packaging, tyres, e-waste, agrichemicals and their containers, refrigerants and farm plastics.

18. These inorganic materials all have global warming potential reduction benefits, as well as much wider social, economic and environmental benefits under regulated product stewardship schemes.
19. Poorly managed refrigerants are a significant contributor to depletion of the ozone layer and climate change. Under law, it is an offence to knowingly release refrigerants and other synthetic greenhouse gases into the atmosphere, but this is nearly impossible to monitor or enforce. Most losses to the environment are system leaks from poor design and poorly trained maintenance staff.
20. Refrigerant gas recovery programmes are in place in Australia, Europe, Japan and the USA. These have much higher recovery rates compared with 20 per cent here (eg, Norway has 40 per cent, Japan 56 per cent and Australia over 60 per cent).
21. Reduction of harm is the primary rationale for selecting this waste stream as a priority. Some waste refrigerants, as well as canisters used for gas storage, can be recovered for reuse. However, product stewardship would primarily ensure that certain refrigerants are safely destroyed and only lower global warming potential gases are recycled back into circulation.

Construction and demolition

22. The built environment uses almost half the world's extracted materials and is a major contributor to landfill globally and here in New Zealand. The circular economy approach to construction could see a 38% reduction in associated CO₂ emissions by 2050¹ due to decreased demand for steel, aluminium, cement and plastic. Circular principles will promote:
 - Using recycled aggregates, this could result in 40-70% fewer CO₂ emissions a year when compared to using raw extracted materials (Wellington City for example has no concrete crushing plant)
 - Modular and durable designs which will allow for buildings to be disassembled, refurbished and repaired easily, meaning less new material production and end-of-life treatment emissions (in the absence of supporting infrastructure a recovery construction boom will also result in a construction waste to landfill boom).
 - Using buildings to their full capacity results in less buildings being built (even in New Zealand pressure on greenfield sites suitable for sustainable food production is an issue).

Beverage containers – aluminium cans

23. A beverage container return scheme is currently being designed for New Zealand for Ministerial and Cabinet consideration in the next 6 months.
24. An estimated 2.36 billion glass, plastic, aluminium and liquid paper board single-use beverage containers were sold to New Zealand consumers in 2018/19. Estimates for recovery of beverage containers vary by source and product material type. Based on previous estimates of 45% - 58% recovery for all beverage container types, and assuming a more optimistic scenario of 60%

recovered, an estimated 944 million beverage containers could end up as either landfill or litter in New Zealand every year.

25. A container return scheme is a form of product stewardship that increases recovery rates through the application of a refundable deposit to consumers on each container returned (for example, 10 cents, 20 cents, or 30 cents). The scheme in Germany is one of the highest performing globally, with a 98% recovery rate for single-use beverage containers.
26. Mitigating climate change is an important consideration for many waste minimisation initiatives and is a key principle for the container return scheme design process. A high number of beverage containers currently end up as landfill or litter, they are deemed as inorganic materials and therefore considered as inert from landfill emissions perspective. In addition, aluminium for beverage containers is all imported, so the relatively high embodied emissions in the material manufacture occur off shore. Due to economies of scale and the high value properties of beverage container alloy, it is likely that New Zealand will always import 100% of our beverage container aluminium. .

Kerbside systems

27. A life cycle analysis of kerbside recycling in Victoria, Australia,² was undertaken in 2015. This found that avoided waste disposal emissions are the largest beneficial contributor to the net global warming benefit associated with Victoria's kerbside recycling system. Table 1 below from the LCA highlights the significant Global Warming (GW) multipliers for the different material types.

Table 1: Victoria LCA characterisation for 1 tonne of each material collected at kerbside

Net Outcome -ve Benefit, +ve Burden	Mass collected tonnes	GW	EU	PO	MD	FFD	LU	WU	SW	CED
		kg CO2 eq	kg PO4-- eq	kg NMVOC	\$	\$	ha.a	kL H2O	kg	MJ LHV
Glass bottles	1	-530	-0.36	-2.3	0.13	-5.5	-0.00029	-0.94	-1100	-4500
Steel cans	1	-1700	-0.35	-4	-100	-18	0.0018	-42	-880	-15000
Alum. Cans	1	-17000	-7.7	-76	-20	-230	-0.078	-29	-4700	-210000
Paper - white	1	-1300	-2.1	-4.1	0.25	12	-0.14	-11	-500	680
Paper - mixed	1	-450	-1.8	-1.8	0.24	8.8	-0.14	-11	-660	-360
Paper - card	1	-170	-1.6	-1.6	0.24	8.5	-0.14	-11	-680	-470
Plastic - PET	1	-1200	-2.8	-2.6	-13	-57	-0.00084	-69	-990	-55000
Plastic - HDPE	1	-840	-0.041	-4.7	0.28	-58	0.0035	-23	-910	-51000
Plastic - HDPE (obl)	1	-790	0.067	-4	0.32	-57	0.0036	-22	-910	-50000
Plastic - mixed	1	-320	0.043	-1.2	0.34	-34	0.0036	-26	-910	-29000
Garden and green	1	230	-0.12	-1.5	-0.005	0.93	0.00022	-5.7	-170	310

28. As per table 1 above, for every tonne of aluminium cans recovered, 17 tonnes CO2e greenhouse gas emissions are avoided. The volume of the materials in Victoria's kerbside system is also important when considering the GW potential of the material types.
29. Relative to aluminium cans at 3kg per household per year (Table 2 below), green waste at 304kg per household per year is only just above aluminium in terms of overall global warming potential benefit. This means that considering materials management from a wider cost benefit perspective also becomes an important lens. The Victoria LCA also notes that green waste has a higher degree of uncertainty in terms of the fate of the diverted materials, meaning they have less confidence in the green waste global warming potential figures.

Table 2: Victoria LCA characterisation results for 1 functional unit (results that are negative reflect benefits and results that are positive indicate burdens)

² A. Carre, E. Crossin, S. Clune (2015) LCA of Kerbside Recycling in Victoria

<https://www.sustainability.vic.gov.au/-/media/SV/Publications/Government/Victorian-waste-data-portal/Lifecycle-assessment-of-kerbside-recyclables/LCA-of-Kerbside-Recycling-Main-Report-Nov-2015.pdf>

Net Outcome -ve Benefit, +ve Burden	Mass collected kg per year*	GW	EU	PO	MD	FFD	LU	WU	SW	CED
		kg CO2 eq	kg PO4-- eq	kg NMVOC	\$	\$	ha.a	KL H2O	kg	MJ LHV
Glass bottles	72	-38	-0.026	-0.17	0.0096	-0.39	-0.000021	-0.067	-79	-320
Steel cans	8	-14	-0.0028	-0.032	-0.83	-0.14	0.000014	-0.34	-7.1	-120
Alum. Cans	3	-50	-0.023	-0.23	-0.06	-0.69	-0.000023	-0.088	-14	-620
Paper - white	1	-1.3	-0.0021	-0.0041	0.00025	0.012	-0.00014	-0.011	-0.5	0.68
Paper - mixed	110	-50	-0.2	-0.2	0.027	0.97	-0.016	-1.2	-73	-40
Paper - card	45	-7.6	-0.072	-0.073	0.011	0.38	-0.0064	-0.5	-31	-21
Plastic - PET	8	-9.6	-0.022	-0.021	-0.1	-0.46	-0.000068	-0.55	-7.9	-440
Plastic - HDPE	4	-3.3	-0.00016	-0.019	0.0011	-0.23	0.000014	-0.091	-3.6	-200
Plastic - HDPE (col)	3	-2.4	0.0002	-0.012	0.00097	-0.17	0.000011	-0.067	-2.7	-150
Plastic - mixed	8	-2.5	0.00034	-0.0097	0.0027	-0.27	0.000028	-0.21	-7.3	-240
Garden and green	304	-68	-0.037	-0.44	-0.0015	0.28	0.000066	-1.7	-51	94
Total System	566	-250	-0.38	-1.2	-0.94	-0.72	-0.022	-4.9	-280	-2100
Uncertainty										
2.5 percentile	566	-340	-0.68	-2.3	-1.1	-1.7	-0.046	-7.3	-280	-3200
97.5 percentile	566	-130	-0.19	-0.47	-0.79	1.2	-0.0091	-2.8	-260	4.2

GW-Global Warming, EU-Eutrophication, PO-Photochemical Oxidants, MD-Mineral Depletion, FFD-Fossil Fuel Depletion, LU-Land Use, WU-Water Use, SW-Solid Waste, CED-Cummulative Energy Demand.

30. In this study, the combined overall outcome of the kerbside system collecting 566kg per household per year is a net benefit of -250kg CO2e. It is noteworthy that inorganic materials including aluminium, steel, plastics and glass contribute 48% of the total reduced global warming potential (-119.8kg CO2e)

31. Note: While private collection services for green waste exist in many districts across New Zealand, with a few notable exceptions (Christchurch City) Council kerbside collections for green waste are uncommon in New Zealand and the added transport costs make it unlikely that this will change in the future. New Zealand is currently heading toward a kerbside "food waste only" collection system. Auckland's kerbside food waste alone is estimated to be 100,000t of food waste.

Beverage container emission reduction opportunity – a hypothetical example (illustrative only)

32. To illustrate the potential benefits of waste minimisation policy interventions for inorganic materials, Victoria's LCA global warming factor for aluminium cans has been applied to the proposed New Zealand CRS context.

33. New Zealand consumers purchased 514,951,000 aluminium cans in 2018/19, an empty container weight of 8,474 tonnes of high grade imported aluminium. Using the Victoria LCA as a proxy for New Zealand, this would equate to approximately 144,058t of embodied CO2e per annum, of which 60% (at most) is currently recovered through kerbside or other means. Leaving 57,623t of embodied emissions as landfill and litter. New Zealand's landfill emissions from managed fills in 2018 was 1,394,910t CO2 e.

34. This means if New Zealand container return scheme achieved similar recovery rates to Germany (very high, 98%), this could save the equivalent of 4% of New Zealand's 'managed site' landfill emissions (based on 2018 inventory data). Currently the proposed NZ CRS recovery target for all materials types combined is 85%, with an aspirational target of 95%.

35. The substantial embodied material manufacturing emissions in aluminium beverage containers do not occur in New Zealand (all beverage container aluminium is imported in rolls, stamped and on-sold to beverage producers). This means this aspect of a NZ CRS is currently out of the 'waste emissions scope' as it is not a waste policy initiative associated with landfill emissions from organic materials. Given the many other social, economic and environmental benefits to a container return scheme (and one that promotes refillables too), this would be a missed opportunity.

Next steps

36. At a an investment level opportunity, \$276 million per annum by 2024 (i.e. the possible future waste levy context), the Ministry's waste and resource efficiency work programme is likely to play a very significant role over the next decade in supporting New Zealand's households, businesses and wider economy to transition to a circular economic model.
37. The work programme is still being developed and it would be timely to engage with the Climate Change Commission on the breadth and scope of this work programme in order to more fully explore this step change opportunity, and our transition to a low waste, low carbon, more circular economy.

RELEASED UNDER THE
OFFICIAL INFORMATION ACT

From: s 9(2)(a)
 To: s 9(2)(a)
 Cc: s 9(2)(a)
 Subject: Draft Reference Case Chapter for Review
 Date: Thursday, 5 November 2020 5:34:31 pm
 Attachments: [image001.png](#) MfE staffer - s 9(2)(a)
[FOR REVIEW Evidence CH Modelling & Baselines version to 05.11.20.docx](#)

Hi s 9(2)(a)

Thanks very much for being willing to review our draft “current policy reference case” chapter for our evidence report. Please find it attached. Note that this is an internal draft and has not yet been seen by our Board. As such, please don’t circulate this beyond your team.

We would welcome any feedback you have, but would like to draw your attention to a few things in particular:

- Does our breakdown of emissions make sense, and are we missing anything?
- Are we missing any key assumptions in our assumption table?
- Are we striking an appropriate balance in the level of detail we provide for each sector?
- Do any of the numbers we are using stand out as suspect or likely erroneous (e.g. look out by an order of magnitude)?
- Is it generally understandable for the reader?

If you can get this back to us by Monday it would be great. Let me know if that works for you.

Ngā mihi

s 9(2)(a)



s 9(2)(a)

W climatecommission.govt.nz

RELEASED UNDER THE OFFICIAL INFORMATION ACT

Attachment withheld in full under 9(2)(g)(i).

Final version of the chapter is available at: <https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/evidence/advice-report-DRAFT-1ST-FEB/Evidence-CH-07-Where-we-are-currently-heading-26-Jan-2021-compressed-1.pdf>

RELEASED UNDER THE
OFFICIAL INFORMATION ACT