Ministry for the Environment
Manatū Mō Te Taiao

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11 June 2019

19-D-00870

s 9(2)(a)

Dear s 9(2)(a)

Thank you for your email of 20 May 2019 requesting the following under the Official Information Act 1982 (the Act):

> *Any briefings, memos, or reports, including drafts, that discuss the meeting of New Zealand's 2020, 2030, and 2050 climate change targets, dated 2019.*
>
> *For clarity, the targets I am referring to are:*
>
> *2020 target to reduce emissions to 5 per cent below 1990 levels*
>
> *2030 target to reduce emissions to 30 per cent below 2005 levels*
>
> *2050 target to reduce emissions to 50 per cent below 1990 levels.*

The Ministry for the Environment identified 7 documents scope of your request, as listed in the attached table. Some information within these documents has been withheld under the following sections of the Act:

9(2)(a)	To protect the privacy of natural persons
9(2)(f)(iv)	To protect the confidentiality of advice tendered by Ministers of the Crown and officials
18(d)	That the information requested is or will soon be publicly available.

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.

Appendices 1 and 2 from *"Cover note – updated version of three NZ ETS tranche two Cabinet papers"* and *"Cover note – another update of three NZ ETS tranche two Cabinet papers"* are publicly available. Therefore they have been refused under section 18(d) of the Act. The information in the Appendices can be found at the following links:

- Appendix 1: https://www.mfe.govt.nz/node/25149
- Appendix 2: https://www.mfe.govt.nz/node/25147

Appendices 2, 5 and 6 from *"Publication of New Zealand's Greenhouse Gas Inventory"* are publicly available. Therefore they have been refused under section 18(d) of the Act. The information in the Appendices can be found at the following links:

- Appendix 2: http://www.mfe.govt.nz/publications/climate-change/new-zealands-greenhouse-gas-inventory-1990-2017-snapshot
- Appendix 5 and 6: http://www.mfe.govt.nz/publications/climate-change/new-zealands-greenhouse-gas-inventory-1990-2017

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.

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 website 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.

Yours sincerely

Lewis Stevens
Acting Director, Climate Change

List of documents

Document no.	Document date	Content	Decisions	OIA sections applied
1	8 March 2019	19-B-05358 ETS Forestry Proposals: Averaging Accounting and Harvested Wood Products	Released in part	S(2)(f)(iv) – to maintain the confidentiality of advice tendered
2	14 March 2019	19-B-05417 Cover note – updated version of three NZ ETS tranche two Cabinet papers	Released in part	S(2)(f)(iv) – to maintain the confidentiality of advice tendered S18(d) – Information in Appendix 1 and 2 is publicly available online
3	20 March 2019	19-B-05430 Cover note – another update of three NZ ETS tranche two Cabinet papers	Released in part	S(2)(f)(iv) – to maintain the confidentiality of advice tendered S18(d) – Information in Appendix 1 and 2 is publicly available online
4	10 April 2019	19-B-05463 Publication of New Zealand's Greenhouse Gas Inventory 1990-2017 and update of the 2020 net position.	Released in part	S18(d) – The information is in Appendices 2, 5 and 6 is publicly available.
5	7 March 2019	19-B-05335 Package of advice on the New Zealand Emissions Trading Scheme and tranche two amendments to the Climate Change Response Act 2002	Withheld in full	S(2)(f)(iv) – to maintain the confidentiality of advice tendered
6	28 March 2019	19-B-05455 New Zealand Emissions Trading Scheme – tranche two amendments to the Climate Change Response Act 2002 for ENV 4 April 2019	Withheld in full	S(2)(f)(iv) – to maintain the confidentiality of advice tendered
7	30 April 2019	19-B-05536 Joint advice on a response to the Interim Climate	Withheld in full	S(2)(f)(iv) – to maintain the confidentiality of advice tendered

		Change Committee's recommendations on agriculture		

Document 1

Priority – Medium

Security Level – In Confidence

Ministry for the Environment
Manatū Mō Te Taiao

Ministry for Primary Industries
Manatū Ahu Matua

8 March 2019

MPI Document Number: **B19-0042**

MfE Document Number **2019-B-05358**

ETS Forestry Proposals: Averaging Accounting and Harvested Wood Products

Purpose:

This briefing describes a package of officials' preferred recommendations on the introduction of averaging accounting into the Emissions Trading Scheme and the recognition of carbon stored in harvested wood products. These proposals will be brought to Cabinet for agreement in April 2019.

Minister	Action Required:	Minister's Deadline
Minister of Forestry	**Note** and **agree** the recommendat ons contained in this briefing.	Before your meeting with Forestry Ministers on 12 March 2019 at 8:30 am
Minister for Climate Change	**Note** and **agree** the recommendations contained in this briefing.	As soon as possible.

MPI Officials	Name	Position	Work	After Hours
Responsible Manager	Philip Wiles	Team Leader, Domestic Climate Change	04 830 1570	s 9(2)(a)
Principal Author	s 9(2)(a)	Policy Analyst, Domestic Climate Change	s 9(2)(a)	s 9(2)(a)
MfE Officials	**Name**	**Position**	**Work**	**After Hours**
Responsible Manager	Matt Cowie	Manager, Climate Change Policy	027 704 8369	s 9(2)(a)
Responsible Analyst	Kate Timlin	Senior Policy Analyst	s 9(2)(a)	

Key Messages

1. In December 2018 you received three briefings (B18-0931, B18-0932, B18-0933) which collectively described a package of proposed changes to the forestry settings of the New Zealand Emissions Trading Scheme (ETS). They also highlighted areas where further analysis and research was necessary to inform a recommendation.

2. The proposals in the December briefings covered:
   a. the introduction of averaging accounting;
   b. key design details in implementing averaging accounting;
   c. complementary forestry setting proposals; and
   d. options for recognising the forestry sector's contribution to the carbon stored in harvested wood products.

3. These proposals are key parts of a wider work programme, joint with Te Uru Rākau and the Ministry for the Environment, to improve the ETS to better support New Zealand's climate change objectives and goals.

4. This briefing outlines officials' final proposed package of improvements to the incentives for forestry in the ETS, including decisions on the outstanding issues. The briefing then covers the package in more detail explaining how the new ETS settings will work in practice for participants.

5. The proposed changes have been developed with the overarching purposes to increase carbon storage in forests and improve the ability of the ETS to contribute to climate change mitigation in line with international targets. The proposals will provide the greatest benefit to those making the greatest contribution to tho e overarching purposes. However, where possible, proposals have been designed to accommodate participants' different needs and preferences

6. The package of forestry changes also aims to strike a balance between simplifying the scheme for ease of compliance, while still maintaining a level of accuracy to encourage the right behaviour.

7. The key recommendations made in this briefing are:
   a. Averaging accounting is introduced to the ETS, and that it is the compulsory accounting approach for all new registrations of post-1989 forest land (excluding permanent post-1989) after 31 December 2020;
   b. s 9(2)(f)(iv) [redacted]
   c. Forest owners with unregistered existing post-1989 forests, who would like to join the ETS, will have to register that forest before 1 January 2021, if they want to use the status quo accounting approach; and

d. Participants with post-1989 forests under averaging accounting should not be liable to surrender NZUs where an adverse event temporarily impacts the carbon stored in the forest.

8. In addition, officials have provided recommendations for these outstanding issues from the December briefings:

a. The average age of a forest will be defined through harvesting 'age bands' based on the forest type, and rotation length;

b. s 9(2)(f)(iv) [redacted]

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

10. Officials would like to meet with you to discuss any feedback on the final proposals in this briefi g. Later in March you will receive a draft Cabinet paper that will seek decisions for averaging accounting and harvested wood products in April 2019.

11. Suggested talking points for early discussions with relevant Ministers are attached in Appendix One.

Recommendations

12. The Ministry for Primary Industries and the Ministry for the Environment recommend that you:

a) **Note** a review of the ETS concluded in mid-2017 identified issues with the way forestry operates within the ETS that reduce the incentives for post-1989 foresters to enter the scheme.

Noted

b) **Note** that there is a wider package of climate change work underway across Government that is related to improving the ETS.

Noted

c) **Note** that while decisions in this briefing indicate a full package of proposals for averaging, not all decisions will need to be made in April. We will provide you with further advice on detailed decisions to be introduced through regulations, which will be consulted on later in 2019.

Noted

d) **Note** officials will provide you with a draft Cabinet paper by the end of March that will seek decisions on the below proposals.

Noted

The introduction of averaging accounting

e) **Note** carbon stock change, the current accounting approach in the ETS, recognises the short term fluctuations of carbon stored in a rotational forest. These include the temporary reductions that occur at harvest and after an adverse event.

Noted

f) **Note** averaging accounting is an accounting method that only recognises the average amount of carbon stored in a rotational forest over the long term. Under averaging participants earn New Zealand Units (NZUs) up until the forest reaches the age that represents the long term average carbon stock.

Noted

g) **Note** averaging accounting for post-1989 forestry participants will:

- incentivise new forestry planting and additional carbon sequestration;
- better align the carbon entitlements and obligations provided to forestry participants through the Emissions Trading Scheme with how New Zealand accounts for forests internationally after 2021;
- provide a simpler level of accounting and reporting for participants; and
- support key Government programmes in response to climate change, and regional economic development by supporting increased afforestation.

Noted

h) **Agree** our preferred approach is that averaging accounting should be the compulsory accounting approach for all post-1989 forests (excluding permanent post-1989) that choose to register in the ETS after 31 December 2020.

Agreed / Not Agreed

The transition of existing forests

i) s 9(2)(f)(iv) [redacted]

The design of averaging accounting

m) **Agree** the average age for a forest will be calculated using forest type, forest growth rate (rate of carbon storage) and harvest rotation length.

Agreed / Not Agreed

n) **Note** that the definitions of the forest characteristics (l) above are already defined in regulations, and we do not intend to propose that this should be changed.

Noted

o) **Agree** that the average age will be applied to forests using 'age bands', which will be set in regulations. Participants will be able to earn NZUs if they extend their forests' harvest age beyond the default band (which is set to cover the majority of normal behavior), and will be required to surrender NZUs if they harvest "too early", i.e. below the default band.

Agreed / Not Agreed

p) **Agree** post-1989 participants using averaging accounting and whose forests have passed their average age will have different reporting requirements each mandatory emissions return period.

Agreed / Not Agreed

Closing an unintended loophole

q) **Note** the introduction of averaging (as outlined above) creates an opportunity for participants to deforest, satisfy the current deforestation test, and then register in the ETS to enhance the return they will receive.

Agreed / Not Agreed

r) s 9(2)(f)(iv) [redacted]

Noted

u) **Agree** a participant may elect to not surrender units for a post-1989 forest due to the loss of carbon from an adverse event, provided
- the forest is subject to averaging accounting;
- the affected forest is re-established;
- the affected forest is above a minimum size threshold; and
- the forest does not receive units until the carbon stock returns to the amount prior to the adverse event.

Agreed / Not Agreed

v) **Agree** a participant can offset their deforestation liability, for the post-1989 forest land subject to averaging accounting, by planting another forest of at least the same size and carbon stock elsewhere.

Agreed / Not Agreed

Harvested wood products (HWP)

w) s 9(2)(f)(iv) [redacted]

y) s 9(2)(f)(iv) [redacted]

Agreed / Not Agreed

Penny Nelson
Deputy Director-General
Policy and Trade
for Director-General
Ministry for Primary Industries

Hon Shane Jones
Minister of Forestry

/ / 2019

Roger Lincoln
Director
Climate Change
Ministry for the Environment

Hon James Shaw
Minister for Climate Change

/ / 2019

Background

Last year we provided you with information about a package of proposed changes to the forestry settings of the NZ ETS

13. In December 2018 you received three briefings (B18-0931, B18-0932, B18-0933) which collectively described a package of proposed changes to the forestry settings of the NZ ETS. A high level impact analysis of the range of options for each proposal was also attached to the December briefings.

14. The key proposals in that package included:
    a. requiring all post-1989 forests (excluding permanent post-1989) who register in the ETS after 2020 to use a simpler accounting system, averaging, and potentially introduce an optional transition to averaging accounting for most existing post-1989 forestry participants;
    b. not requiring participants using averaging accounting to surrender New Zealand Units (NZUs) to the Crown if their forest carbon stock reduces as a result of a temporary adverse event;
    c. enabling participants using averaging accounting to offset deforestation emissions liabilities by establishing a carbon equivalent forest elsewhere; and
    d. recognising the value New Zealand gains internationally from the carbon stored in harvested wood products (HWP) through direct benefits to forestry sector participants or a research and development fund.

15. Together these changes will help to:
    a. increase New Zealand's overall carbon sequestration;
    b. reduce the financial risk and increase the potential financial return for current and future forestry participants in the ETS;
    c. better align the carbon entitlements and obligations provided to forestry participants domestically through the ETS with how New Zealand accounts for forests and harvested wood products internationally post-2021, reducing potential misalignment risk to the Crown; and
    d. simplify the default administrative requirements and reduce compliance effort for many forestry participants, while at the same time maintaining sufficient flexibility for participants who want to more proactively manage their forest's carbon.

16. The proposed changes will provide the greatest benefit to those making the greatest contribution to the above objectives. For example, those participants who establish new forests will be able to take full advantage of averaging accounting from the beginning of the new forest growth. Participants with existing forests, while they are not having any rights taken away, will not always be better off under all of the proposed changes. However, where possible, proposals have been designed to accommodate participants' different needs and preferences.

17. The package of forestry changes also aims to strike a balance between simplifying the scheme for ease of compliance, while still maintaining a level of accuracy to encourage the right behaviour.

18. These proposals are key parts of a wider work programme to improve the NZ ETS to better support New Zealand's climate change objectives and goals.

19. This wider programme includes further changes to the forestry settings, such as introducing a permanent forestry category and improving the operational forestry settings of the ETS (CAB 18 Min 0606 refers), as well as a series of changes to improve the NZ ETS and support the implementation of the Paris Agreement, led by the Ministry for the Environment.

An early decision for new forests planted in 2019 is being sought from Cabinet ahead of the introduction of averaging

20. Officials have provided you with a Cabinet paper to seek a decision before the end of March (SUB19-0013 / 2019-B-05369 refers) on the eligibility of new forests planted in 2019 to use averaging accounting, if it is introduced. This aims to ensure participants have confidence the upcoming decisions on averaging accounting will apply to the forests they were planning to plant this year.

This briefing contains a complete package of recommended changes to the forestry accounting settings of the ETS that will be provided in a second draft Cabinet paper

21. This briefing contains officials' final package of proposed ETS forestry accounting changes. This final package reflects further analysis and research undertaken since the December briefings, as well as Ministers feedback on those briefings.

22. The briefing also explains how the new accounting approach for the ETS will work in practice for participants, once in place. This includes explaining how the new permanent forestry category will interact with the carbon stock change and averaging accounting approaches.

23. As part of this, we are seeking your agreement on the package of policy decisions, which we will use as the basis to prepare a paper for Cabinet's consideration We will provide you with a draft Cabinet paper so Ministers can take decisions in April.

24. Appendix One provides you with suggested talking points for early engagement with relevant Ministers.

Final Decisions

25. This section contains a high level outline of the key decisions required to introduce averaging accounting into the ETS and recognise the carbon stored in harvested wood products. More detailed descriptions of the below proposals begin on Page 15.

26. Averaging accounting is the recognition of the long term carbon sinks that rotational forests create. Participants using averaging accounting will earn New Zealand Units (NZUs) up to the long term average carbon stock of the forest, as opposed to earning and surrendering NZUs each harvest (the current approach).

We recommend that averaging accounting is required for newly registered forests

27. The introduction of averaging accounting would incentivise the establishment of new forests by providing a simpler accounting approach for participants and reducing the financial risk of entering the ETS. It will also increase alignment between the ETS and how New Zealand accounts for forestry internationally, helping NZ to cost-effectively reach emission reduction targets.

28. **Proposal:** Averaging accounting should be the compulsory accounting approach for all rotational post-1989 forests which apply for ETS registration after 31 December 2020.

s 9(2)(f)(iv) [redacted]

33. s 9(2)(f)(iv) [redacted]

[redacted]

34. The average age of a forest is the age at which it is assumed to have stored its long term carbon stock, over multiple rotations. Including harvest age in the calculation will enable participants to be rewarded for extending their forests' rotation to maximise carbon storage. Additionally, this will discourage early harvest as participants would be required to surrender NZUs to the C own if they harvest below the assumed harvest age.

35. **Proposal:** The forest's average age will be based on the carbon stored in that forest over the long term. While this will be expressed as an 'average age' it will be based on forest growth rate, the type (species) of forest and the length of time between harvests (the longer the rotation age the more carbon is stored over time).

The average age of a forest will be applied to participants through 'age bands'

36. Creating a series of age bands fo different forest types will enable participants to be able to receive addit onal NZUs for extra carbon stored by extending their rotation length beyond the default age band. The use of a 'default age band' will be designed to cover typical management practices and the common harvest ages, for those participants who prefer a simpler approach. The size of the age bands will be decided and consulted on through the regulations development in mid-2019.

37. **Proposal:** The average age of a forest will be applied to participants using a default age band, and additional bands both above and below the default. Participants who wish to extend or shorten their harvest will be able to earn, or required to pay, NZUs in the emissions return which follows a change in age band.

s 9(2)(f)(iv)

[redacted]

42. As participants will no longer earn NZUs above their average carbon stock for BAU forest growth, there is less need for them to continue to submit detailed emissions returns after this point. Simplifying the reporting obligations will decrease both the participants' and Te Uru Rākau's administrative efforts.

43. **Proposal:** Once all of the forest within a carbon accounting area has reached its average age, the participant will have to supply at the end of each MERP:
    a. Dates of harvest;
    b. Dates of replanting;
    c. Specific changes to forest management (e.g. change in forest type, rotation length); and
    d. Deforestation and deregistration (should they occur).

Participants using averaging should not face emissions liabilities for temporary reductions in carbon storage due to adverse events

44. The design of averaging, being a long term measurement of carbon storage, means that adverse events that temporarily reduce carbon storage (for example wind throw or fire) do not need to be recognised.

45. **Proposal:** A forest that is registered under averaging accounting is not required to pay a liability due to an adverse event, as long as the forest's carbon stock is re-established. If the forest is below the average when the event happens, the participant will pause earning NZUs for the affected forest area until the lost carbon stock has been re-established.

Participants with post-1989 plantation forests using averaging accounting should be able to offset their deforestation liabilities once the forest has reached its long term average age

46. Through averaging, a participant will have a large first rotation income of NZUs, followed by a liability should they deforest sometime in the future. This deforestation liability may decrease land use flexibility, where the land may have a more productive and/or appropriate use in the future.

47. **Proposal:** Participants using averaging can offset their deforestation liability by planting another forest of equal or greater size and carbon stock elsewhere. Participants on the carbon stock change approach would be able to use offsetting by first transitioning to averaging. This proposal only extends to post-1989 plantation forests (i.e. not permanent or regenerating indigenous), to maintain environmental integrity and alignment with international rules.

s 9(2)(f)(iv)
[redacted]

51. s 9(2)(f)(iv) [redacted]

[redacted]

The Package in Practice

53. This section describes the ETS forestry accounting package in more detai and outlines how these proposals will work in practice for participants.

54. This section also covers the interactions the averaging accounting proposals will have with the wider forestry package, especially with the permanent forest category.

What is averaging?

55. Averaging is a simpler approach to accounting for forest carbon that removes some of the current barriers to ETS participation including harvest liabilities and the associated administrative requirements

56. Averaging recognises the ong term storage of carbon in rotational forests, by allowing participants to earn up to an assumed long term average carbon stock for their forest. After this point the participant will no longer have liabilities for harvest, provided they eplant. They will also no longer earn New Zealand Units (NZUs) for second and subsequent BAU rotation growth, because they will have already received their full credit for the average carbon stored long term.

Who will use averaging?

Averaging will be compulsory for new registrations of rotational forest after 30 December 2020

57. This means that any rotational forest first established after 30 December 2020 will use averaging, if it is registered in the post-1989 category in the ETS. Any post 1989 forest that was established earlier, but is only registered after that date, will also be required to use averaging.

58. Averaging accounting will simplify the ETS and reduce risk for most forestry participants in the scheme by enabling them to sell a greater amount of their units without the risk of having to buy them back at a higher price to cover harvest liabilities. This will greatly increase the incentive to afforest, and sink more carbon s 9(2)(f)(iv) [redacted]

59. s 9(2)(f)(iv) [redacted]

Averaging will help NZ to meet domestic and international climate change targets

60. Economic modelling estimates that the introduction of averaging could result in commercial afforestation increasing by around 70 percent, which is estimated to add a further 89 million trees to the Governments One Billion Trees target.

61. ETS forest averaging will assist New Zealand in meeting our 2030 climate change emission reduction target. It is estimated that due to the increased afforestation response and extended rotations where viable, an additional 15 million tonnes of carbon dioxide could be removed over the 2021 – 2030 period.

62. Averaging will also increase the alignment between domestic forestry entitlements and obligations in the ETS and how New Zealand internationally accounts for forestry in its climate change targets. This is because averaging accounting will be used for reporting our forestry emissions and removals towards our first Nationally Determined Contribution (NDC) from 2021-30 under the Paris Agreement.

63. Applying averaging at a domestic level will, in the short term, create uncertainty over unit supply in the ETS (discussed below). Over the long-term, however, the better alignment between domestic and international approaches will improve the effectiveness of the ETS in providing a price signal that reflects the required level of emissions reductions to meet climate change targets.

What are the wider implications of averaging for the ETS?

64. s 9(2)(f)(iv) [redacted]

s 9(2)(f)(iv)

71. This long term alignment with international accounting will also improve the effectiveness of the ETS in providing a price signal that drives the right level of mitigation to meet international targets.

72. s 9(2)(f)(iv) [redacted]

How will averaging work?

Averaging is a simpler accounting approach that reduces participants' risks

77. Averaging allows participants to be rewarded for planting new post-1989 eligible areas, and then have less compliance and ongoing administrative burdens once a forest reaches its average.

78. As harvest liabilities are removed, participants can sell units they receive in the first rotation with reduced risks compared to the status quo. This makes the ETS far more accessible to non-corporate forest owners, or farm-foresters who may not have the land or business structures to manage risk across an estate.

79. This reduced risk is expected to be a significant driver of afforestation. Economic modelling completed by the University of Canterbury in 2019 estimated that the change in accounting approach could result in increased commercial planting of around 70 percent[5] (from around 13,300 hectares per year gradually increasing to around 23,000 hectares per year with ETS averaging accounting).

A forests average carbon storage is specific to that forest and will take into account harvest age

80. An ETS participant is rewarded for storing carbon in their forest. Using the averaging approach, this means they receive NZU's until the forest has reached the average level of carbon that it is expected to store over the long term, represented by an age.

81. The average carbon stored in a forest over the long term is a function of the growth rate of the forest, the type of forest, and the length of time between harvests (the longer the rotation age the more carbon is stored over time). Forests will be put into harvest age bands (e.g. all pinus radiata harvested between 25 and 30 years) to determine at which age the average carbon stock is reached.

82. After the forest has grown to reach its long term average carbon stock, only changes to its long term average are considered. As part of ongoing management, the participant can change the forest type (by planting another species), or could change the forests rotation length. In doing so, they will be rewarded with NZUs for behaviour that increases carbon storage beyond their current age band, and will have to surrender NZUs for behaviour that reduces carbon storage below their band.

Averaging reduces a participants risk to adverse events

83. Occasionally forests face risk from adverse events such as wind throw or fire. Participants using averaging will not be required to account for the carbon loss due to adverse events, as long as the forest is re-established afterwards. This is because it would be a costly process to recoup NZUs from the participant to account for what would only be a small blip in the long term carbon storage of the forest, measured across many years.

84. If an adverse event occurs when a forest is first established, and still earning units for growth up to the long term average (up to the first 18 years of its life), the participant will stop earning NZUs. Once the forest is re-established, and has re-established the carbon storage level it had when the event first occurred, the participant will then continue to earn NZUs for that forest.

[5] The University of Canterbury modelling and analysis assumed a carbon price of $25/NZU, average log prices and land value for the last two years). The report also noted potential barriers to afforestation, in particular the availability of seed, seedlings from nurseries, labour (planting crews), and suitable land.

85. Once a forest has passed its average carbon storage, and the participant is only accounting for changes to the long term average, there will be no liability required for carbon stock loss due to an adverse event. The participant will be required to notify that the adverse event has occurred and supply details associated with the event.

Offsetting of deforestation liabilities for post-1989 participants using averaging will increase land use flexibility

86. If participants have a more productive use for their forest land, or find that it is no longer suited to forestry, they have to remove the land from the ETS, deforest the land and surrender the net number of NZUs issued to the forest. Currently this is a significant cost[6] and would be higher if the NZU price increases (as is expected).

87. Currently pre-1990 forests are able to offset their deforestation NZU surrender liabilities if the participant establishes an equivalent forest elsewhere. In December 2018 Cabinet agreed to a set of operational improvements to the current rules for pre-1990 forests.

88. Establishing another forest of at least equivalent area and carbon stock, the atmosphere sees no overall reduction in carbon storage. Allowing offsetting recognises this. It will also allow participants to adapt their land use to the most appropriate use. When Te Uru Rākau is satisfied that the forest is established and will store the same level of carbon as the previous forest, all liabilities for deforestation are removed.

89. Once established, the offset forest will be treated as an averaging forest that has the same average storage as the previous forest. The participant will then still be able to change forest management or species to increase carbon storage in response to changing carbon prices and would be liable for any reductions in carbon stock.

90. This provision will only apply to post-1989 plantation forests. Other post-1989 forests such as regenerating indigenous or permanent forests have many environmental co-benefits (for example biodiversity) that would be undermined if deforestation was easily enabled. Limiting offsetting to plantation forests additionally aligns with the international accounting rules.

91. We do not propose to offer offsetting to existing forests using the stock change carbon accounting approach. There is less need and therefore rationale to apply this rule, as deforestation liabilities are much lower for forests accounted for using the stock change approach, having less of an impact on land use flexibility. Enabling continued use of the stock change accounting approach through offsetting could also further increase the misalignment between domestic and international accounting in the ETS.

[6] For a radiata pine forest in the Auckland region, the cost would be $12,450 per hectare at a NZU price of $25, assuming registration from first establishment.

92. s 9(2)(f)(iv) [redacted]

[redacted]

[redacted]

93. The more existing ETS participants who decide to use averaging, the greater the alignment will be between the ETS accounting for forestry and New Zealand's accounting for forestry towards climate change targets.

94. s 9(2)(f)(iv) [redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

98. s 9(2)(f)(iv) [redacted]

[redacted]

How will the permanent post-1989 forest activity interact with the introduction of averaging?

Any post-1989 forest will be able to be registered as a permanent post-1989 forest

102. Cabinet decided in December 2018 that any post-1989 forest in the ETS (exotic or native) will be able to be registered as a permanent post-1989 forest, regardless of when it was first registered.

103. Existing post-1989 forests using the stock change accounting approach will be able to transition to the permanent forest category. It will be a simple transition for these participants, as there will be no change in the accounting approach used.

104. Post-1989 forests under averaging will be able to transition to permanent post-1989 forest at any time. They will earn 'permanent' units from the time they make the decision to shift to a permanent post-1989 forest.

105. When participants register in the ETS from 1 January 2021 they will have the choice of registering the post-1989 under the averaging accounting approach, or under the permanent post-1989 forest activity.

Harvested Wood Products

How will harvested wood products be recognised?

106. Currently, a large proportion of residues are domestically turned into short lived products such as paper, or shipped overseas as low value products which will be used for short lived purposes.

107. s 9(2)(f)(iv) [redacted]

109. s 9(2)(b)(ii) [redacted]

110. s 9(2)(f)(iv) [redacted]

112. s 9(2)(f)(iv) [redacted]

113. s 9(2)(f)(iv) [redacted]

[redacted]

[redacted]

Next steps

116. Officials would like to meet with you to discuss any feedback on the final proposals in this briefing.

117. Before the end of March you will receive a draft Cabinet paper that will seek decisions for all of these issues.

Appendix One: Suggested Talking Points with relevant Ministers

1. These proposed changes will increase the incentive to establish new forests that store carbon, improve the ability of the ETS to contribute to climate change mitigation in line with international targets, and improve the ETS for many forestry participants.

2. The introduction of averaging accounting could:
   a. result in an increase of commercial afforestation by up to 70 per cent;
   b. add a further 89 million trees towards the One Billion Trees target;
   c. lead to removals of an addition 15 million tonnes of carbon dioxide between 2021-2030; and
   d. reduce the cost of meeting our 2030 target by $844 million dollars.

3. Emissions removals from forestry will therefore be an important factor in New Zealand's ability to reach our 2030 and 2050 target, and will help to reduce the pressure on other sectors such as agriculture and transport in the short term.

4. Providing land owners with an accounting approach that offers less financial risk and more administrative simplicity will help to incentivise land use diversification into forestry. This will particularly appeal to small scale foresters, who may have previously been unable or unwilling to enter the ETS due to the current settings.

5. Averaging accounting is a more simple way to account for the carbon stored in a rotational production forest over time, as it removes the need to pay harvest liabilities every rotation.

6. Without the possible financial liability of a harvest or temporary adverse event, the participant will be able to trade these NZUs in the market at a less risk than before, making the ETS a more attractive scheme to enter.

7. This approach will particularly appeal to small foresters who do not have the administrative capacity of large corporate foresters, and have less ability to spread risk across a forest estate.

8. Introducing averaging accounting will also help to align our domestic emissions with international accounting from 2021, as New Zealand will begin using averaging for international accounting as we work towards the 2030 target under the Paris Agreement.

9. I is important that we recognise the existing rules that participants have already signed up to, especially as many foresters have existing contracts for the full length of their current rotation. s 9(2)(f)(iv) [redacted]

10. s 9(2)(f)(iv) [redacted]

[redacted]

12. The package of forestry changes aims to strike a balance between simplifying the scheme for ease of compliance, while still maintaining a level of accuracy to encourage the right behaviour.

13. These forestry accounting settings will therefore provide the participan w th the flexibility needed to maximise the benefit from their forest, as they wish.

    a. s 9(2)(f)(iv) [redacted]

    [redacted]

    [redacted]

14. These settings, alongside the One Billion Trees programme, will incentivise the forestry sector to plant the right tree, in the right place, for the right purpose, as they provide the ability to affordably diversify land use.

15. Simplicity in the scheme will be maintained and improved for participants to encourage easy and increasing participation.

    a. Reporting requirements will significantly decrease once the forest has rea hed its long term average age;

    b. s 9(2)(f)(iv) [redacted]

[redacted]

17. These policies working together will maximise the carbon sequestered and stored by our rotational forests, and will help New Zealand in our transition to a low emissions future.

Ministry for the Environment
Manatū Mō Te Taiao

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Cover note - updated versions of three NZ ETS tranche two Cabinet papers

Date Submitted:	14 March 2018	Tracking #: 2019-B-05417	
Security Level	IN CONFIDENCE	MfE Priority:	Non-Urgent

	Action sought:	Response by:
To Hon James Shaw, Minister for Climate Change	Note this Briefing	

Actions for Minister's Office Staff	**Return** the signed report to MfE.
Number of appendices and attachments 3	Titles of appendices and attachments: 1. Appendix 1 Draft Cabinet Paper NZ ETS Tranche Two – *Improving Transparency in the NZ ETS* 2. Appendix 2 Draft Cabinet Paper NZ ETS Tranche Two – *Enabling Future Price Controls* 3. Appendix 3 [redacted] s 9(2)(f)(iv) [redacted]
Note any feedback on the quality of the report	

Ministry for the Environment contacts

Position	Name	Cell phone	1st contact
Principal Author	Elizabeth Rine		
Responsible Manager	Matthew Cowie	021 531 288	✓
Director	Roger Lincoln	027 290 7625	

Cover note - updated versions of three NZ ETS tranche two Cabinet papers

Key Messages

1. Attached are three draft Cabinet papers on tranche two New Zealand Emissions Trading Scheme (NZ ETS) amendments to the Climate Change Response Act 2002 (CCRA) for Ministerial consultation.
    a. New Zealand Emissions Trading Scheme tranche two: Improving transparency
    b. New Zealand Emissions Trading Scheme tranche two: enabling future price controls
    c. s 9(2)(f)(iv)
2. These papers are scheduled to be presented at the Cabinet Environment Committee on 4 April 2019.
3. You received first drafts of these Cabinet papers last week and provided feedback. This covering brief provides you with an overview of changes made since then, in response to your feedback and further on the draft papers.

Changes to all three draft Cabinet papers

4. Several changes were made across all three papers. These are:
    a. including a reference to the international carbon markets work, and the need to continue considering the impact of our ability to link when making NZ ETS changes
    b. updating the financial implication section to be clear that these papers do not seek any additional funding
    c. incorporating your comments and agency feedback
    d. amending the papers to take a consistent approach to the several sections
    e. making minor editorial and formatting changes

NZ ETS tranche two: Improving transparency

5. Changes to this paper are:
    a. adding a recommendation to remove conflicting provisions that currently limit the EPA to only publishing aggregate data.
    b. more discussion of risks that NZ ETS businesses may face due to publication of individual level data
    c. clarifying the recommendations

NZ ETS tranche two: enabling future price controls

6. Changes to this paper are:
    a. amending the 'backstop' for removing the FPO to be the end of 2022 (rather than 2025)
    b. clarifying that the Government may, but is not required to, make regulations for the cost containment reserve and price floor as part of the coordinated decision-making process (rec 82)

NZ ETS tranche two: cancellation and replacement of Kyoto units in private accounts

7. Changes to this paper are:
    a. further explanation of the status of NZ AAUs compared to CP1 Kyoto units other than NZ AAUs
    b. clarifying that CP1 Kyoto units other than NZ AAUs are of negligible value, and updated recommendations to reflect this (para 37 and rec 11)
    c. clarifying the rationale behind taking this decision this now, emphasising the importance of acting consistently with undertakings to NZ ETS participants, rather than the importance of following through with previous Cabinet decisions

Ministerial consultation

8. We will work with your office to support Ministerial consultation on the attached papers.
9. Following your discussion with your colleagues at the ENV meeting on 14 March 2019, we are working on additional material on the impacts of industrial allocation phase out options.
10. The other NZ ETS tranche two decisions are focused on setting up an enduring framework for the NZ ETS. They will enable the Government to make later decisions on the NZ ETS settings which will support New Zealand to meet its emission reduction targets. It is those later decisions on NZ ETS settings, such as the volume of units to be auctioned or the cost containment reserve settings, which will have economic impacts.
11. We would like to discuss options for communicating this to your colleagues at the officials' meeting on Monday. For example, we could provide a table for your colleagues outlining the current decisions and later decisions to indicate where decisions could have significant economic consequences.

Signature

14/3/19.

Matthew Cowie,
Manager, Climate Change Policy **Date**

Hon James Shaw
Minister for Climate Change **Date**

Ministry for the Environment
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Cover note – another update of three NZ ETS tranche two Cabinet papers

Date Submitted:	20 March 2018	Tracking #: 2019-B-05430	
Security Level	IN CONFIDENCE	MfE Priority:	Non-Urgent

	Action sought:	Response by:
To Hon James Shaw, Minister for Climate Change	Note this Briefing	

Actions for Minister's Office Staff	**Return** the signed report to MfE.
Number of appendices and attachments 3	Titles of appendices and attachments: 1. Appendix 1 Draft Cabinet Paper NZ ETS Tranche Two – *Improving Transparency in the NZ ETS* 2. Appendix 2 Draft Cabinet Paper NZ ETS Tranche Two – *Enabling Future Price Controls* 3. Appendix 3 [redacted] s 9(2)(f)(iv) [redacted]
Note any feedback on the quality of the report	

Ministry for the Environment contacts

Position	Name	Cell phone	1st contact
Principal Author	Elizabeth Rine		
Responsible Manager	Matthew Cowie	021 531 288	✓
Director	Roger Lincoln	027 290 7625	

Cover note – another update of three NZ ETS tranche two Cabinet papers

Key Messages

1. Attached are updated versions of Cabinet papers on tranche two New Zealand Emissions Trading Scheme (NZ ETS) amendments to the Climate Change Response Act 2002 (CCRA) for Ministerial consultation.
    a. New Zealand Emissions Trading Scheme tranche two: Improving transparency
    b. New Zealand Emissions Trading Scheme tranche two: enabling future price controls
    c. [redacted] s 9(2)(f)(iv)
2. These papers are scheduled to be presented at the Cabinet Environment Committee on 4 April 2019.
3. You received updated versions drafts of these Cabinet papers last week and provided feedback. This covering brief provides you with an overview of changes made since then, in response to your feedback on the updated versions.

Changes to all three draft Cabinet papers

4. Several changes were made across all three papers. These are:
    a. a plain english edit
    b. incorporating agency feedback
    c. making minor editorial and formatting changes

Signature

Matthew Cowie,
Manager, Climate Change Policy **Date**

Hon James Shaw
Minister for Climate Change **Date**

Cover note – another update of three NZ ETS tranche two Cabinet papers

Key Messages

1. Attached are updated versions of Cabinet papers on tranche two New Zealand Emissions Trading Scheme (NZ ETS) amendments to the Climate Change Response Act 2002 (CCRA) for Ministerial consultation.
    a. New Zealand Emissions Trading Scheme tranche two: Improving transparency
    b. New Zealand Emissions Trading Scheme tranche two: enabling future price controls
    c. New Zealand Emissions Trading Scheme tranche two: cancellation and replacement of Kyoto units in private accounts
2. These papers are scheduled to be presented at the Cabinet Environment Committee on 4 April 2019.
3. You received updated versions drafts of these Cabinet papers last week and provided feedback. This covering brief provides you with an overview of changes made since then, in response to your feedback on the updated versions.

Changes to all three draft Cabinet papers

4. Several changes were made across all three papers. These are:
    a. a plain english edit
    b. incorporating agency feedback
    c. making minor editorial and formatting changes

Signature

20/3/19

Matthew Cowie,
Manager, Climate Change Policy **Date**

Hon James Shaw
Minister for Climate Change **Date**

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Publication of New Zealand's Greenhouse Gas Inventory 1990-2017 and update of the 2020 Net Position

Date Submitted:	10 April 2019	Tracking #: 2019-B- 05463	
Security Level	none	MfE Priority:	Non-Urgent

	Action sought:	Response by:
To Hon James Shaw, Minister for Climate Change	Note this Briefing	
CC Hon Grant Robertson, Minister of Finance		
CC Hon Phil Twyford, Minister of Transport		
CC Hon Dr Megan Woods, Minister for Energy and Resources		
CC Hon David Parker, Minister for the Environment		
CC Hon Nanaia Mahuta, Associate Minister for the Environment		
CC Hon Damien O'Connor, Minister of Agriculture		
CC Hon Shane Jones, Minister for Forestry		
CC Hon Eugenie Sage, Associate Minister for the Environment		

Actions for Minister's Office Staff	**Return** the signed briefing to MfE
Number of appendices and attachments 6	Titles of appendices and attachments (ie separate attached documents): 1. Talking points on the Greenhouse Gas Inventory 2. New Zealand s Greenhouse Gas Inventory 1990-2017 Snapshot 3. Summary f key figures and trends 4. New Zealand s Greenhouse Gas Inventory 1990-2017 – draft press release 5. New Zealand's Greenhouse Gas Inventory 1990-2017 – Executive Summary 6. New Zealand's Greenhouse Gas Inventory 1990-2017
Note any feedback on the quality of the report	

Ministry for the Environment contacts

Position	Name	Cell phone	1st contact
Principal A thor	Heather Martindale		
Responsible Manager	Dylan Muggeridge	0220096471	✓
Director	Janine Smith	0211447617	

Publication of New Zealand's Greenhouse Gas Inventory 1990-2017 and update of the 2020 Net Position

1. This briefing note provides an overview of the release of New Zealand's Greenhouse Gas Inventory 1990-2017 and an update on the 2020 Net Position report, which tracks progress towards New Zealand's 2020 target.

2. Talking points and a summary of key figures and trends are included as appendices to this briefing note. We have also prepared a draft press release for you to welcome the publication of the Inventory.

Key Messages

3. On April 11 2019 at 9am, the Ministry for the Environment releases:
   - New Zealand's annual greenhouse gas inventory (the Inventory)
   - An update on the 2020 Net Position

4. The Inventory is the official annual estimate of greenhouse gas emissions and removals in New Zealand and is a mandatory reporting obligation under the United Nations Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

5. The Inventory is a New Zealand Tier 1 statistic and is subject to Cabinet-approved release protocols under the Official Statistics System. Therefore, we are only able to provide you with the Inventory figures 24 hours before the release of the Inventory, which this year will be Thursday 11 April 2019 at 9am.

6. The latest Inventory, published in April 2019 contains data from 1990 to 2017 inclusively. The Inventory year is 15 months behind the current calendar year to allow for time to collect and process the Inventory data and prepare its publication.

7. Key findings from the Inventory include the following:
   - New Zealand's gross emissions[1] have increased by 23.1 per cent since 1990, mainly due to increased methane emissions from dairy cattle and increased carbon dioxide emissions from road transportation.
   - Net emissions[2] have increased by 65 per cent since 1990 due to an increase in planted forestry harvesting and the increase in gross emissions.
   - Between 1990 and 2017, New Zealand's gross methane emissions increased by 6.2 per cent and carbon dioxide (CO_2) increased by 41.5 per cent.
   - The Agriculture and Energy sectors continue to be the largest contributors to New Zealand's emissions, accounting for 89% of gross emissions in 2017 (48.1 per cent and 40.7 per cent respectively).
   - Between 2016 and 2017, gross emissions increased by 2.2 per cent largely due to an increase in CO_2 emissions from road transport (6.3 per cent) and an increase of CO_2 emission from public electricity and heat production (18.2 per cent), largely from fossil fuel generated electricity production as there was a drought in 2017 leading to lower electricity

[1] Gross emissions include those from Agriculture, Energy, Industrial Processes and Product Use (IPPU), Waste and Tokelau.

[2] Net emissions consist of gross emissions combined with emissions and removals from the LULUCF sector

production from hydro sources.

- In 2017, the Land Use, Land-Use Change and Forestry (LULUCF) sector offset 29.6 per cent of New Zealand's gross emissions.

8. Tokelau is included in the Inventory for the first time. This is a result of New Zealand having extended its ratification of the Paris Agreement and the UNFCCC to Tokelau in 2017. Between 2016 and 2017, Tokelau contributed 0.004 per cent to New Zealand's gross emissions.

9. The 2020 Net Position report is a domestic report, which shows New Zealand's progress towards its 2020 emissions reduction target. It shows that New Zealand is on track to meet its 2020 target of reducing emissions to five per cent below 1990 levels. This target will be achieved by using a combination of eligible removals from forestry and land use activities[3] included in the Kyoto Protocol, and use of surplus units that were carried over from the first commitment period.

Background

Greenhouse Gas Inventory

10. The Inventory is the official annual estimate of greenhouse gas emissions and removals in New Zealand. Submitting an annual inventory is one of New Zealand's mandatory reporting obligations under the UNFCCC and the Kyoto Protocol. The Inven ory must be published by the Ministry for the Environment by 15 April each year

11. The Inventory production is a collaboration between the Ministry for the Environment (MfE), the Ministry of Business, Innovation and Employment, the Ministry for Primary Industries, the Environmental Protection Authority and the Ministry of Foreign Affairs and Trade.

12. The Inventory is a New Zealand Tie 1 statistic and is subject to Cabinet-approved release protocols under the Official Statistics System. Therefore, we are only able to provide you with the Inventory figures 24 hours b fore the release of the Inventory, which this year will be Thursday 11 April 2019 at 9am.

13. The Inventory is severa hundred pages and is accompanied by numerous supporting electronic data tables which are published in full on both the MfE and UNFCCC websites. A summary of key findings called "Inventory snapshot" and an interactive tool that provides a visual display of New Zealand's emissions are published on the MfE website alongside the Inventory to provide information to the public in more accessible formats.

14. The Invento y follows a process of continuous improvement. Each year improvements are made to the methodologies used to calculate emissions and removals, and it is good practice to recalculate the whole time-series (back to 1990) to reflect these methodological improvements. This means that historical emissions and removals change from year to year.

15. As the Inventory forms part of our international reporting obligations under the UNFCCC and the Kyoto Protocol, the Inventory is peer-reviewed by international experts after it has been published. We expect experts will review the Inventory in October this year, and provide any recommendations for further improvement early next year.

16. Emissions from Tokelau have been included in the Inventory for the first time as a result of New Zealand having extended its ratification of the Paris Agreement and the UNFCCC to include Tokelau in 2017. While Tokelau's emissions are very small (0.004% of New Zealand's gross emissions), including Tokelau is a significant improvement for this Inventory.

[3] This is a subset of emissions and removals reported for LULUCF under the United Nations Framework Convention on Climate Change

Net Position

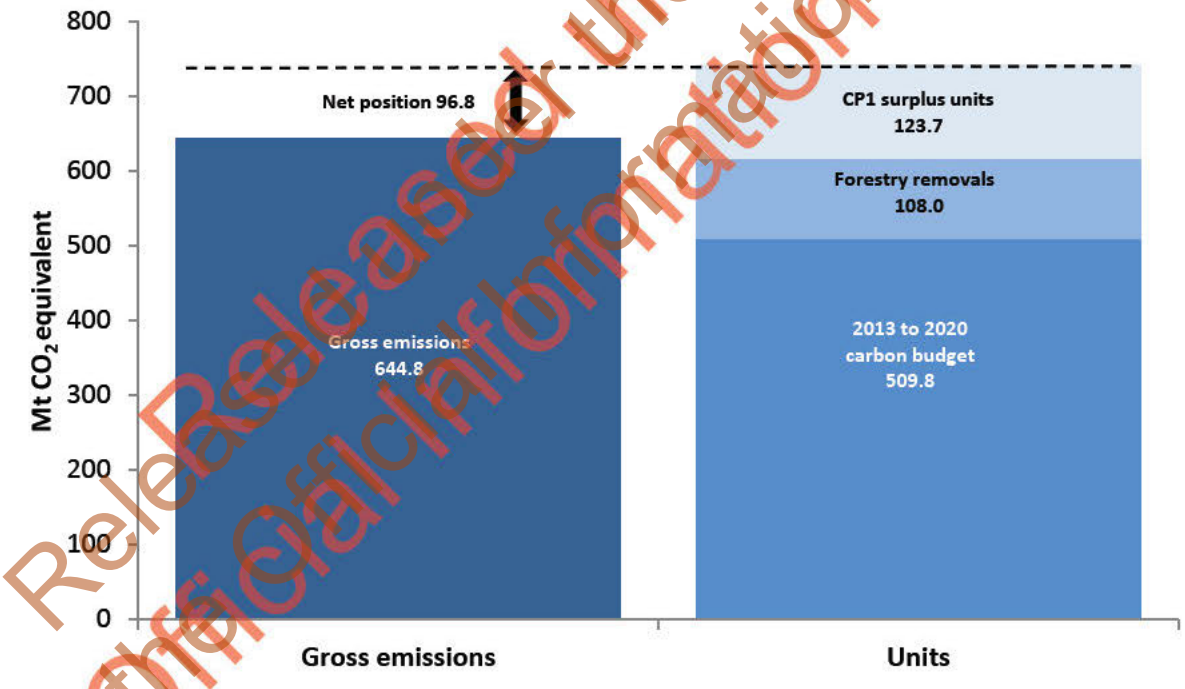
17. The Net Position is based on New Zealand's historical emissions (2013–2017) and projected emissions (2018–2020). We recalculate how New Zealand is tracking towards its 2020 emissions reduction target[4] when the Inventory is updated.

18. The Net Position is not a mandatory requirement of the UNFCCC, however it provides transparency to New Zealanders on how New Zealand is tracking towards its 2020 target.

19. The Net Position shows that New Zealand will meet its 2020 target and have a surplus of units. As per figure 1, New Zealand's Net Position is composed of the difference between projected gross emissions for 2013–2020 (644.8 million tonnes of CO_2 equivalent), and:

    - a carbon budget of 509.8 million units
    - projected carbon dioxide removals from forestry and land-use activities included in the Kyoto Protocol corresponding to 108.0 million units
    - a surplus of 123.7 million units from the first commitment period of the Kyoto Protocol (2008–2012). This Net Position shows that an estimated 27.0 million of these units will be needed to meet the 2020 target

Figure 1: 2020 Net Position



Note – the data in the figure is rounded to one decimal place.

Risks and mitigation

20. The Zero Carbon Bill is looking to set targets for biogenic methane and all other gases, including CO_2. The Inventory will show that increases in CO_2 (in particular from road transport) are the main driver behind the increase in gross emissions between 2016 and

[4] To reduce emissions to 5 per cent below 1990 levels by 2020

2017. Our advice has acknowledged that both CO_2 and biogenic methane need to be addressed in setting a new target for 2050, in line with the latest available science.

Next steps

21. We will publish the Inventory and Net Position at 9am on Thursday 11 April 2019. We will also make an official submission of the Inventory to the UNFCCC secretariat through an online portal. The Inventory will subsequently be published on the UNFCCC website.

22. Further briefing material is provided in the appendices, including:

    - Talking points in Appendix 1
    - A "snapshot summary" of the Inventory in Appendix 2
    - Key figures and trends in Appendix 3
    - Copies of the Inventory's executive summary and of the whole Inventory in Appendices 5 and 6.
    - We have also provided a draft press release for you to welcome the publication of the Inventory (Appendix 4). We will liaise with your office to coordina e the publication of the Inventory and this press release.

23. We have also provided some further briefing material o your office, and will be available to assist you and your office with any queries following publication of the Inventory.

Recommendations

24. We recommend that you:

    a) Note that the Inventory and the 2020 Net Position are released on 11 April 2019 at 9am

    b) Note the provision of the attached supplementary materials which include a copy of the Inventory, a summary of the report the Inventory snapshot), a summary of key figures and trends, alking points, a draft press release, and the executive summary of the Inventory

Signature

Janine Smith
Director
Climate Change **Date**

Hon James Shaw
Minister for Climate Change **Date**

Appendix 1: Talking points – New Zealand's Greenhouse Gas Inventory 1990-2017 and the 2020 Net Position report

- The Ministry for the Environment (MfE) has released the latest annual Inventory of New Zealand's anthropogenic greenhouse gas emissions and removals, the Inventory. This is information we report to the United Nations every year.
- The Inventory informs MfE's policy recommendations on climate change, and enables us to monitor progress towards our emissions reduction targets.
- New Zealand's 2020 Net Position report which tells us how we are tracking towards our 2020 target of reducing emissions to 5 per cent below 1990 levels.

Key findings in the Inventory

- New Zealand's gross emissions[5] have increased 23.1 per cent since 1990.
- Methane from dairy cattle digestive systems and carbon dioxide from road transportation have contributed the most to the increase in gross emissions since 1990.
- Between 2016 and 2017, gross emissions increased by 2.2 per cent, mainly from an increase in emissions from road transport and fossil fuel-generated electricity production.
- In 2017 the Agriculture and Energy sectors were the two largest contributors to New Zealand's gross emissions, at 48.1 per cent and 40.7 per cent respectively.
- The Land Use, Land-Use Change and Forestry (LULUCF) sector offset 29.6 per cent of New Zealand's gross emissions.
- Net emissions[6] have increased by 65 per cent since 1990 because of increased levels of plantation forest harvesting and the increase in gross emissions.
- In 2017, approximately 6,536 hectares of new forest were planted and 4,007 hectares deforested.

Significant recalculations from the 2018 Inventory submission

Calculations made in the 2018 Inventory submission can be improved due to updates in science, knowledge or methodology. In such circumstance it is good practice to recalculate the whole time series from 1990 to the latest reporting year, to ensure consistency across the time series.

In the 2019 Inventory submission there have been two significant recalculations:

- The greatest contribution to the increase in estimates for gross emissions across the time series came from the Waste sector, due to a correction in calculations for emissions from managed landfills.
- The greatest contribution to the increase in estimates for net emissions across the time series came from the LULUCF sector due to an increase in the accuracy of the estimations of activity data with the publication of the new 2016 Land Use Map.

[5] Gross emissions are the total emissions from the Agriculture, Energy, Industrial Processes and Product Use (IPPU) and Waste sectors as well as emissions from Tokelau.

[6] Net emissions are made up of gross emissions combined with emissions and removals from the LULUCF sector

The 2020 Net Position report

New Zealand is projected to meet its 2020 emissions reduction target to reduce greenhouse gas emissions to 5 per cent below 1990 with a surplus of units to spare.

What the Government is doing to reduce emissions

Emissions reduction target

- The Net Position report shows New Zealand is on track to meet its current 2020 emissions reduction target, using a combination of eligible removals from forestry and land use activities included in the Kyoto Protocol and surplus units from the first commitment period.
- However, we need to do more to meet our future targets and to transition to a resilient, net zero emissions economy.
- That is why the Government is introducing new legislation, which will set in law a bold new 2050 emissions reduction target for New Zealand and establish an independent Climate Change Commission to keep future governments on track to meet New Zealand's climate change goals.

Agricultural emissions

- Expansion in the dairy industry has largely led to the increases in fertiliser use and methane emissions in the agricultural sector.
- The Interim Climate Change Committee appointed by the Government in April 2018 is currently working to provide advice on options to reduce agricultural greenhouse gas emissions. The Committee will be presenting its report to the Government by the end of April 2019.
- The Committee's findings will be considered by the Government with the intention to make further policy decisions in 2019. The Committee is expected to make recommendations and provide advice on whether and how agriculture comes into the NZ ETS later this year.
- In the meantime we will continue to invest in research and technology that can reduce agricultural emissions while increasing productivity and profitability for farmers.

We are currently reviewing the NZ ETS to ensure it can best help us meet our 2030 target under the Paris Agreement

- The removal of the one-for-two measure came into effect in January 2019, meaning all participants are now paying the full price of their emissions.
- The NZ ETS work programme is focusing on strengthening the overall framework and coordination of the NZ ETS to deliver on our Paris target.

The Government's target is to plant 1 billion trees in the next 10 years

- We are progressing a work programme to encourage planting of a mix of permanent and harvestable forestry, using both exotic and native tree species on private, public and Māori-owned land.
- The Government has a programme to enter into commercial arrangements (including lease and joint venture contracts) to develop up to 24,000 hectares of plantation forestry on privately-owned land.

- Government funds are available for grants, schemes and partnerships to undertake larger-scale catchment level planting projects, or to develop collaborative initiatives to address wider enabling factors such as labour and training, science and innovation, and information and extension.

- The government has recently announced changes to the NZ ETS for forestry as part of broader reforms to make the scheme fit-for-purpose. These include a adding a new accounting approach, which will reduce costs and complexities for forest owners, and increase the incentive to plant trees. A number of other operational improvements will also simplify the scheme's operation.

Emissions from road transport

- The Government Policy Statement on Land Transport (GPS) released last year includes a priority to reduce greenhouse gas emissions from transport. The GPS increased funding for public transport by 68 percent, and more than doubled investments in cycling and walking. This includes Government investing $1 billion in 2018 in specific projects, such as the City Rail Link.

- The Government has developed a low emissions vehicle package that includes:

    - The proposed introduction of a vehicle fuel efficiency standard

    - Continued investment through the Low Emissions Vehicle Contestable Fund to encourage innovation and investment to accelerate the uptake of electric and other low emission vehicles.

    - Actively working to phase down the emissions produced by the Government fleet.

Including Tokelau in the Inventory

- Emissions from Tokelau have been included for the first time in the Inventory as a result of New Zealand having extended its ratification of the Paris Agreement and UNFCCC to Tokelau in 2017.

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Appendix 2: New Zealand's Greenhouse Gas Inventory 1990-2017 Snapshot

Appendix 3: Summary of key figures and trends

Appendix 4: New Zealand's Greenhouse Gas Inventory 1990-2017 – press release

Appendix 5: New Zealand's Greenhouse Gas Inventory 1990-2017 – Executive Summary

Appendix 6: New Zealand's Greenhouse Gas Inventory 1990-2017