Reference: 20160323

18 October 2016

Thank you for your Official Information Act request, received on 23 August 2016. You requested the following:

> *"• A copy of all advice, listed by date and title, regarding agricultural emissions since 1 January 2015*
> *• A copy of all correspondence, sent or received, regarding agricultural emissions since 1 January 2015*
> *• A copy of all briefings, listed by date and title, regarding agricultural emissions since 1 January 2015*
> *• A copy of all reports, listed by date and title, regarding agricultural emissions since 1 January 2015*
> *• A copy of all memos, listed by date and title, regarding agricultural emissions since 1 January 2015"*

On 14 September 2016, you agreed to rescope the request to:

> *"A copy of all* ***substantive*** *correspondence with formal advice, sent or received, regarding agricultural emissions since 1 January 2015".*

On 21 September I extended the time limit for deciding on your request by an additional 20 working days.

Information Being Released

Please find enclosed the following documents:

Item	Date	Document Description	Proposed Action
1.	28 May 2015	Email and attached Aide Memoire: Conditional Climate change targets	Release in full
2.	23 June 2015	Email and attached Aide Memoire: Climate Change post 2020 target	Release in part
3.	20 July 2015	Letter to FEC re climate change target cost figures	Release in part
4.	2 February 2016	FEC Briefing: Climate Change Issues February 2016	Release in part
5.	26 May 2016	FEC Briefing: Climate Change Issues June 2016	Release in part

I have decided to release the relevant parts of the documents listed above, subject to information being withheld under one or more of the following sections of the Official Information Act, as applicable:

- the security or defence of New Zealand, section s6(a) – to avoid prejudicing the security or defence of New Zealand or the international relations of the Government of New Zealand
- personal contact details of officials, under section 9(2)(a) – to protect the privacy of natural persons, including deceased people
- confidential information, under section 9(2)(ba)(i) – to protect information that is subject to an obligation of confidence, or that was or could be provided under legal compulsion, and where releasing the information would be likely to prejudice the supply of similar information in the future - and it is in the public interest that such information should continue to be supplied
- advice still under consideration, under section 9(2)(f)(iv) – to maintain the current constitutional conventions protecting the confidentiality of advice tendered by ministers and officials, and
- names and contact details of junior officials and certain sensitive advice, under section 9(2)(g)(i) – to maintain the effective conduct of public affairs through the free and frank expression of opinions.

Information Publicly Available

The following information is also covered by your request and is publicly available on the Treasury and Parliament websites:

Item	Date	Document Description	Website Address
1.	25 August 2016	Previous Treasury OIA response *20160283 Agricultural Emissions*	http://www.treasury.govt.nz/downloads/pdfs/oia/oia-20160283.pdf
2.	23 February 2015	Minister of Finance PQ by Dr Russel Norman	https://www.parliament.nz/en/pb/order-paper-questions/written-questions/document/QWA_00675_2015/675-2015-dr-russel-norman-to-the-minister-of-finance

Accordingly, I have refused your request for the above documents under section 18(d) of the Official Information Act – the information requested is or will soon be publicly available.

Some relevant information has been removed from documents listed in the above table and we believe this information should continue to be withheld under the Official Information Act, on the grounds described in the documents.

In making my decision, I have considered the public interest considerations in section 9(1) of the Official Information Act.

Please note that this letter (with your personal details removed) and enclosed documents may be published on the Treasury website.

This fully covers the information you requested. You have the right to ask the Ombudsman to investigate and review my decision.

Yours sincerely

Libby Masterton
Manager, Natural Resources

Information for Release
TOIA 20160323

From: Alastair Cameron [TSY]
Sent: Friday, 29 May 2015 2:11 p.m.
To: gary.white@parliament.govt.nz
Subject: RE: Climate change aide-memoire
Attachments: Aide Memoire: Conditional Climate Change Targets

Sorry – here's a version without the watermark.

Alastair Cameron | Senior Analyst | **The Treasury**
Tel: +64 4 917 6047 | Alastair.Cameron@treasury.govt.nz

From: Alastair Cameron [TSY]
Sent: Friday, 29 May 2015 2:07 p.m.
To: gary.white@parliament.govt.nz
Subject: Climate change aide-memoire

[IN-CONFIDENCE]

Hi Gary,

Attached is the Treasury aide-memoire I mentioned earlier in the week, which I'd like to put to finance Ministers alongside the briefing note from Hon Groser. Are you able to forward this to Ministers Joyce and Bennett? Or I can, but can you give me the names of the people I should send it to?

We don't have a TA this afternoon, but she will make the formal copies and send them over on Tuesday when she's back.

Let me know if need anything else.

Alastair

Alastair Cameron | Senior Analyst | **The Treasury**
Tel: +64 4 917 6047 | Alastair.Cameron@treasury.govt.nz

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THE TREASURY
Kaitohutohu Kaupapa Rawa

Reference: T2015/1125 SH-10-8

Date: 28 May 2015

To: Minister of Finance (Hon Bill English)
Associate Minister of Finance (Hon Steven Joyce)
Associate Minister of Finance (Hon Paula Bennett)

Deadline: None
(if any)

Aide Memoire: Conditional Climate Change Targets

Executive summary

1. This aide-memoire discusses options to make New Zealand's post-2020 emissions reduction target conditional on factors that could give a future government flexibility to reduce the target if required to avoid high costs. In summary:

    a. At a meeting of the Cabinet Strategy Committee (STR) earlier this year, Ministers agreed that New Zealand's post-2020 emissions reduction target would be conditional on factors such as research and scientific developments.

    b. We understand that STR Ministers were worried about the potential costs of meeting a target and were seeking flexibility for a future government to reduce the target if required to avoid high costs.

    c. Minister Groser has forwarded you advice on options to make New Zealand's target conditional. In the Treasury's view, the approach proposed by officials does not provide the flexibility sought by STR Ministers. However, we are not aware of any alternative approach that could achieve the degree of flexibility sought by Ministers to soften any target tabled ahead of the Paris negotiations.

    d. The only way for Ministers to be certain that a target will not impose high costs in the future is to use the flexibility currently afforded New Zealand in the negotiations to table a "nationally determined" target that does not rely on future research and scientific developments to reduce costs.

    e. In Treasury's view, the most appropriate target is one that covers the whole economy (including the agriculture sector), but explicitly recognises New Zealand's unique emissions profile and gives priority to carbon dioxide reductions. Our previous advice [T2015/557] sets out the scientific, environmental and economic rationale for this approach.

f. Taking a target of this nature may reduce New Zealand's influence to negotiate favourable rules for markets and forestry. However, such rules are still likely to form part of the new agreement because many countries have an interest in them. Also, the costs of meeting a stringent target with favourable market and forestry rules, but without research and scientific breakthroughs, is still likely to be higher than the cost of meeting a target that does not rely on those breakthroughs to reduce costs.

g. A range of stakeholders are currently advocating through the current public consultation on New Zealand's post-2020 target for an approach that prioritises carbon dioxide reductions over methane.

Officials have provided advice on how to make NZ's post-2020 emissions reduction target conditional

2. New Zealand is expected to table its intended post-2020 emissions reduction target ahead of the international climate negotiations in Paris at the end of the year.

3. At a meeting of STR earlier this year, Ministers agreed that New Zealand's intended target should be conditional on factors such as research and scientific developments (including in relation to livestock emissions mitigation) [STR Min (15) 2/1].

4. Minister Groser has forwarded you advice on how to make New Zealand's target conditional and is intending to seek a meeting with you to discuss a way forward.

Flexibility to manage the risk of high costs while remaining within the international climate consensus

5. We understand that STR Ministers were concerned about the potential costs of meeting a target and that a future government may face a difficult decision to either pay those costs or leave the international climate change agreement. By agreeing the target should be conditional on factors that would reduce the costs, Ministers were seeking flexibility for a future government to reduce the target if the conditions are not met, but still remain within the international agreement.

No option provides the flexibility that STR Ministers are seeking

6. Officials from MfE, MPI and MFAT are advising against explicit conditionality of the kind envisaged by STR Ministers. They are instead proposing that New Zealand makes its target "provisional" until it ratifies the new agreement to be concluded in Paris later this year. Ratification is likely to occur between 2018 and 2020.

7. Treasury's view is that *neither* explicit conditionality *nor* provisionality give a future government the flexibility that STR Ministers are seeking.

8. Officials' advise against making New Zealand's target explicitly conditional because it would fail expectations on developed countries to table *unconditional* targets before Paris. Failing these expectations would jeopardise our ability to negotiate favourable rules with respect to markets and forestry. Furthermore, the new agreement is likely to specify that countries' targets cannot be conditional upon ratification. As such, it will not be possible for New Zealand to maintain

conditionality *after ratification*, even though we are unlikely to know by then if our conditions on research and scientific developments are met.

9. Instead of conditionality, officials are proposing that New Zealand makes its target "provisional" until the outcome of future negotiations on markets and forestry is known. This would allow New Zealand to make technical adjustments to our target *before ratification* if the outcome of those negotiations is different from what we envisaged when we tabled our target. This is unlikely to permit adjustments for factors like research and scientific developments that are not subject to negotiation, and, again, means it will not be possible to maintain provisionality *after ratification*.

10. A future government may have the ability to reduce its target *before ratification*, but this is also unlikely. The draft of the new agreement contains proposals to specify that countries cannot do this. Even if this is not a rule in the new agreement, there will be political pressure on countries not to reduce the stringency of their targets.

The target New Zealand tables this year is likely to be the target we are accountable to meet

11. As neither conditionality nor provisionality give New Zealand an option to reduce its target in the future, it is likely that the target we table ahead of Paris this year will be the target we are accountable to meet (subject only to technical adjustments).

12. If meeting the target does involve high costs (e.g. if breakthrough technological developments do not occur), New Zealand's options would be to pay those costs or under-achieve its target and deal with any reputational impact. While it is still to be negotiated, the new agreement is unlikely to include financial sanctions on countries that under-achieve their targets. It is more likely to include a review mechanism and "name and shame" for countries that under-achieve.

Treasury advice: the only certain way to avoid high costs is to table a target ahead of Paris that does not rely on research and scientific developments to reduce costs

13. If Ministers are concerned about the possibility future targets imposing high costs and their lack of options to avoid paying them, they could reconsider the decision to table a target that meets the definition of "progression" generally accepted in the international negotiations. Under this definition, developed country targets must be more stringent in a narrow quantitative sense than current targets. For New Zealand, this means more than our current 5% below 1990 levels.

14. Choosing a different way for New Zealand to demonstrate "progression" would provide the most certainty that a future government would avoid a choice between paying high costs, under-achieving its target or walking away from the international agreement. It would involve using the flexibility afforded countries in the negotiations to submit "nationally determined" contributions ahead of Paris. Using this flexibility would enable New Zealand to table a target that does not rely on future research and scientific developments to avoid high costs.

15. In the Treasury's view, the most appropriate target is one that covers the whole economy (including the agriculture sector), but explicitly recognises the unique

composition of New Zealand's emissions profile and gives priority to carbon dioxide reductions. Our previous advice [T2015/557] sets out the scientific, environmental and economic rationale for this approach.

16. New Zealand could table a target of this kind ahead of Paris on an unconditional basis, while also committing to do more if research and scientific developments give us more options to reduce our emissions cost-effectively in the future. (This option is considered on page 6 of the advice from Minister Groser, but not recommended because it would fail the definition of "progression" generally accepted in the international negotiations.)

17. The main drawback of this kind of target is that it would not show progression as that concept is generally understood in the international negotiations. "Progression" is not formally defined, however, and our view remains that New Zealand is free to argue for a different definition of "progression". For example, a target that covers the whole economy but prioritises carbon dioxide emissions could be said to demonstrate progression because it would:

    a. signal bigger carbon dioxide cuts than current targets, and also address agricultural emissions;

    b. signal meaningful action on all our major sources of emissions; and

    c. involve greater cost and effort than our current target.

18. We note that some stakeholders are advocating for an approach that prioritises carbon dioxide reductions over methane. This includes the "Fix our Future" campaign run by Generation Zero, a youth-led organisation founded to find climate change solution, and Gareth Morgan.

19. The main risk with Treasury's approach is that it may reduce New Zealand's influence to negotiate favourable market and forestry rules. Nonetheless, we think this risk is lower than the risk of high costs from taking a stringent target that relies on research and scientific breakthroughs to reduce costs. This is because:

    a. many other countries have a strong interest in sound market and forestry rules, so these rules are likely to feature as part of the new agreement; and

    b. the cost of meeting a stringent target with favourable market and forestry rules, but without research and scientific breakthroughs, is still likely be higher than the cost of a target that does not rely on those breakthroughs to manage cost.

Ultimately, what New Zealand tables ahead of Paris is likely to remain our target

20. Treasury recognises that Ministers face an extremely difficult decision to formulate a target that both demonstrates "progression" and avoids high costs.

21. Officials have not been able to identify an issue that achieves both these objectives so long as "progression" is defined in a strict, quantitative sense as generally accepted in the international negotiations.

22. Therefore, whether or not the target is framed as being provisional or conditional, it is critical for Ministers to be aware that the target they table this year ahead of Paris is likely to remain the target we will be accountable to meet.

Alastair Cameron, Senior Analyst, Natural Resources, 04 917 6047
Mark Vink, Acting Manager, Natural Resources, 04 917 6006

From: Alastair Cameron [TSY]
Sent: Tuesday, 23 June 2015 5:13 p.m.
To: gary.white@parliament.govt.nz
Cc: Mark Vink [TSY]
Subject: Aide-memoire and cost information
Attachments: Climate change - 1 page cost comparison of proposed targets.DOC; Aide Memoire: Climate change - post-2020 target - Hon Groser revised option.DOC

[IN-CONFIDENCE]

Hi Gary,

Attached is our aide-memoire on Hon Groser's revised target option, which we understand he will propose at tomorrow morning's EGI. If you or the Minister have any more questions about this, I'm in the office until 6pm tonight, on my cell phone – s9(2)(a) – or will be back in the office at about 8.30am tomorrow morning.

Also, as I mentioned earlier, officials are keen to make sure Ministers have the same cost information. The cost information we provided in our last Treasury Report is consistent with the information in the Cabinet paper and with what we understand other Ministers have had. The only additional figures that Hon Groser may refer to are a CO_2 target of 10% below 1990 levels, relative to his option:

Option	**Cost in 2027 relative to taking no action (2012 prices)**	**RGNDI in 2027 (RGNDI is currently $220b)**
-10% on non-agricultural gases (CO_2) (Treasury alternative)	$2.3b (0.78% RGNDI)	$296.7b
-10% on 1990 over the entire economy (Groser's option)	$3.7b (1.23% RGNDI)	$295.3b

The cost information in our Treasury Report is from on the same Infometrics modelling as for these figures (provided to us by the Ministry for the Environment), but:

- includes a -25% and -70% CO_2 target, instead of a -10% CO_2 target;
- includes total costs from the 10-year commitment period, instead of the annual figure in 2027.

If there is confusion at EGI about costings, it might be helpful for Minister English to table the costs table from our last report. I've attached that here as a one-pager, with brief narrative and qualifications.

Alastair

Alastair Cameron | Senior Analyst | **The Treasury**
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IN-CONFIDENCE

Cost comparison of proposed targets

Table 1 compares New Zealand's current target with the Minister for Climate Change Issues' proposed post-2020 target and potential alternative targets focusing on carbon dioxide. It shows:

- the emission reductions associated with each target, calculated using two different metrics (GWP and GTP);
- the economic and fiscal costs of each target;[1]
- the change in New Zealand's emissions by 2030 under each target.

Table 1: Comparison of proposed target and different levels of carbon dioxide targets

	Current target: 2013-2020	Proposed target: 2021-2030	Alternative targets: 2021-2030[2]	
	5% below 1990, all gases	10% below 1990, all gases	25% below 1990, CO_2	70% below 1990, CO_2
Emission reductions over 8 years (GTP)[3]	119	153	128	260
Emission reductions over 8 years (GWP)	149	260	128	260
Economic cost[4] ($ billion, 2012 prices)	n/a	-37	-27	-37
Economic cost (% RGNDI)	n/a	-1.23	-0.89	-1.23
Fiscal cost of covering agriculture[5] ($ billion, 2012 prices)	n/a	-4.5	0	0
Change in NZ's emissions by 2030 (1990 baseline, GWP)	n/a	-10%	+15%	-10%
Change in NZ's emissions by 2030 (2005 baseline, GWP)	n/a	-29%	-10%	-29%

[1] Economic costs are from CGE modelling undertaken by Infometrics to simulate the effect of a global carbon price rising to $50 in 2030 on economic growth and emissions. The model captures both the direct and secondary economic effects of domestic emissions reductions and international purchasing. Agricultural emissions are not priced in the models, but are accounted for under the "all gases" target (but not the CO_2 targets). Forestry emissions and removals are not factored in to the costs as they could increase or reduce the cost depending on the forestry rules applied.

[2] Targets do not include any agricultural methane or nitrous oxide.

[3] The emissions reductions for the proposed and alternative targets are calculated by taking the annual average emissions reductions for the 10-year commitment period (2021-2030) and multiplying that average over 8 years.

[4] The modelling was for targets calculated using a GWP metric (second line) and so these costs cannot be applied for targets calculated using the GTP metric (first line).

[5] This fiscal cost would arise if agricultural emissions are included in New Zealand's international target but excluded from the Emissions Trading Scheme, requiring the Crown to purchase overseas offsets to cover the agricultural sector's emissions. There is no fiscal cost for alternative (CO_2) targets because the target would no longer require New Zealand to purchase offsets to meet the agriculture sector's emissions.

THE TREASURY
Kaitohutohu Kaupapa Rawa

Reference: T2015/1373 SH-10-8

Date: 23 June 2015

To: Minister of Finance (Hon Bill English)
Associate Minister of Finance (Hon Steven Joyce)
Associate Minister of Finance (Hon Paula Bennett)

Deadline: 23 June 2014

Aide Memoire: Climate change - post-2020 target - Hon Groser revised option

1. This aide-memoire updates you on the post-2020 emissions reduction target that Hon Groser intends to propose at EGI on 24 June (tomorrow), which he has revised since we provided advice to you last Friday [TR2015/1273].

Summary and recommendations

2. Hon Groser is still proposing the same target level as outlined in the Cabinet paper (10% below 1990 levels by 2030, covering all sectors), but intends to propose that the target is made *more provisional* on New Zealand successfully negotiating rules for the agriculture sector that could lower the cost of the target.

3. We previously advised you that making New Zealand's target provisional would not provide Ministers with the degree of flexibility to reduce costs they requested at Cabinet Strategy Committee discussions [T2015/1125].

4. Our assessment of Hon Groser's revised proposal, based on MFAT advice, is that this remains the case. While our assessment is that the revised proposal provides a *small net benefit* over Hon Groser's original proposal, it still risks high economic and fiscal costs over the 2020s and provides a future Government with few options to reduce those costs.

5. We recommend that you ask the following questions at EGI to test the benefits of Hon Groser's revised proposal:

   a. How likely is it that New Zealand could successfully negotiate rules for the agriculture sector that would reduce the cost of the target?

   b. If New Zealand is not successful in these negotiations, what scope would there be for New Zealand to reduce the costs of our target?

   c. To what extent does the additional provisionality increase the risk that New Zealand will be criticised for signalling a weak approach to agriculture?

6. Treasury's advice remains that a split target may be in New Zealand's best interests. Accordingly, we recommend that you **do not support** the Minister's revised option and instead invite him to provide more information on alternative target options. If EGI does support Hon Groser's approach, however, we recommend that you support his revised proposal.

Minister Groser's revised option

7. Since we provided advice to you last Friday on New Zealand's post-2020 emissions reduction target [TR2015/1273], we understand that Minister Groser has revised the target he intends to propose at EGI on 24 June (tomorrow).

8. Hon Groser is still proposing the same level outlined in the Cabinet paper, i.e. 10% below 1990 levels by 2030 (covering all sectors). However, he will now propose that the target is made *more provisional* on New Zealand successfully negotiating rules for the agriculture sector that could reduce the cost of the target. New Zealand would need to negotiate these rules before ratifying the new Agreement, which is expected to occur sometime between 2018 and 2020.

9. We previously advised you that making New Zealand's target provisional would not provide Ministers with the degree of flexibility to reduce costs they requested at Cabinet Strategy Committee discussions [T2015/1125].

10. Our assessment of Hon Groser's revised proposal, based on MFAT advice, is that this remains the case. While the revised proposal may provide a small net benefit over Hon Groser's original proposal outlined in the Cabinet paper, it still risks high economic and fiscal costs over the 2020s, even with access to markets and forestry rules, and provides few options to reduce those costs.

Benefits of Hon Groser's revised option

11. The revised proposal offers some potential benefits over the original proposal, but MFAT advice is that the likelihood of New Zealand realising these benefits is low.

12. The potential benefits are:

   a. It provides a more explicit signal about New Zealand's desire to negotiate favourable rules for agriculture.

      MFAT's advice is that it is *difficult to assess* the likelihood of New Zealand successfully negotiating favourable rules for the agriculture sector. Developing countries have not wanted to discuss treatment of the agriculture sector ahead of the Paris meeting in November, and it is unclear if this will change after Paris.

   b. It lays the groundwork for New Zealand to change its target if we are unsuccessful in these negotiations.

      MFAT advice is that, should we be unsuccessful in the negotiations, New Zealand would *still face reputation risk* from any approach that could reduce the costs of our target (e.g. reducing the level, treating carbon dioxide and agricultural emissions differently). s6(a) [redacted]

Costs of Hon Groser's revised option

13. By being more explicit about our intention to negotiate rules for the agriculture sector, the revised proposal presents a risk that New Zealand will be questioned about its intentions and ultimately criticised for signalling the possibility of a weak approach in the future. This potential for criticism is why officials originally advised against making New Zealand's target *explicitly conditional* on New Zealand finding solutions for our agricultural emissions.

14. MFAT considers the proposed provisionality wording for New Zealand's target adequately manages the risk.

Treasury advice

15. On balance, we consider that Hon Groser's revised option provides a *small net benefit* over his original proposal outlined in the Cabinet paper.

16. Nonetheless, it still risks high economic and fiscal costs over the 2020s, even with access to markets and forestry, and provides few options for a future Government to reduce those costs.

17. Accordingly, Treasury's advice remains that a split target may be in New Zealand's best interests [TR2015/1273]. We still recommend that you **do not support** the Minister's revised option and instead invite him to direct his officials to provide more information on possible target options. We have provided your office with the wording of an alternative recommendation for EGI.

18. If EGI decides to support Hon Groser's approach, we recommend that you support his revised proposal.

Alastair Cameron, Senior Analyst, Natural Resources, 04 917 6047
Mark Vink, Acting Manager, Natural Resources, 04 917 6006

File Reference SH-10-8

20 July 2015

David Bennett MP
Chairperson – Finance & Expenditure Committee
By email: jo.elworthy@parliament.govt.nz

Dear Mr Bennett

RE: Treasury Cost Projections of Climate Change Targets

1. I am writing in relation to the Secretary of the Treasury's attendance at FEC on 17 June 2015 to discuss the 2015 Budget and Economic Fiscal Update.

2. During the question and answer session, Dr Russel Norman referred to Treasury's projection of the costs of meeting New Zealand's future greenhouse gas emission reduction targets. There has been some confusion about these figures, and so I thought it would be helpful to clarify.

3. In his question, Dr Norman referred to Treasury advice that a target to reduce New Zealand's greenhouse gas emissions to 5% below 1990 levels by 2030 could cost the Crown $52 billion over the 2020s.

4. The advice that Dr Norman referred to is a report released under the Official Information Act last November as part of Treasury's Briefing to the Incoming Minister of Finance. The Treasury's cost projections were redacted, along with the carbon prices used to develop the projections. Due to a problem with the redaction software, s9(2)(a) was able to acquire the carbon prices. s9(2)(a) s9(2)(a) then did his own calculations using the carbon price figures to determine the $52 billion cost figure. That figure is not, therefore, a Treasury figure.

5. Since then, the Treasury's actual cost projections from the report have been released, including in a slide pack recently released under the Official Information Act. I have included a copy of the relevant slide for your information.

6. As the attached slide shows, Treasury's projection of the costs of meeting a target to reduce New Zealand's emissions to 5% below 1990 levels from 2021-2030 were:

   a. $8-$28 billion (2012 prices) of cumulative *economic* costs, or 0.3-0.8% of GDP;

b. $4-$14 billion (2012 prices) in *fiscal* costs, which could arise if agricultural emissions were included in the target but not the emissions trading scheme, and the Crown was required to purchase overseas offsets to cover those emissions.

7. These cost projections were based on early modelling by Landcare Research, which was commissioned by the Ministry for the Environment. The projections assumed an average carbon price range of NZ$10 to $165 over the 2020s.

8. Since these projections were done, more comprehensive economic modelling of potential target costs has been completed. The results of this modelling for an equivalent target as that considered in the Treasury report are as follows:

	Cost as a reduction in RGNDI[1]	
	Model 1 (Infometrics) (Cumulative, 2021-2030)	*Model 2 (Landcare) (Cumulative, 2021-2030)*
5% below 1990 levels, 2021-2030	-$35 billion (-1.18%)	-$18 billion (0.56%)

9. This modelling was commissioned by the Ministry for the Environment and is publicly available on the Ministry's website.

10. I would be grateful if you could forward this letter and the attached slide around FEC members for their consideration.

Yours sincerely

Mark Vink
Manager, Natural Resources

[1] RGNDI is Real Gross National Disposable Income – a measure of the size of the economy based on GDP but which better accounts for the cost of purchasing international units. Dollar figures are in 2012 prices.

IN-CONFIDENCE

Climate Change Issues: FEC – February 2016

Key messages

- The New Zealand government welcomed the conclusion of the new global climate change agreement at Paris in December last year.
- New Zealand's emissions reduction target under the new agreement is to reduce its emissions to 30% below 2005 levels by 2030. This target applies to all gases.
- Treasury did not support this target, and advised Ministers to take a split target focusing on carbon dioxide reductions to 25% below 1990 levels by 2030, and a commitment to improve the emissions intensity (i.e. efficiency) of the agricultural sector.
- The Emissions Trading Scheme (ETS) Review began in November 2014 and the first phase of consultation closes on 19 February 2015.
- The ETS Review is an opportunity to ensure New Zealand can meet its Paris Agreement target efficiently, by setting a clear and credible pathway for ETS settings

Key issues

Review of the Emissions Trading Scheme (ETS)

- Using the ETS Review to set a clear and credible pathway for ETS settings will help firms make good long term investment decisions by giving certainty about what kind of obligations they'll face for their emissions through the ETS in the future.
- The first stage of the ETS Review is considering removing the "one-for-two" transitional measure that effectively halves the carbon price for all sectors except forestry. It is also considering reducing the price ceiling that sets a maximum fixed price for emissions, to reduce the costs of removing one-for-two on households and firms.
- Removing the "one-for-two" transitional measure could be justified if required to help firms prepare for meeting NZ's post-2020 emissions reduction target. The public consultation is testing this question and the Review will allow the costs and benefits to be considered.
- The second stage of the review will consider other matters that could be progressed over a longer timeframe. These include the role of auctioning and supply management in the ETS, if and when allocations to trade-exposed industry should be reduced after 2020, and complementary measures outside the ETS to reduce greenhouse gas emissions.
- In September 2015, following receipt of an OIA response from Treasury, the Green Party put out a press release saying that Treasury advised the Government to secure a greater degree of political party consensus on climate change. This was based on Treasury's briefing to the incoming Minister of Finance in November 2014 advising Ministers that greater regulatory certainty would assist firms to make good long-term investment decisions, and that *if* they wished to take explicit steps to

provide greater regulatory certainty, they *could* consider a number of actions, starting with public consultation on New Zealand's post-2020 target and future ETS settings. Beyond those two steps, Treasury advised, Ministers could consider securing greater political party consensus on targets and ETS settings to help provide regulatory certainty.

Fiscal impacts

- The ETS Review Discussion Documents states that the large number of New Zealand Units (NZUs) in the domestic market presents a fiscal risk because any NZUs carried forward by ETS participants into the 2020s will be eligible for use in the ETS, but will not count towards meeting New Zealand's 2030 target, possibly leaving a shortfall of international offsets that the Government needs to purchase.

- It is very difficult to quantify this fiscal risk because of considerable uncertainties about the quantity of NZUs carried forward, the price of NZUs and international units, and other factors, such as agricultural emissions over the 2020s. Under current projections and a carbon price of $25, the fiscal risk would cost $135 million over the decade.

- Removing the 1:2 would reduce the number of NZUs carried forward into the 2020s by doubling the demand for NZUs and thereby reduce the amount of fiscal risk after 2020.

- Before 2020, removing the 1:2 increases Crown Revenue because NZUs returned to the Government are accounted for as revenue at the current carbon price. The **approximate** fiscal impacts are shown the table below at the current carbon price of $9.50.

Table 1: Estimated Fiscal Impact of removing one-for-two from 1 January 2017

$ million	2016/17	2017/18	2018/19	2019/20
Increase in Crown Revenue at current carbon price ($9.50)	55	109	105	102

<u>Electric vehicles</u>

- Transport Minister Simon Bridges has said publicly that the government is considering what role it could play in facilitating the uptake of electric vehicles (EVs), and that his officials are working on a package of measures to support uptake.

- Treasury is optimistic that EVs could have potential in New Zealand and could support policy interventions to facilitate uptake where there is evidence of a barrier to uptake. We are unlikely to support subsidies to address price-based barriers, as the Emissions Trading Scheme is designed to address price-based barriers in a way that delivers NZ's most efficient level of emissions abatement.

- Possible barriers to uptake identified by the Ministry of Transport include:
  - Relatively higher purchase price when compared to conventional vehicles.
  - Limited travel range (up to 150km).

  - Limited range of EVs available in NZ due to small size of NZ as a market, lack of financial incentives which are provided in other markets, and lack of minimum demand for importers to risk up-front investment.
  - Information problems: lack of awareness, uncertainty of total costs of ownership, misconceptions.
  - Co-ordination problems: consumers are reluctant to purchase EVs without public charging infrastructure, while the private sector is reluctant to invest in charging infrastructure without widespread uptake of EVs.

  It is expected that cost and travel range barriers will be reduce over time.

- The **Green Party** proposes to exempt EVs provided by employers from fringe benefit tax. The rationale is that this will incentivise business to purchase EVs, which in turn will stimulate demand for EV charging infrastructure, and in a few years create a second hand market for EVs.
  - It also proposes to invest $10m in the roll-out of fast-charging electric car refuelling stations across NZ, offer $10m cash-back payments to electric car buyers over time, and replace the Crown car fleet with EVs where appropriate and available.

- The **Labour Party** does not have any specific policy on EVs, aside from general support to promote the wider use of EVs.

<u>**Progress towards a Post-2020 International Agreement**</u>

- The New Zealand government welcomed the conclusion of the new global climate change agreement at Paris in December last year.

- New Zealand's main priorities are reflected in the Paris Agreement:
  - an ambitious (albeit aspirational) global goal to keep global temperature increase below 1.5 / 2 degrees;
  - all countries have agreed to take emission reduction targets;
  - countries are able to use markets (overseas offsets) and forestry offsets to help meet their targets.

- There is a collective goal for developed countries to mobilise $100 billion per year from 2021-2025 to help developing countries reduce their emissions and adapt to the effects of climate change. We will continue to meet of that collective goal in partnership with our donor parties (especially in the Pacific), providing finance for climate related projects in line with their priorities.

- New Zealand's emissions reduction target under the Paris Agreement is to reduce our GHG emissions to 30% below 2005 levels by 2030 (11.2% below 1990). This target applies to all gases.

- Treasury did not support an "all gases" target and instead recommended targeting carbon dioxide. Carbon dioxide is the main driver of long-term temperature increase, whereas methane (the main agricultural gas) is short-lived in the atmosphere. Giving equal weight to methane and carbon dioxide emissions in the 2020s risks New Zealand focusing on expensive mitigation that has less environmental benefit.

- Reducing emissions in New Zealand is significantly more expensive than it is for other countries. In Treasury's view, a fair target for New Zealand would require smaller emission reductions than other countries are able to achieve, while imposing similar costs. New Zealand has the highest agricultural emissions and production per capita in the world, which is expensive to reduce. New Zealand also already has over 80% renewable electricity generation, and a relatively fast growing population.

Potential costs from meeting New Zealand's post-2020 emissions reduction target

- The following table shows the modelled costs of meeting a target of 30% below 2005 levels by 2030 (i.e. the *total* costs over the ten year target period, 2021-2030):

Model	Infometrics		Landcare Research	
RGNDI / national income	-1.25%	-$37.5 billion	-0.592%	-$17.69 billion

- Reminder: Redacted information from a Treasury report was accidently released in November 2014. This lead to claims that meeting emission targets over the 2020s could **cost $52 billion**. The actual costs estimates that Treasury presented were $8-28 billion. This was clarified in a letter sent by the Treasury to the FEC chairperson (See Appendix 1).

Questions & Answers

Question: Does the Treasury believe there is a case for action on climate change?

Answer: Yes. The impacts on people and the environment from climate change could be significant, particularly once temperatures increase much beyond 2 degrees. With a large share of our economy based on our natural resources, New Zealand will be affected by any increase in the frequency of severe weather events like droughts and floods. Evidence suggests that, on a global scale, taking action in the near term to keep long-term temperature increase below 2 degrees will cost less than adapting to the effects of climate change if temperatures rise above 2 degrees.

Of course, limiting temperature increase requires *global* action, and there are good reasons for New Zealand to act as part of any global consensus. Our participation can help encourage wider global action. Also, as a small country, we benefit from supporting rules-based international processes.

Question: Would Treasury support a cross-party accord on climate change?

Answer: It's obviously up to political parties to decide if they want to work together on climate change and Treasury will always assist the Government of the day to implement its policy agenda, however formed. In principle, if a cross-party accord helped provide greater regulatory certainty, then we would support the idea as regulatory certainty is critical to firms making good long term investment decisions. Of course, achieving cross-party consensus is not the only way to provide regulatory certainty.

Question: Does Treasury support changes to the ETS to increase the carbon price?

Answer: The most important thing the ETS Review can do is give firms as much certainty as possible about the obligations they will face under the ETS in the future. That should primarily include signals about future policy intentions, but to the extent price rises are required to help send those signals then we consider there would be a case. These issues are being tested as part of the ETS Review.

Question: Why doesn't the modelling on New Zealand's post-2020 target include the costs of inaction or co-benefits of action?

Answer: The costs of inaction are difficult to quantify as they depend on the actions that the whole world takes to reduce emissions, not just New Zealand. The costs of inaction will be large but are hard to predict accurately and hard to express in monetary terms. This is also the case for modelling co-benefits of action such as air quality and health benefits.

Question: Does the modelling overstate the costs of meeting targets because of the assumptions used, such as assuming no significant technology development even at high carbon prices?

Answer: Good models give an indication of the direction and magnitude of costs of specific scenarios, but all have limitations. No model can accurately predict if, when or where technological progress will occur, or exactly how this might modify the costs. The modelling therefore gives a prudent estimate of the cost of targets, but it's also important to conduct sensitivity analysis to consider the impact of scenarios that cannot be modelled. Technological breakthroughs could reduce the costs but these should be taken as possibilities in the sensitivity analysis rather than sure outcomes.

Question: Is New Zealand on track to meet our current 2020 target of reducing emission to 5% below 2005 levels?

Answer: Yes, New Zealand is on track to meet the 2020 target, partly because we have a surplus of Kyoto units from the first commitment period. Under the Kyoto rules we can apply this surplus to meet emissions above our pre-2020 target.

Question: Why are carbon prices so low?

Answer: Current prices were previously linked to international prices to allow participants to meet their emissions obligations in the most efficient way. Now that the ETS has closed to international units, carbon prices have increased to the price of domestic units, which are currently trading at around $9.50.

Question: Why does the Government allocate New Zealand Units for free, and what is the fiscal cost of these allocations?

Answer: Most of the New Zealand Units (NZUs) the Government allocates are to forest owners for the carbon they store in their trees. The Government also allocated NZUs to some energy-intensive, trade exposed industries to protect their competitiveness. Without this protection, some production would shift to other countries that do not face a carbon price. This could increase global emissions, if the new producer is less efficient than New Zealand.

The 15/16 appropriation for allocating NZUs to firms is $159.8 million per annum. This includes allocation to both forest owners and energy-intensive, trade-exposed firms.

Note that the appropriation is calculated using a $10 carbon price, whereas actual expenditure is calculated on the basis of market prices. This means that actual expenditure is likely to be less than the appropriation because market prices are below $10.

Question: Is Treasury aware of any fiscal risks from climate change?

Answer: There were no specific fiscal risks from climate change included in 2015 Budget Economic and Fiscal Update.

The Treasury's July 2013 Statement on the Crown's Long-Term Fiscal Position notes the possibility of fiscal and economic risks from the effects of climate change, but these risks do not meet the tests for publication in the BEFU. This is because the influence of climate change on natural events and the subsequent impact on the Crown's finances within the forecast period cannot be evaluated, so the costs are not able to be quantified with reasonable certainty.

APPENDIX 1

- News articles and opposition parties claimed earlier this year that a Treasury report showed that "*cost of failing to take action to cut New Zealand's greenhouse gas emissions is between $3 billion and **$52 billion** from 2021-2020*".

- $52 billion was **not a cost estimate from the Treasury.** The actual costs estimates that Treasury presented were $8-28 billion. The $52 billion figure was based on an unrealistic scenario where New Zealand met an emissions target only by purchasing expensive international offsets without any cheaper domestic abatement. It also assumed that all of these offset units were purchased at the very top of the potential price range that Treasury presented.

- These figures were based on information about carbon price forecasts that was redacted from a report that was released as part of Treasury's BIM. The Sustainability Council obtained this information because of a technical issue with the redaction software. The software issue has been resolved, and no other redacted information seems to have been obtained.

- See attached letter to FEC:

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APPENDIX 1A

Letter from the Treasury to FEC Chairperson

File Reference SH-10-8

20 July 2015

David Bennett MP

Chairperson – Finance & Expenditure Committee

By email: jo.elworthy@parliament.govt.nz

Dear Mr Bennett

RE: Treasury Cost Projections of Climate Change Targets

1. I am writing in relation to the Secretary of the Treasury's attendance at FEC on 17 June 2015 to discuss the 2015 Budget and Economic Fiscal Update.

2. During the question and answer session, Dr Russel Norman referred to Treasury's projection of the costs of meeting New Zealand's future greenhouse gas emission reduction targets. There has been some confusion about these figures, and so I thought it would be helpful to clarify.

3. In his question, Dr Norman referred to Treasury advice that a target to reduce New Zealand's greenhouse gas emissions to 5% below 1990 levels by 2030 could cost the Crown $52 billion over the 2020s.

4. The advice that Dr Norman referred to is a report released under the Official Information Act last November as part of Treasury's Briefing to the Incoming Minister of Finance. The Treasury's cost projections were redacted, along with the carbon prices used to develop the projections. Due to a problem with the redaction software, s9(2)(a) was able to acquire the carbon prices. s9(2)(a) s9(2)(a) then did his own calculations using the carbon price figures to determine the $52 billion cost figure. That figure is not, therefore, a Treasury figure.

5. Since then, the Treasury's actual cost projections from the report have been released, including in a slide pack recently released under the Official Information Act. I have included a copy of the relevant slide for your information.

6. As the attached slide shows, Treasury's projection of the costs of meeting a target to reduce New Zealand's emissions to 5% below 1990 levels from 2021-2030 were:

a. $8-$28 billion (2012 prices) of cumulative *economic* costs, or 0.3-0.8% of GDP;

b. $4-$14 billion (2012 prices) in *fiscal* costs, which could arise if agricultural emissions were included in the target but not the emissions trading scheme, and the Crown was required to purchase overseas offsets to cover those emissions.

7. These cost projections were based on early modelling by Landcare Research, which was commissioned by the Ministry for the Environment. The projections assumed an average carbon price range of NZ$10 to $165 over the 2020s.

8. Since these projections were done, more comprehensive economic modelling of potential target costs has been completed. The results of this modelling for an equivalent target as that considered in the Treasury report are as follows:

	Cost as a reduction in RGNDI[1]	
	Model 1 (Infometrics) (Cumulative, 2021-2030)	*Model 2 (Landcare) (Cumulative, 2021-2030)*
5% below 1990 levels, 2021-2030	-$35 billion (-1.18%)	-$18 billion (0.56%)

9. This modelling was commissioned by the Ministry for the Environment and is publicly available on the Ministry's website.

10. I would be grateful if you could forward this letter and the attached slide around FEC members for their consideration.

Yours sincerely

Mark Vink
Manager, Natural Resources

[1] RGNDI is Real Gross National Disposable Income – a measure of the size of the economy based on GDP but which better accounts for the cost of purchasing international units. Dollar figures are in 2012 prices.

Climate Change Issues: FEC – June 2016

Key messages

- New Zealand signed the Paris Agreement in April this year and the Government is now working through the domestic processes necessary to allow us to ratify it.

- New Zealand's emissions reduction target under the Paris Agreement is to reduce emissions to 30% below 2005 levels by 2030. This target applies to all gases.

- Treasury did not support this target, and advised Ministers to take a split target focusing on reducing carbon dioxide and improving the emissions intensity (i.e. efficiency) of the agricultural sector. Now that the target is set, Treasury is working with other Government agencies on finding the right mix of domestic policies to ensure New Zealand meets the target in the most efficient way.

- The Emissions Trading Scheme (ETS) Review began in November 2015 and, as a result of the first phase of the review, the "one-for-two" transitional measure is to be phased out over three years starting from 1 January 2017. Budget 2016 included around $350 million in savings over forecast period from this change.

- The second phase of the ETS Review is underway now, and is an opportunity to ensure New Zealand can meet its Paris Agreement target efficiently.

The Paris Agreement

- In April 2016, Minister Bennett signed the Paris Agreement and said New Zealand will ratify it once we have worked through the necessary domestic processes.

- New Zealand's main priorities are reflected in the Paris Agreement:

    - an ambitious (albeit aspirational) global goal to keep global temperature increase below 1.5 / 2 degrees;
    - all countries have agreed to take emission reduction targets;
    - countries are able to use markets (overseas offsets) and forestry offsets to help meet their targets.

- New Zealand's emissions reduction target under the Paris Agreement is to reduce our GHG emissions to 30% below 2005 levels by 2030 (11.2% below 1990). This target applies to all gases.

- Reducing emissions in New Zealand is significantly more expensive than it is for other countries. New Zealand has the highest agricultural emissions and production per capita in the world, which is expensive to reduce. New Zealand also already has over 80% renewable electricity generation, and a relatively fast growing population.

- There is a collective goal for developed countries to mobilise $100 billion per year from 2021-2025 to help developing countries reduce their emissions and adapt to the effects of climate change. New Zealand will continue to meet its part of this collective goal in partnership with our development partners, especially in the Pacific.

<u>Options for ratifying the Paris Agreement</u>

- s9(2)(ba)(ii)
  s9(2)(ba)(ii) Officials are undertaking work to consider New Zealand's options for early ratification and the implications of ratifying early.

The Emissions Trading Scheme (ETS) Review

<u>First phase and removal of "one-for-two" transitional measure</u>

- The first stage of the ETS Review is now complete and Ministers decided to phase out the "one-for-two" transitional measure over three years starting from 1 January 2017.

- This change provides the savings to the Crown shown in Table 1 below. These savings are based on a carbon price of $12. The savings will be greater as the carbon price increases.

Table 1: Fiscal impact of removing one-for-two (as reflected in BEFU 2016 forecasts)

$ million	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Increase in Crown Revenue	25.398	73.512	117.306	139.824

- The "one-for-two" transitional measure effectively halved the carbon price that emitters faced and was introduced in 2009 to ameliorate the economic costs of the ETS during the economic recession at that time.

<u>Second phase, a "task force", and political party consensus</u>

- The second phase of the ETS Review is now underway and will consider other matters that could be progressed over a longer timeframe. These include the role of auctioning and supply management in the ETS, if and when allocations to trade-exposed industry should be reduced after 2020, and complementary measures outside the ETS to reduce greenhouse gas emissions.

- Minister Bennett has said she is considering a climate change taskforce to help the Government consider some of these long-term issues. She has not decided if she will establish any kind of group or what it will do.

- Treasury sees some value in an advisory group (or groups), made-up of officials and technical experts from outside Government, to help deepen the evidence base about New Zealand's technical and economic potential to reduce emissions and identify possible options.

- In September 2015, following receipt of an OIA response from Treasury, the Green Party put out a press release saying that Treasury advised the Government to secure a greater degree of political party consensus on climate change. This was based on Treasury's briefing to the incoming Minister of Finance in November 2014 advising Ministers that greater regulatory certainty would assist firms to make good long-term investment decisions, and that *if* they wished to take explicit steps to provide greater regulatory certainty, they *could* consider a number of actions, starting with public consultation on New Zealand's post-2020 target and future ETS settings. Beyond those two steps, Treasury advised, Ministers could consider securing greater political party consensus on targets and ETS settings to help provide regulatory certainty.

Adaptation – adapting to the physical effects of climate change

- The Paris Agreement establishes a global goal of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, and commits all Parties to engage in domestic adaptation planning processes and action. There is an expectation that Parties will report on action taken and will cooperating in sharing information and strengthening scientific knowledge to support decision-making.

- Many existing government programmes will help New Zealand adapt to the physical effects of climate change. In light of the Paris Agreement, there is likely to be merit in considering whether the Government's adaptation investment is directed towards the highest value areas and if there are any gaps.

- Examples of current programmes include:
    - The work of the National Infrastructure Unit.
    - Support for water storage and science investment into developing drought resistant crops.
    - Improved biosecurity measures.
    - Planning and risk management guidance for local councils.

Sea level rise and the PCE's report

- In November 2015, the Parliamentary Commissioner for the Environment highlighted sea level rise as one such impact of climate change that requires greater attention and investment. Her report included a recommendation for the Minister of Finance to establish a working group to assess and prepare for the economic and fiscal implications of sea level rise. There may well be merit in such a group, and Treasury is working with other agencies to determine it is a priority for future investment.

Electric vehicles

- Transport Minister Simon Bridges recently announced a package of measures to support the uptake of electric vehicles (EVs).

- Treasury agrees that EVs have potential to help New Zealand meet its climate change targets and supports policy interventions where there is evidence of a barrier to uptake. We do not support subsidies as the ETS is designed to address price-based barriers in a way that delivers NZ's most efficient level of emissions abatement.

- Possible barriers to uptake identified by the Ministry of Transport include:
    - Relatively higher purchase price when compared to conventional vehicles.
    - Limited travel range (up to 150km).
    - Limited range of EVs available in NZ due to small size of NZ as a market, lack of financial incentives which are provided in other markets, and lack of minimum demand for importers to risk up-front investment.
    - Information problems: lack of awareness, uncertainty of total costs of ownership, misconceptions.
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- The **Green Party** proposes to exempt EVs provided by employers from fringe benefit tax. The rationale is that this will incentivise business to purchase EVs, which in turn will stimulate demand for EV charging infrastructure, and in a few years create a second hand market for EVs.

    - It also proposes to invest $10m in the roll-out of fast-charging electric car refuelling stations across NZ, offer $10m cash-back payments to electric car buyers over time, and replace the Crown car fleet with EVs where appropriate.

- The **Labour Party** does not have any specific policy on EVs, aside from general support to promote the wider use of EVs.

Questions & Answers

Question: **Does the Treasury believe there is a case for action on climate change?**

Answer: Yes. The impacts on people and the environment from climate change could be significant, particularly once temperatures increase much beyond 2 degrees. With a large share of our economy based on our natural resources, New Zealand will be affected by any increase in the frequency of severe weather events like droughts and floods. Evidence suggests that, on a global scale, taking action in the near term to keep long-term temperature increase below 2 degrees will cost less than adapting to the effects of climate change if temperatures rise above 2 degrees.

Of course, limiting temperature increase requires *global* action, and there are good reasons for New Zealand to act as part of any global consensus. Our participation can help encourage wider global action. Also, as a small country, we benefit from supporting rules-based international processes.

Question: **Will New Zealand ratify the Paris Agreement early?**

Answer: Ministers have said New Zealand will ratify the Paris Agreement. Officials are working to determine what domestic processes would be required to ratify in 2016 or 2017, and what the implications will be.

Question: **What are the implications of ratifying the Paris Agreement early?**

Answer: The main implication of ratifying early is that the rules under which countries will account for their emissions will not have been finalised. Officials are considering the implications of this for New Zealand and how any risks can be managed.

Question: **Would the Treasury support a Budget bid to cancel Government-held carbon credits to compensate for the past use of "dubious" credits, in order to meet New Zealand's climate commitments?**

Answer: s9(2)(f)(iv)
s9(2)(f)(iv) [redacted] The important thing from Treasury's perspective is that we follow the agreed international rules when using carbon credits to meet our targets. We followed the rules with our previous Kyoto target and I'd expect us to do the same for the 2020 target.

Question: **Would Treasury support a cross-party accord on climate change?**

Answer: It's obviously up to political parties to decide if they want to work together on climate change and Treasury will always assist the Government of the day to implement its policy agenda, however formed. In principle, if a cross-party accord helped provide greater regulatory certainty, then we would support the idea as regulatory certainty is critical to firms making good long term investment decisions. Of course, achieving cross-party consensus is not the only way to provide regulatory certainty.

Question: **Why doesn't the modelling on New Zealand's post-2020 target include the costs of inaction or co-benefits of action?**

Answer: The costs of inaction are difficult to quantify as they depend on the actions that the whole world takes to reduce emissions, not just New Zealand. The costs of inaction will be large but are hard to predict accurately and hard to express in monetary terms. This is also the case for modelling co-benefits of action such as air quality and health benefits.

Question: **Does the modelling overstate the costs of meeting targets because of the assumptions used, such as assuming no significant technology development even at high carbon prices?**

Answer: Good models give an indication of the direction and magnitude of costs of specific scenarios, but all have limitations. No model can accurately predict if, when or where technological progress will occur, or exactly how this might modify the costs. The modelling therefore gives a prudent estimate of the cost of targets, but it's also important to conduct sensitivity analysis to consider the impact of scenarios that cannot be modelled. Technological breakthroughs could reduce the costs but these should be taken as possibilities in the sensitivity analysis rather than sure outcomes.

Question: **Is New Zealand on track to meet our current 2020 target of reducing emission to 5% below 2005 levels?**

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Answer: Yes, New Zealand is on track to meet the 2020 target, partly because we have a surplus of Kyoto units from the first commitment period. Under the Kyoto rules we can apply this surplus to meet emissions above our pre-2020 target.

Question: s9(2)(f)(iv) [redacted]

Answer: [redacted]

Question: **Is Treasury aware of any fiscal risks from climate change?**

Answer: There were no specific fiscal risks from climate change included in 2015 Budget Economic and Fiscal Update.

The Treasury's July 2013 Statement on the Crown's Long-Term Fiscal Position notes the possibility of fiscal and economic risks from the effects of climate change, but these risks do not meet the tests for publication in the BEFU. This is because the influence of climate change on natural events and the subsequent impact on the Crown's finances within the forecast period cannot be evaluated, so the costs are not able to be quantified with reasonable certainty.