



## New Zealand's 2020 target: initial results and implications

<b>Date:</b>	19 June 2009	<b>MfE Priority:</b>	Non-urgent
<b>Security Level:</b>		<b>Number of Attachments:</b>	One
		<b>MfE Ref No:</b>	09-B-01597

## Action Sought

	<b>Action Sought</b>	<b>Deadline</b>
Minister for Climate Change Issues Hon Dr Nick Smith	<b>Note</b> officials' initial analysis of quantitative indicators to determine what might be a fair 2020 target for New Zealand.  <b>Refer</b> this note to the group of Ministers with portfolios relevant to climate change.	None
Associate Minister for Climate Change Issues (International Negotiations) Hon Tim Groser	None.	None

## Ministry for the Environment Contacts

<b>Name</b>	<b>Position</b>	<b>Telephone (cell)</b>	<b>Telephone (work)</b>	<b>1st Contact</b>
Amelie Goldberg Daniel Twaddle	Analysts, Climate Change Policy		439 7602 439 7507	
John Scott	Acting Manager, Emissions Trading Group	[Withheld]	439 7573	✓
Stuart Calman	Acting General Manager	[Withheld]	439 7571	

## Executive Summary

Cabinet will need to decide New Zealand's 2020 emissions reduction target/target range to announce at the UNFCCC negotiations on 10-14 August. A 2020 target is not binding but it will influence the shape of New Zealand's legally binding target in the second commitment period, which will be negotiated at the earliest at Copenhagen.

### *Factors to consider in deciding a target*

A decision will need to be made on what the appropriate 2020 target is for New Zealand. This decision can be informed by a range of factors, including:

- The 2020 targets announced by other Annex I Parties
- Quantitative indicators of what a fair target is relative to other Parties announcements
- The cost to the economy of meeting the emissions target
- The costs of financing commitments to developing countries New Zealand is expected to make.
- The relationship between the 2020 target and the 2050 target (50 by 50).
- New Zealand's negotiating objectives
- International and domestic stakeholder expectations.

Although it will only get us so far, a quantitative analysis based on specific indicators provides a starting point for deciding what an appropriate 2020 target is to announce for New Zealand.

### *Results of quantitative analysis*

Officials consider that the **equal mitigation cost indicator** is an important starting point for determining what is a fair contribution to international efforts which New Zealand has promoted in international negotiations. **The equal cost indicator** estimates targets for New Zealand by equalising the costs of meeting targets across all Annex 1 Parties (as a percentage of each country's GDP). These estimates give **smaller percentage reductions** for New Zealand than the targets that have been announced by most other Annex I countries. Compared to the average Annex I target announcement of about a 15% reduction on 1990 levels, the equal cost estimate for New Zealand is for an increase of about 15% on 1990 (about a 14% reduction on projected 2020 emissions). Compared to Australia's most stringent target of 24% below 1990 the equal cost estimate is for a New Zealand reduction of about 11% on 1990 levels. Other equal cost based estimates are summarised below:

Basis for an equal cost NZ 2020 target	NZ target (relative to 1990 emissions)	NZ target (relative to projected 2020 emissions)
<b>Annex 1 in aggregate commits to a 40% cut on 1990</b> Reduction required to stabilise emissions at <b>450 ppm CO<sub>2</sub>-e</b> , based on IPCC report (lower bound)	-8%	-32%
<b>Annex 1 -25% on 1990</b> Reduction required to stabilise emissions at <b>450 ppm CO<sub>2</sub>-e</b> , based on IPCC (upper bound)	+4%	-22%
<b>Annex 1 -15% on 1990</b> Aggregation of individual Annex I emissions reduction pledges - consistent with <b>550-650 ppm CO<sub>2</sub>-e</b> , based on IPCC report.	+16%	-14%
<b>Australia -25% on 2000</b> If global reductions are on track to achieve stabilisation 450 ppm CO <sub>2</sub> -e or lower.	-10%	-33%
<b>Australia -15% on 2000</b> If global reductions are on track to achieve stabilisation between 510-540 ppm CO <sub>2</sub> -e	+2%	-24%
<b>EU -30% on 1990</b> If other developed countries undertake similar commitments as part of a comprehensive international agreement	+10%	-18%
<b>USA -14% on 2006</b>	+10%	-18%

There are several other quantitative indicators that could be incorporated into an approach to judge the fairness of a target. These include greenhouse gas emissions per capita, GDP per capita, or past efforts to reduce emissions.

**Greenhouse gas emissions per capita** requires greater reductions of Parties with higher per capita emissions. There is some support internationally for this approach and it was one of the criteria used by Australia in deciding its 2020 targets. New Zealand has one of the highest per capita emissions among Annex I Parties, (after Australia, the USA and Canada) and this measure implies **larger percentage reductions** for New Zealand than for most other Annex I Parties (currently averaging -15% on 1990).

**GDP per capita** gives generally **smaller percentage reductions** for New Zealand than most other Annex I Parties.

Emissions trends over 1990-2005, give a **larger percentage reduction** for New Zealand than for most other Annex I Parties.

#### *Announcing a conditional target range*

In the absence of knowing the shape of the future climate change agreement, officials consider that the announcement in August should be a target range, of which the more stringent number is conditional on more ambitious global effort. Announcing a range gives an incentive to bring other countries into the agreement, which lowers the overall costs to New Zealand and acknowledges that global climate change action is in New Zealand's interests provided others take action. Other conditions could be attached to the range, such as no quantified complementarity requirement (restrictions on meeting climate change obligations by purchasing credits internationally), an efficient carbon market, and subject to satisfactory rules for forestry.

#### *Further analysis on the costs of meeting a 2020 target*

Results of new modelling by Infometrics and NZIER on the costs of a range of different targets in 2020 will be delivered in the coming weeks and officials will brief you on this in due course. Existing modelling data suggests that the costs will not have a large impact on GDP and that economic growth will continue even under the most stringent target.

Up to date projections of future emissions are also being developed, and will incorporate the results of LUCAS reporting due in mid to late July.

#### *Next steps*

Once the economic analysis from NZIER and Infometrics and LUCAS mapping data are available, we will provide possible negotiating scenarios for your consideration. It may be appropriate to discuss these at Cabinet Strategy Committee and the Ministerial Group prior to going to Cabinet.

## Recommended Action

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### We recommend that you:

- (a) **Note** officials' initial analysis of quantitative indicators to determine what might be a fair 2020 target for New Zealand.
- (b) **Refer** this note to the group of Ministers with portfolios relevant to climate change, as follows:
- Minister of Finance **Yes / No**
  - Minister of Energy and Resources **Yes / No**
  - Minister of Agriculture and Minister of Forestry **Yes / No**
  - Minister of Transport **Yes / No**
  - Minister of Maori Affairs **Yes / No**

Stuart Calman, Acting General Manager **Date**  
**Emissions Trading Group**

Referred to Ministry Communications Staff: No

Hon Dr Nick Smith **Date**  
**Minister for Climate Change Issues**

Hon Tim Groser **Date**  
**Associate Minister for Climate Change Issues (International Negotiations)**

## Purpose of Report

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1. This briefing note:
  - a. outlines a number of possible 2020 targets for New Zealand, calculated by equalising GDP costs between Annex I Parties; and
  - b. analyses other factors and implications which should be considered alongside the target scenarios when deciding what should be announced.

## Background

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2. Annex I Parties (industrialised countries) have been invited to announce emission reduction targets for the year 2020 to signal their commitment to an effective future climate change agreement.
3. Announcing an emissions reduction target signals an intention to take responsibility for emissions at a single point in time, in this case, the year 2020. While not binding, the 2020 target will influence the legally binding commitment negotiated for the second commitment period (CP2). The precise implications for CP2 depend on a range of factors including how the emissions trajectory between CP1 and 2020 is defined.
4. All Annex I Parties, except for Russia and New Zealand, have announced targets for 2020. These range from a return to 1990 levels (the USA<sup>1</sup>) to reductions of 30% below 1990 levels (Norway, the EU). In addition, some Parties (including the EU and Australia) have announced target ranges depending on the level of global ambition and the commitments agreed in Copenhagen. A full schedule of other Parties announced 2020 targets can be found in Appendix 1.
5. During the June negotiations, New Zealand signalled its intention to announce a target at the meeting on 10-14 August. Cabinet will need to decide on a target to announce and this paper summarises initial analysis of some factors that can inform that decision. Further analysis of the likely costs of different targets is expected soon, and the results of LUCAS mapping are expected in mid to late July.

## Factors to consider in deciding New Zealand's 2020 target

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6. There are a number of factors to consider when deciding New Zealand's 2020 target, including:
  1. Quantitative indicators of what a fair target is relative to other Parties announcements
  2. New Zealand's negotiating objectives
  3. The overall cost to the economy
  4. Domestic and international perceptions of different New Zealand target levels and how they compare to the targets announced by other countries.
7. **[Withheld]**,

officials have analysed different indicators of what an appropriate target/target range might be for New Zealand (as listed in point a above).
8. There are a number of indicators that can be used to determine fair effort between industrialised countries, including:

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<sup>1</sup> While the US is not part of the Kyoto Protocol negotiations, the international announcement of its 2020 target is an important signal of its commitment to a future climate change agreement.

- The costs of meeting a given target, as a percentage of GDP, reflecting that each industrialised country should face similar costs (referred to herein as the “equal cost” approach)
  - GDP per capita, reflecting the capability to pay for emissions reductions
  - Emissions per capita, reflecting the equal rights of people to use the atmosphere
  - Historic emissions, reflecting historic responsibility for climate change
  - Emissions intensity (emissions per unit of GDP) as a measure for domestic emissions reduction potential
  - Equal percentage reduction below BAU in 2020.
9. Annex I Parties that have announced targets have provided their own rationale for determining their fair target. While it is neither necessary nor likely that the negotiating process will reach an agreement on which approach to use, it will be important to explain the approach being used to determine New Zealand’s target.
10. For example, Australia took into account two approaches to determining a 2020 target: emissions per capita<sup>2</sup> and equal percentage reductions below BAU emissions for all developed countries<sup>3</sup>. Japan also used two approaches: one based on what reductions could be achieved if certain actions were taken (interpreted to mean domestic technical feasibility) and the other focused on fairness among industrialised countries by sharing the costs of reducing emissions. The EU uses four indicators: GDP per capita; GHG per unit of GDP; trend in emissions between 1990 and 2005; and population trends over the period 1990 to 2005.

## **Equal cost target estimates**

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### *Advantages of an “equal cost” approach*

11. Officials have explored the implications of applying the different approaches to setting fair targets between countries. The “equal cost” approach is both internationally credible and ensures New Zealand’s unique national circumstances are taken into account. Therefore, officials consider that the equal cost approach should be used as a starting point in analysing what is a fair target for New Zealand.
12. The equal cost approach is based on the premise that fair targets should result in an approximately equal as a percentage of GDP in each country. Calculation of the costs of reaching different targets is based on business as usual (BAU) emission projections for each country, the amount of abatement that can be achieved at different emissions prices (including the costs of taking responsibility for emissions reductions offshore), and countries’ relative income levels.
13. One of the main advantages of the equal cost approach is that it recognises a number of important national circumstances for New Zealand including that:
5. New Zealand has had the highest population growth in percentage terms in Annex I since 1990, and relatively high growth is expected to continue out to 2020.
  6. New Zealand’s business-as-usual (BAU) emissions are projected to increase by around 35 to 40% on 1990 levels by 2020, in part due to projections of population and economic growth.
  7. New Zealand has relatively low mitigation potential because of the existing renewable generation capacity and dominance of pastoral agriculture.

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<sup>2</sup> It assumed Australia takes on its proportionate share of global mitigation on a per capita basis, where per capita emissions ‘contract’ and converge’ in 2050.

<sup>3</sup> Where groups of countries at different levels of development take on reductions at slower rates and in later years.

8. New Zealand has relatively low GDP per capita compared to Annex I as a whole, higher than only than Russia and Ukraine when the EU is treated as a block.
14. Disadvantages of the approach include that it is based only on economic costs of mitigation and does not take into account other principles such as the equal rights of people to use the atmosphere (GHG per capita) and responsibility for causing climate change (historic emissions). In addition, the equal cost approach is determined factoring in emissions growth since 1990, which for New Zealand has been particularly high over this period.

#### *Methodology*

15. Because only Annex I Parties are expected to announce emissions reduction targets for 2020, this analysis focuses on Annex I Parties only (including the US).
16. To derive different options for you to consider, we have developed scenarios based on different factors. In all scenarios, indicative New Zealand targets are estimated by equalising the GDP cost of reducing emissions for each Party. Different scenarios are pegged to different levels of ambition: pegged to either aggregate Annex I reductions on track to achieve a particular GHG concentration, or to an individual country's target.
17. The mitigation cost estimates were obtained from a model developed by the Institute for Applied Systems Analysis (IIASA)<sup>4</sup>. Estimates from four other internationally accepted models were used to test the accuracy of the estimates and ensure consistency of the relative costs between countries.
18. An emissions price of NZ\$100 per tonne was used for all scenarios, with sensitivity tests to ensure that different prices do not result in significant deviations in targets.
19. The scenarios **do not include LULUCF**, for reasons outlined in a following section (paragraphs 30 to 33).<sup>5</sup> Whether or not LULUCF is included in the analysis is not very significant for 2020, but does have some important implications through time, in particular from 2025 to 2030 **[Withheld]**.

#### *Estimates using the equal cost approach*

20. Independent modelling consistently shows that New Zealand faces a higher cost of reducing emissions relative to 1990 levels compared to most other Annex I countries. Our equal cost estimated reduction targets are correspondingly not as large relative to 1990. This may give the perception that equal cost New Zealand targets appear, at face value, "less stringent" than the emission reduction pledges of other Parties announced to date. However, New Zealand does bear a similar economic cost as other Parties under each of these scenarios.
21. Table 1 sets out a range of targets for New Zealand according to different scenarios of global effort.
22. Under the majority of the scenarios, possible targets for New Zealand based on equal cost are above 1990 levels. Only those scenarios representing a high ambition (i.e.

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<sup>4</sup> IIASA is an internationally credible institute and its GAINS model of abatement costs and BAU projections is publicly available at [www.iiasa.ac.at](http://www.iiasa.ac.at).

<sup>5</sup> However estimates do include an adjustment to take account of Article 3.7 issues in the case of Australia, to ensure comparability.

Annex I -40% and Australia -25%) give reductions for New Zealand below 1990 levels, and no scenario gives targets much deeper than a 10% reduction on 1990.

**Table 1 Targets for New Zealand under different scenarios of global effort based on comparable cost**

Scenario for a NZ 2020 target		Base year (% above/below)			
		1990	2006	2020	per capita*
1	<b>Annex 1 -40% on 1990</b> Reduction required to stabilise emissions at <b>450 ppm CO<sub>2</sub>-e</b> , based on IPCC report (lower bound)	-8%	-27%	-32%	-34%
2	<b>Annex 1 -25% on 1990</b> Reduction required to stabilise emissions at <b>450 ppm CO<sub>2</sub>-e</b> , based on IPCC (upper bound)	+4%	-16%	-22%	-24%
3	<b>Annex 1 -15% on 1990</b> Aggregation of individual Annex I emissions reduction pledges - consistent with <b>550-650 ppm CO<sub>2</sub>-e</b> , based on IPCC report.	+16%	-7%	-14%	-16%
4	<b>Australia -25% on 2000</b> If global reductions are on track to achieve stabilisation 450 ppm CO <sub>2</sub> -e or lower.	-10%	-28%	-33%	-35%
5	<b>Australia -15% on 2000</b> If global reductions are on track to achieve stabilisation between 510-540 ppm CO <sub>2</sub> -e	+2%	-18%	-24%	-26%
6	<b>Australia -5% on 2000</b> If acting unilaterally	+14%	-9%	-15%	-17%
7	<b>EU -30% on 1990</b> If other developed countries undertake similar commitments as part of a comprehensive international agreement	+10%	-12%	-18%	-20%
8	<b>EU -20% on 1990</b> If acting unilaterally	+17%	-6%	-13%	-15%
9	<b>USA -14% on 2006</b>	+10%	-12%	-18%	-20%

\* target expressed as a change in per capita emissions in 2020 compared to 1990 levels.

23. Targets above 1990 levels still represent significant reductions on current projections for both gross *and* net emissions in 2020, which are indicatively projected to increase on 1990 levels by about 35%. For example, a 3% increase on 1990 levels represents a 25% reduction on New Zealand's 2020 BAU projected emissions. The 2006 base year also shows significant cuts in most cases.

24. Table 1 also shows how each of the targets can be expressed in per capita reductions in 2020, compared to 1990 per capita levels. Given New Zealand's relatively high population growth since 1990 and expected population growth to 2020, the per capita reductions are much greater.

## Comparable targets under other indicators

25. A positive target on 1990 is unlikely to be well regarded in the international negotiations and to some domestic audiences. While the fact that the cost approach takes account of many of New Zealand's unique national circumstances may be deemed positive to the New Zealand economy as a whole [Withheld].

26. These considerations provide scope to moderate a target calculated on comparable cost to a more 'acceptable' range if desired in accordance with other principles referred to in paragraph 8.
27. A quantitative approach based on emissions per capita gives generally **more stringent** targets for New Zealand than the Annex I average, due to our emissions per capita being about 20% higher than for the average for Annex I Parties. Past emissions (cumulative emissions over the period 1990-2005) gives generally **more stringent** targets for New Zealand than the Annex I average. GDP per capita gives generally **less stringent** targets for New Zealand than the Annex I average.
28. The EU's approach (described in paragraph 10) calculates a New Zealand target to be a 15% reduction target below 1990 levels (Australia and the US both get targets of 24% below 1990 levels) for a 30% reduction below 1990 levels for Annex I based upon a combination of four indicators. The two main indicators, GDP per capita and GHG per capita, when taken on their own, give reduction targets for New Zealand of 23% and 39% (compared to a 30% Annex I total) respectively.
29. The Philippines and South African proposals use historical emissions and capability (a mix of GDP and the Human Development Index) to share an aggregate Annex I reduction of 40% below 1990 levels by 2020. Their proposals give targets for New Zealand of 45% (Philippines proposal) and 36% (South African proposal) below 1990 levels.

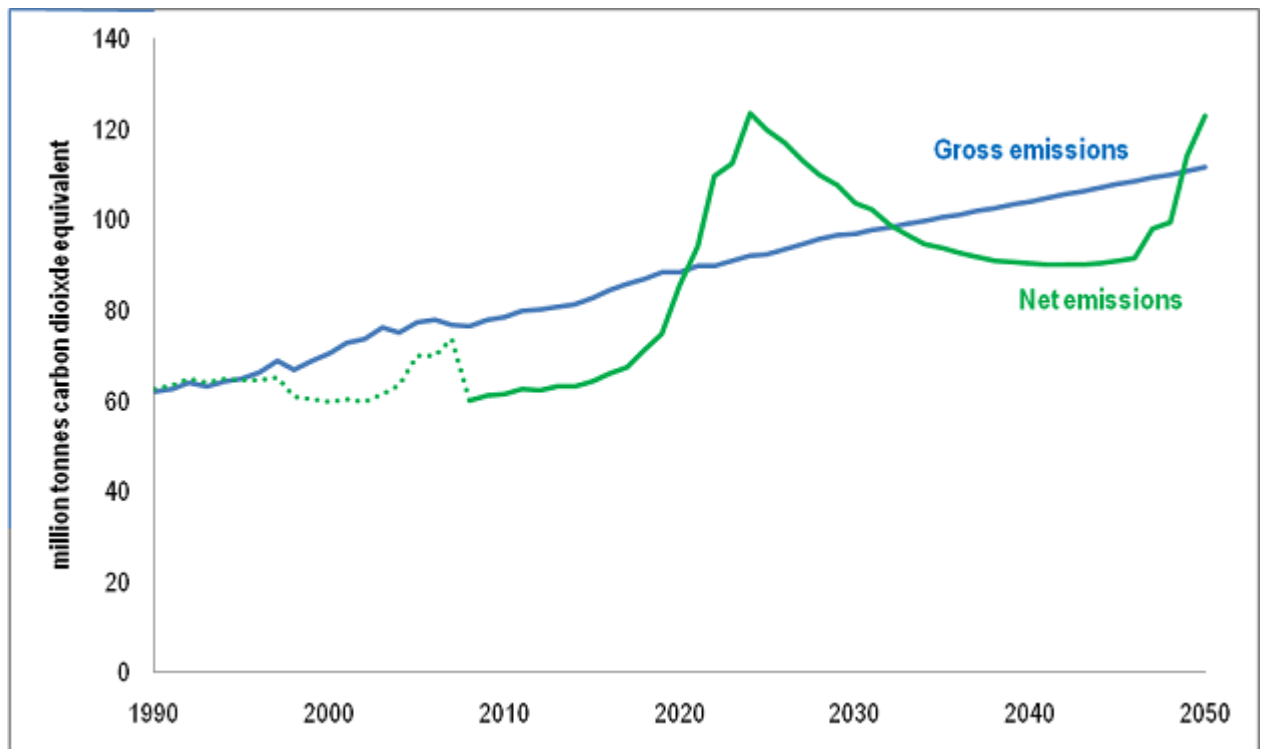
## **Land-Use, Land-Use Change and Forestry (LULUCF)**

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### *Treatment of LULUCF in equal cost target estimates.*

30. Because LULUCF is not an important contributor to emissions in most other Annex I countries, the models we use to base our equal cost approach estimates exclude the LULUCF sector. This omission does not have an important impact on our estimates because on current rules New Zealand's gross and net emissions are projected to be about the same in 2020 (refer figure 1 below).
31. In addition there are considerable difficulties with using net emissions as a basis for long run target setting. Sequestration from planted production forests is only a short run benefit that ultimately is countered by emissions when forests are harvested. Because of our uneven LULUCF emissions/sequestration trajectory, use of net emissions for target setting would result in large swings in targets at different points in time, which is unlikely to be feasible. Basing targets on gross emissions avoids this difficulty.

Figure 1 New Zealand's Gross and Net Emissions Projections to 2050



*LULUCF rule changes*

32. [Withheld].

Because these proposals are still being developed (and as such will have an uncertain effect) we recommend that the target announcement in August should be for gross emissions only, with a net emission target to follow when there is more certainty around the international rules for LULUCF.

33. [Withheld].

### **Economic costs of meeting the 2020 target**

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34. NZIER and Infometrics are currently working to estimate the economic costs of achieving a number of targets in 2020 based on general equilibrium modelling. We will brief you on the results when they become available in early July.

35. Initial indications from previous modelling for 2025 are that the costs of meeting a reduction target are not likely to be large relative to expected growth, which will continue under even a very stringent target. Around a third of these costs are related to a loss of competitiveness of our export sectors. Therefore, the greater the number of countries that participate in a climate change agreement, the lower the overall costs to the New Zealand economy, which supports a target range dependent on the level of global participation.

36. Basic estimates of the direct costs of taking responsibility for a 5% (relative to 1990) more stringent reduction target would be in the order of a little over 0.1% of projected GDP per annum in 2020 (assuming an emissions price of NZ\$100).
37. Because of our low domestic mitigation potential and high emissions growth, most targets will need to be met in part by paying for emission reductions offshore. This emphasises the importance of effective carbon markets for meeting New Zealand's target at least cost.

### *International financing*

38. In addition to the costs faced by New Zealand in meeting a target, developed countries are also expected to provide climate change finance to developing countries. There is little agreement on the size of the financing package, what developing country actions might amount to, or the governance and accountability arrangements for the use of such finance.
39. Developing countries have been much more explicit than developed countries on how finance should be generated e.g. direct public funding of up to 0.5% of GDP per year, auctioning up to 10% of developed country assigned amount units, or levying air and maritime transport. Within the developed world there is general agreement that not all finance should necessarily flow through the Convention i.e. finance will also flow through carbon markets, private sector investments and bilateral and multilateral arrangements.
40. These issues will be part of the political deal at Copenhagen and New Zealand will need to consider these financial obligations as well as the cost of the target. **[Withheld]**.

## **Options for an announcement**

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### *A conditional target range*

41. While New Zealand's 2020 target will need to become firmer at Copenhagen, officials consider that the announcement at the negotiations on 10-14 August should be of a **conditional target range**. This is because:
  - a. the level of global ambition that will be agreed, and therefore what is a 'fair share' for New Zealand, is not known;
  - b. there is still uncertainty around rules;
  - c. ongoing stakeholder engagement up to Copenhagen will provide the opportunity to refine the number; and
  - d. further analysis of the economic implications of a single number is desirable.
42. Announcement of a conditional target range in August would allow for the level of global ambition to be known, and to express New Zealand's key negotiating objectives such as the level of effort we expect from other countries, and specific rules of importance to New Zealand.
43. Having a range whereby the most stringent number is conditional on a higher level of global ambition signals New Zealand's is willing to do its fair share. A range also provides an incentive to bring other countries into the agreement, which lowers the overall costs to New Zealand and acknowledges that global climate change action is in New Zealand's interests provided others take action.

44. The conditions could be further fleshed out in the draft Cabinet paper to define what reductions New Zealand expects from Parties, which rules are most significant, and what financial architecture will be necessary to deliver a climate change agreement deemed acceptable to New Zealand. Conditions to consider include:
- a. An efficient integrated carbon market containing no quantified complementarity requirements (restrictions on meeting climate change obligations by purchasing credits internationally)
  - b. **[Withheld]**.
  - c. Global action is on track to achieve a specified concentration of greenhouse gases **[Withheld]**.
  - d. Key LULUCF rules **[Withheld]**.
  - e. **[Withheld]**
45. At Copenhagen and beyond, the target range may be narrowed, or refined to a single number, as greater certainty develops around our key conditions and the details of the agreement.

### **Other factors to consider**

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#### *The trajectory for the 2020 target and implications for the second commitment period and beyond*

46. The focus of the announcement in August is a commitment to reduce emissions in the year 2020 (or take responsibility for reductions by others). However, what will bind New Zealand in a future climate change agreement is the emissions reduction obligation across the second commitment period. Its length is yet to be agreed but is likely to be either 2013-2017, or 2013-2020. Negotiations of Parties' CP2 targets are scheduled to conclude in Copenhagen.
47. New Zealand's obligation in the second commitment period could vary considerably depending on the trajectory chosen between the first commitment period and the 2020 target. Two relationships for defining the trajectory are important.
- The starting point (for example, actual gross emissions in 2013 or the CP1 obligation): a starting point of actual gross emissions implies a less stringent CP2 obligation for New Zealand than starting from our CP1 obligation.
  - The shape of the trajectory towards the 2020 target: for instance whether a straight line trajectory, a trajectory based on a constant rate of change, or some other path also affects the future obligation.
48. The target announcement for 2020 also has potential implications for the longer term management of New Zealand's emissions. **[Withheld]**.

**+Appendix 1 – Emissions reduction commitments for 2008-2012 and announcements for 2020 (Annex I only)**

Party	Target for the first commitment period	2020 Target			2050 Target	Global Goal	Comments
		Range or value	Reference year	LULUCF?			
	% above/below 1990 levels						
<b>Australia</b>	<b>+8</b>	-5% acting unilaterally -15% if international effort -25% if international effort to stabilise at 450 ppm Co2e or less	2000	Y	60% below 2000	450ppm CO <sub>2</sub> e Peaking by 2020	Conditions for -25% target, include aggregate A1 reductions of -25% of 1990 levels and-20% deviation from BAU for major developing economies
<b>Belarus</b>	<b>no target</b>	-5 to -10%	1990	TBD			Target under consideration
<b>Canada</b>	<b>-6</b>	-20%	2006	TBD	60-70% below 2006 Approx 50-60 below 1990		Target under consideration
<b>European Union</b>	<b>-8</b>	-20% unilaterally -30% if international effort	1990	N for -20% Y for -30%		On a pathway to stabilisation at 2°C Aim for 450ppm CO <sub>2</sub> e	Adopted by legalisation
<b>Iceland</b>	<b>+10</b>	-15%	1990	Y	50-70% below 1990 (aspirational)		2020 target contingent on continuation of LULUCF
<b>Japan</b>	<b>-6</b>	-15% -8	2005 1990		60-80% below 2008 levels		Announcement expected shortly
<b>New Zealand</b>	<b>0</b>				50% below 1990	450ppm CO <sub>2</sub> e	
<b>Norway</b>	<b>+1</b>	-30%	1990	Y	Carbon neutral by 2050	Limit global average temperature increase to 2°C	2020 target contingent on continuation of LULUCF
<b>Russia</b>	<b>0</b>						Russia is currently considering establishing a mid-term target.
<b>Switzerland</b>	<b>-8</b>	-20 to -30%	1990	Y			
<b>United Kingdom</b>	<b>-8</b>	-34%	1990		80% below 1990	Same as EU	From Carbon Budget
<b>United States</b>	<b>-7 (but did not ratify)</b>	-14%	2005		83% below 2005		Figures by US EPA. 2020 target is approximately equal to a return to 1990 levels. Congress is considering the American Clean Energy and Security Act, which has proposed -17% below 2005 by 2020, -42% below 2005 by 2030 and -83% below 2005 by 2050.
<b>Ukraine</b>	<b>0</b>	-20%	1990				Target under consideration

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