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McGuinness Institute title: [EGI Sub (09) 16/6] Climate Change: New Zealand's 2020 Emissions Reduction Target

Office of the Minister for Climate Change Issues

Office of the Associate Minister for Climate Change Issues

(International Negotiations)

Chair

Cabinet

Climate Change: New Zealand's 2020 Emissions Reduction Target

Proposal

1. We seek your decision on New Zealand's 2020 greenhouse gas emissions reduction target, which we intend to announce at the international climate change negotiating session from 10 to 14 August 2009 in Bonn, Germany, following an announcement domestically.

Executive summary

2. New Zealand's primary climate change objectives are to secure an effective long-term global agreement to meet the objective of the United Nations Framework Convention on Climate Change (UNFCCC) to stabilise greenhouse gas concentrations in the atmosphere at a level that prevents dangerous human-induced climate change, and that New Zealand does its fair share as part of a global effort.

3. The Intergovernmental Panel on Climate Change (IPCC) assessed that the concentration of greenhouse gases in the atmosphere could be stabilised at 450 parts per million (ppm) of carbon dioxide equivalent (CO_2-e) if developed countries as a group reduce their emissions by 25% to 40% below 1990 levels in 2020 and there is a substantial deviation in emissions by major developing countries. Further reductions would also be required beyond 2020. To date, the aggregate of 2020 targets announced by countries fall short of the 25% to 40% reduction. At 450 ppm CO_2-e, there is a 50% chance of limiting global temperature rise to 2°C.

4. With this shortfall in mind, we recommend that New Zealand announce a target range conditional on the efforts of other countries. This conditionality enables New Zealand to adapt its target as the negotiations evolve to ensure an appropriate balance between the ambition of the target and its impact on New Zealand's international competitiveness and domestic economy compared to those of other countries.

5. We propose a target range of between 12% and 20% below 1990 levels by 2020 subject to a global agreement that sets the world on a pathway to limit global average temperature rise of not more than 2°C, comparable efforts by developed countries, actions by advanced and major emitting developing countries fully commensurate with their respective capabilities, effective rules for land use, land-use change and forestry (LULUCF), and full access to a broad and efficient international carbon market. If these conditions are not fully met, New Zealand would reserve the right to reconsider the stringency of its target. Where New

Zealand would set its final target within the range if our minimum conditions are met, would depend on the overall quality and ambition of the final agreement and the effectiveness of the rules. Only with a very high ambition final agreement would New Zealand be prepared to adopt a target at the stringent end of this range.

6. The conditions relating to effective LULUCF rules are that current LULUCF rules are broadly maintained (including continuance of the rule ensuring that the liabilities in post-1989 forests never exceed credits received) with changes to recognise carbon storage in timber products and to allow land use flexibility for pre-1990 forests.

7. Any target would be a "responsibility target", meaning that the target could be met through a combination of domestic emissions reductions, domestic sinks, and purchases of international units. New Zealand should retain the option to revise the target range if significant rule changes eventuate from the negotiations.

8. The total cost to New Zealand of a global climate change agreement post-2012 will reflect not only the stringency of New Zealand's emission reduction target for 2020 but also its total emissions budget over the second commitment period (CP2, the length of which is under negotiation) and other commitments with regard to finance for developing countries.

9. After the initial announcement of New Zealand's 2020 target in August, we will seek further confirmation from Cabinet of the negotiation mandate with regard to New Zealand's ultimate emission reduction budget for CP2 and financing commitments, as the negotiations evolve in the lead-up to the UN Climate Change Conference in Copenhagen.

Background

10. Parties to the UNFCCC and its Kyoto Protocol are currently negotiating emissions reduction commitments for post-2012. Developed countries have agreed in principle to further reduce their emissions, ensuring comparability of effort among them, and taking into account different national circumstances. Developing countries are also expected to enhance their national mitigation efforts.

11. As input to the negotiations, all other UNFCCC developed country Parties have announced their greenhouse gas emissions reduction targets for 2020. The targets announced by other countries range from a return to 1990 levels (the US Administration[1]) to reductions of 30% below 1990 levels (Norway). In addition, some parties (including the EU and Australia) have announced target ranges depending on the level of global ambition and the commitments agreed to in Copenhagen.

12. The government has committed to announce its position on New Zealand's 2020 greenhouse gas emission reduction target at the next negotiating session from 10 to 14 August 2009 in Bonn, Germany.

13. A 2020 target announced at this time is not internationally binding but frames the expectations regarding New Zealand's binding commitment for a second (and possibly subsequent) commitment period (CP2) under the Kyoto Protocol or equivalent future international agreement.

14. New Zealand's CP2 emissions reduction commitment will be part of a package of international commitments, alongside financing for developing countries to undertake mitigation and adaptation actions. While the economic and fiscal costs of

[1] More stringent targets are under consideration in the US Congress.

these commitments are not yet known, they could well be significant. These accompanying commitments should be borne in mind as much as possible when considering an appropriate target.

15. Furthermore, a 2020 target is not an end in itself. Rather it is part of a long-term response to the problem of climate change. Other issues will also need to be considered including the long-term global goal for stabilisation of atmospheric concentrations of greenhouse gases and emissions reductions (for 2050 and beyond), when global emissions need to start decreasing (often described as when emissions need to peak), and emissions trajectories.

16. Cabinet guidance on emissions reduction targets was most recently updated in March 2009 in New Zealand's position on the international climate change negotiations [CAB Min (09) 10/4]. This guidance noted that major policy decisions concerning emissions reduction targets would need Cabinet consideration.

Comment

17. New Zealand's primary climate change objectives are to secure an effective long-term global agreement to meet the objective of the UNFCCC to stabilise greenhouse gas concentrations in the atmosphere at a level that prevents dangerous human-induced climate change, and that New Zealand does its fair share as part of a global effort.

18. We first outline the environmental/scientific, economic and foreign affairs implications of a 2020 target, then propose for a target range with conditions and assumptions attached (a "conditional target range").

Environmental and scientific factors

19. The most recent IPCC assessment indicates that if the concentration of greenhouse gases in the atmosphere were to be stabilised at 450 ppm CO_2-e, there is a 50% chance of limiting global temperature increase to 2°C.

20. The IPCC assessment is that the concentration of greenhouse gases in the atmosphere could be stabilised at 450 ppm CO_2-e if developed countries as a group reduce their emissions by 25% to 40% below 1990 levels in 2020 and there is a substantial deviation in emissions by major developing countries.[2] Further reductions would also be required beyond 2020.

21. New Zealand's 2020 target should form part of a step towards ensuring that New Zealand's long-term target to reduce emissions 50% below 1990 levels by 2050 ("50 by 50") is achievable.

Economic factors

22. NZIER and Infometrics have modelled the costs of a number of 2020 targets scenarios, ranging from 15% above to 40% below 1990 levels.[3] The modelling suggests that New Zealand will experience significant increases in projected income

[2] Research which fed into the IPCC scenarios specified that these substantial deviations should equal between 15% and 30% reduction below business-as-usual in Latin America, Middle East, East Asia and Centrally-planned Asia.

[3] The modelling assumes a price-based measure and does not account for potential benefits and co-benefits of meeting targets. Scenarios assume zero change in technology or forestry in response to carbon prices, zero free allocation and no action by the rest of the world.

(measured as Real Gross National Disposable Income (RGNDI) per capita) under all targets within this range.

23. However, in 2020, the growth in income is lower under a 2020 target compared with income where there is no international or domestic climate change action. For example, at an emissions price of NZ$100 per tonne or carbon dioxide equivalent and with a target of a return to 1990 levels, RGNDI per capita is projected to increase from $38,500 currently to $48,000 in 2020, but this is $1000 less than what it would be in 2020 without any action. Other examples are shown in Table 1 below.

Table 1: Macro-economic impacts of different 2020 targets on 1990 levels

Target	World emissions price	RGNDI per capita ($NZ)
BAU in 2009	-	38,500
BAU in 2020	-	49,000
+15% AAUs on 1990	$100	48,350
1990 level of AAUs	$100	48,000
-15% AAUs on 1990	$100	47,650
-40% AUUs on 1990	$200*	46,000

* a target of this range implies high levels of global effort and correspondingly a high emissions price.

24. These costs assume no action by New Zealand's trading competitors. If other countries take on similar commitments and these are reflected in their domestic policies, competitiveness impacts and therefore the costs to the New Zealand economy are likely to be reduced by one third at a low emissions price ($25), and by one half at a higher emissions price ($100). Given this, there are both environmental and economic grounds to justify a more stringent target if other countries also take on stringent targets.

25. These costs are for the year 2020. Assuming the target in CP2 will lie somewhere on a downward-sloping trajectory between targets for CP1 and 2020, the economic costs will be correspondingly lower in the years leading up to 2020 than the costs in 2020. How the costs are distributed between taxpayers and emitters is a question of domestic policy.

26. The results of both departmental estimates and economic modelling show that any 2020 target will likely need to be met in large part through the purchase of emissions units internationally. This assumes a domestic price-based measure is in place and no new significant domestic emissions reduction policies being introduced. Therefore, in order to meet future targets cost-effectively, it is important that international carbon markets function with no or very few restrictions. For these reasons, officials recommend that the target announced should be a responsibility target conditional on open carbon markets, rather than a target to be achieved through domestic reductions only.

27. Estimates of the economic impact of the different 2020 target scenarios do not include the impacts on forestry, due to difficulties in modelling this. Estimating the actual response of forestry to emissions prices is difficult, but forestry is expected to contribute to meeting any target by reduced net emissions in 2020. This has a comparable effect to increasing New Zealand's allocation of AAUs or a less stringent target. As a result, the benefits of forestry would partially offset the costs to RGNDI in meeting a given target (this is discussed in paragraphs **Error! Reference source not found.** to 0).

International relations aspects

28. Informed by the IPCC's work, the Government has stated that it supports a global agreement to stabilise atmospheric greenhouse gas concentrations at no higher than 450 ppm CO_2-e.

29. In July 2009, the G8[4] and the Major Economies Forum[5] agreed that warming should not exceed 2°C above pre-industrial levels (roughly equivalent to 450 ppm CO_2-e). The G8 also agreed that developed countries should cut emissions by 80% by 2050 (using 1990 or a more recent base year) but did not comment on aggregate 2020 reductions.

30. To date, the aggregate of 2020 target bids put forward by other developed countries falls well short of the IPCC's 25% to 40% reduction range. In addition, developing countries have not yet tabled what emissions reduction actions they are prepared to contribute. **[Withheld].**

31. As we can expect New Zealand to take on further and more stringent emissions reduction commitments as part of subsequent international negotiations in the future, the choice of 2020 targets has enduring implications.

32. The targets of other developed countries range from a return to 1990 levels (the US Administration) to a 30% reduction on 1990 levels (Norway). Comparison of targets announced is provided in Appendix 1.

33. Presenting a target that is perceived by the international community as respectable is important both for New Zealand's influence in the negotiations and potentially for New Zealand's "clean, green" image. If our target were to be conspicuously out of line with those of other developed countries, it would become harder to maintain New Zealand's place in restricted groups. This in turn would make it harder for us to achieve our negotiating objectives in areas such as agriculture and forestry. There would also be a risk that resulting unfavourable publicity could damage New Zealand's reputation in markets for products and services.[6]

34. Expression and presentation of the target will therefore be important. Expression of the target's conditions and assumptions provides the opportunity to set out what New Zealand would like to see other countries bringing to the negotiations. The presentation of the target (e.g. in terms of different base years or in per capita terms) can help to give a more accurate picture of its ambition relative to other Annex I countries.

35. **[Withheld].**

[4] Canada, France, Germany, Italy, Japan, Russia, the UK, and the US.

[5] The MEF comprises the 17 major economies: Australia, Brazil, Canada, China, the EU, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the UK, and the US.

[6] Demand for New Zealand's food and agricultural exports, as well as the popularity of New Zealand as a tourism destination, both benefit to some extent from New Zealand's "clean green" image. It is extremely difficult to estimate the value of this. The extent to which New Zealand's 2020 target will affect it depends crucially on the value placed upon environmental sustainability by consumers in the future. However given that tourism and food and agriculture currently contribute around $39 billion to the New Zealand economy, the value of maintaining just a 1% premium paid for these goods thanks to a "clean green image" would be worth about $390 million per annum.

Indicators to help determine a fair target for New Zealand

36. There are a number of indicators that can be used to determine fair effort between developed countries. Several approaches are outlined below.

37. The **"equal cost"** approach takes into account a broad range of national circumstances, for example population growth, mitigation potential and relative wealth, and leads to each country facing the same first order costs[7], as a percentage of GDP, in meeting their target. Under the equal cost approach, New Zealand has relatively smaller reductions as a percentage on 1990 levels than most other developed countries. This is because the equal cost approach reflects New Zealand's higher population growth rate, lower mitigation potential, and lower GDP per capita, when compared with the average Annex I country. Based on the current targets announced by Annex I countries, of 15% below 1990 levels, the equal cost approach would imply a target for New Zealand of 15% above 1990 levels. Even for a very ambitious Annex I target of 30% below 1990 (as per Table 2 below), New Zealand's equivalent target would be 1% above 1990. Based on comparable cost with Australia, Australia's targets of 5%, 15% and 25% below 2000 levels give "equal cost" targets (including land use change) for New Zealand of 5% above 1990 levels, and 7% and 20% below 1990 levels respectively.

38. The **"GDP per capita"** approach reflects the capability to pay for emissions reductions. GDP per capita gives generally less stringent targets for New Zealand than the Annex I average.

39. The **"emissions per capita"** approach reflects the premise that all people should have equal rights to use the atmosphere. "Contraction and convergence" is one approach encompassing this, whereby countries, in the long-term, are given the same target on a per capita basis. Current emissions per capita give 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 (lower only than the US, Australia and Canada when the EU is taken as a block).

40. The **"past emissions"** approach reflects historic responsibility for climate change and is based on the "polluter pays" principle. Considering past emissions (cumulative emissions over the period 1990-2005[8]) gives generally more stringent targets for New Zealand than the Annex I average due to New Zealand's increase in emissions during that period.

41. Table 2 shows targets for New Zealand for an aggregate Annex I 30% reduction on 1990 levels using different indicators, undertaken by the International Institute of Applied Systems Analysis (IIASA), the Netherlands Environmental Assessment Agency (NEAA), the European Commission and a study by Copenhagen University for the Ministerial Greenland Dialogue (see Appendix 2 for Greenland Dialogue results).

[7] First order costs are the costs of reducing emissions domestically plus the costs of purchasing credits internationally. They do not include wider macro-economic feedbacks, such as impacts on exchange rates

[8] Other methods use pre-industrial revolution start years of 1750 and 1890.

Table 2: New Zealand targets under different indicators for a 30% aggregate Annex I reduction

Indicator	Aggregate Annex I target on 1990 levels	Study	New Zealand target on 1990 levels
Equal cost	-30	IIASA	+1%
		Greenland dialogue	+16% for Aus/NZ
Emissions per capita	-30	EC	-39%
		NEAA	-25% for Aus/NZ
GDP per capita	-30	EC	-23
		Greenland dialogue	-16 for Aus/NZ
Past emissions	-30	Greenland dialogue	-35 for Aus/NZ

Options for an announcement

42. We propose to announce a target range of 12% to 20% below 1990 levels by 2020 subject to certain minimum conditions and with assumptions attached (as outlined in the following section). A 2020 target in the form of a single number could be decided once there is greater certainty around the levels of global emissions reductions countries commit to and the key rules that will be in place. The final target would not necessarily fall within the 12% to 20% range. Appendix 3 provides text for how we propose to announce the target range.

Conditions

43. We propose the following minimum conditions be attached to the target range (i.e. what we would require in order to adopt a target within this range):

    a. a global agreement that sets the world on a pathway to limit global temperature rise of not more than 2°C;

    b. comparable efforts by developed countries;

    c. actions by advanced and major emitting developing countries fully commensurate with their respective capabilities;

    d. effective rules governing land use, land-use change and forestry (LULUCF); and

    e. full recourse to a broad and efficient international carbon market.

44. Any deviation from these conditions could significantly increase the costs of meeting a given target in 2020, and would therefore justify us adopting a less stringent target (less than a 12% reduction). These are discussed in turn below.

45. Because New Zealand is likely to be a net buyer of units, full access to international emission reduction units in meeting New Zealand's target will substantially lower the overall cost to New Zealand in meeting any given target.[9]

46. As well as the overall level of global participation in emissions reductions, the 12% to 20% target range would be conditional on effective rules for LULUCF being agreed to, namely the proposed Emissions to Atmosphere rule for harvested wood

[9] The rules for the use and supply of units in the future global carbon market are still under negotiation. Some countries are seeking to limit developed countries' use of international units to meet their emissions reduction commitments.

products, the proposed Land Use Flexibility rule and continuance of the Afforestation/Reforestation Debit-Credit (ARDC) rule. The effects of LULUCF rules are briefly described below.

[Withheld]

[Withheld]

[Withheld]

[Withheld]

External consultation

Feedback received from public engagement on New Zealand's 2020 emissions target

60. Public submissions on the 2020 emissions target closed on 31 July. A total of 317 written submissions were received. Of these, 179 (57%) expressed a numerical preference for an emissions target. These and the other 43% of submissions are summarised in Table 3[10].

Table 3: **Numerical targets proposed and other statements made by submitters on New Zealand's 2020 emissions reduction target**

Proposed target / submission	Number	Percentage
Reduction of 40%, or at least 40% on 1990 levels	140	44%
Reduction of 30% to 39% on 1990	14	4%
Reduction of 20% to 29% on 1990	15	5%
Reduction of 10% to 19% on 1990	3	1%
Reduce emissions from 0% to 9% on 1990	5	2%
Increase on 1990 emissions	2	1%
Generic support for an 'ambitious' or 'strong' target	20	6%
Generic support for 'cautious' target	15	5%
Express scepticism about climate change	59	19%
Other (no mention of target or approach)	44	14%
Total	**317**	**100%**

61. Common arguments supporting an ambitious target (20% to 40% below 1990 levels) cited were: acting now will be cheaper than acting later; we should base our target on what the science tells us is necessary; and doing so will protect our clean green image/brand.

62. The main reasons given for pursuing a more cautious emissions target policy (0 to 19% or an increase on 1990 levels) were that:

    a. New Zealand has low mitigation potential, especially in relation to agriculture

    b. higher targets have higher economic costs

    c. New Zealand should align with our main trading partners, especially Australia

    d. New Zealand should set targets that are achievable domestically

    e. New Zealand makes a small contribution overall to global emissions.

63. Fifty-nine submitters (19% of total submissions) were sceptical of climate change. Their submissions tended to focus on the validity of the science of anthropogenic global warming, and many provided arguments against the science used in the 2020 target brochure. The majority of sceptics did not specify a preferred target. Those who did tended to support a business as usual approach.

64. We received submissions from 18 major stakeholder groups, as at submission closing date. Many of these submissions made detailed suggestions regarding the

[10] Note that where a submitter expressed a preference for a target range, the most stringent figure in the range has been recorded in the table below.

development of climate change policy. These submissions are summarised in Table 4 below and where targets are expressed, they are depicted on the graph in Appendix 1.

Table 4 Summary of submissions from major stakeholder groups

Organisation	Suggested target	Comment
Greenhouse Policy Coalition (joint submission with Business NZ, Meat and Wool NZ, Wood Processors Association, Road Transport Forum, NZ Business Roundtable, Major Electricity Users' Group, Federated Farmers)	Modest target, with costs not out of step with countries.	Target of 15% below 1990 too costly. NZ abatement costs are 2nd highest of all Annex I countries. Conditional target should be based on international action and LULUCF. Government action with research and development and tree planting important, should not be left to the market.
Council of Trade Unions	24% below 1990 (unilateral) 40% below 1990 (conditional)	40% target, conditional on: a global agreement or at least participation by developed countries and most large developing countries; emissions pricing in countries that New Zealand trades with; and transitional measures for workers including job protection and retraining.
Dairy NZ	Level of target not stated. Target should be conditional on an international agreement based on 450ppm, 25% below 1990 aggregate for developed countries, slow growth for developing countries plus financing for mitigation and adaptation by globe.	Suggests an intensity-based conditional approach which takes into account our contribution to international research, especially on agriculture. Comparable efforts to other countries based on % of GDP and LULUCF rules are important.
Environmental Defence Society	Gross emissions target of 25% on 1990, and 30-40% if developed and developing countries take on serious commitments.	Government should re-visit the 50:50 target to upwards of 80% to reflect international efforts to stabilise global emissions at 450ppm.
Federated Farmers	Delay setting a target.	Debate on the target should take place after the Select Committee reports back on the NZ ETS and the ambitions of other countries are known.
Fonterra	Conservative short-term target. More stringent post-2020 target, because there will be technological advancements by then.	Support for sector specific, intensity-based targets conditional on LULUCF rules and actions by other countries.
Greenpeace New Zealand	40% reduction on 1990 levels by 2020	40% is what the science says is necessary.
Local Government New Zealand	Level of target not stated. Target must take into account wider costs such as adaptation and insurance claims.	Although broader costs are not readily quantified, a wide range costs such as those associated with sea level rise, storms and droughts need to be considered.
New Zealand Centre for Political Research	Delay setting a target.	Delay target announcement until after Copenhagen. Oppose successor to Kyoto Protocol to avoid economic cost of a target of 15% below 1990.

Organisation	Suggested target	Comment
New Zealand Chambers of Commerce	'Realistic target', in light of New Zealand's trading partners.	Government should move in line with key trading partners, avoid damage to New Zealand reputation and be open about costs.
New Zealand Institute of Forestry	Level of target not stated. Should have specific sectoral targets, based on what is achievable without relying on purchasing international credits.	Sector-specific targets supported, particularly Government-led afforestation, forest resource also lies as a significant bio-fuel source, although a price based approach via ETS will not achieve the reductions required.
Oxfam New Zealand	At least 40% reduction on 1990 levels by 2020.	Without substantial emissions reductions, some Pacific islands could become uninhabitable. New Zealand has a responsibility to help fund adaptation in the developing world.
Public Health Association of New Zealand	No specific target, but reductions are required.	Major international action is needed to ensure intergenerational equity. Significant health co-benefits of reducing emissions.
Solid Energy	10% below 1990 by 2020, 20% below 1990 by 2030, 40% below 1990 by 2050.	Proposes medium-term strategy based on afforestation, complemented by ETS and other real opportunities/ technology.
The New Zealand Business Council for Sustainable Development	Two-tier proposal: 20% unilateral reduction in gross emissions, and a possible (and conditional) reduction of 30% or more by 2020.	30% or more by 2020 conditional on: protecting trade competitiveness; significant reductions required of major economies; rules for forestry and soil carbon.
The Petroleum Exporters and Producers Association of New Zealand	No specific target.	Warns against ambitious targets, eg, 40%, as too costly. Target should be conditional on comparable effort by other major emitters. Analysis of near-term costs and benefits should be done and consulted on before a decision.
The Sustainability Trust[11]	40% below 1990.	Not enough emphasis given to benefits and co-benefits of stringent action to reduce emissions, renewable energy and energy use. Do not focus just on negatives, a balanced picture is required. Not enough attention being paid to not taking action.
Meat and Wool New Zealand Limited	No specific target.	Meat and Wool industries have already reduced their emissions by 15% between 1990 and 2008. International agreements should treat agriculture differently.

Consultation with the Climate Iwi Leaders Group

65. On 4 August 2009, the attached statement (Appendix 5) was received from the Climate Change Iwi Leaders Group (ILG) on a possible 2020 emissions reduction

[11] Submitting as a member of the New Zealand Climate Action Partnership network

target, following a national hui on 4 August to discuss this matter. The Minister for Climate Change Issues met with ILG after the hui.

66. In brief, ILG is committed to supporting the government in the international arena on this matter. ILG considers that any international target should be inextricably connected to the domestic policy, and ILG supports a "conservatively courageous approach to setting a 2020 carbon reduction target" based on two principles:

    a. that international commitments must allow enough flexibility for New Zealand's unique domestic circumstances to be accommodated; and
    b. that New Zealand's international competitiveness must be maintained by aligning our commitments to carbon reduction with our peers in the international community.

67. ILG consider the guiding imperatives are:

    a. equitable distribution of benefits, risks and liabilities; and
    b. fulsome engagement, as Treaty partners, in the development of domestic policy responses.

68. On these, ILG is prepared to support the 2020 target range as discussed on 4 August 2009. Their position is represented on the attached graph (Appendix 1).

Financial implications

69. A 2020 target does not in itself create financial implications but it will form the basis of the negotiation of binding targets for subsequent commitment periods. A target of 12% below 1990 levels would imply an Assigned Amount Unit (AAU) allocation for the eight years from 2013 to 2020, of approximately 460 million AAUs. Forecast net emissions for this period, assuming an emissions price of $50 per tonne and an assumed afforestation rate of 25,000 hectares per annum, are currently around 500 million tonnes.

70. When sufficient certainty around the form of the international agreement and New Zealand's participation is obtained, the Government would have to recognise the liability associated with the agreement in its accounts. As illustrated in Appendix 4, using an emissions price of $50 per tonne, the Government would have to recognise a liability of around $2.0 billion for the 8 year period (higher planting rates would reduce this liability while the converse is true).

71. Separately in the Crown accounts, inflows and outflows under the NZ ETS are recognised. Over time as all emitting sectors are included in the NZ ETS and free allocation is phased out or expires (e.g. deforestation allocation) the Government receives positive net income from the NZ ETS. Current rough forecasts indicate that the net income from the NZ ETS over the 2013-2020 period could fund a substantial portion of the liability identified above.

72. In terms of the new forest plantings that may be generated between 2013 and 2020 as a result of New Zealand participation in future international agreements (and assuming appropriate domestic policy settings), several points are of note. Firstly, over the course of their growth period, new forests will sequester approximately 40 million tonnes of CO_2. On harvest, New Zealand will be liable for the bulk of this amount, approximately 30 million tonnes of CO_2. These are changes in stocks of CO_2 and have a value of $4 billion, with a future liability of $3 billion.[12] The flows of

[12] These figures are drawn from Table 5 and assume a planting rate of 50,000 ha per year, total sequestration of 800t/ha, and a carbon price of $100/tonne. Not all carbon that is sequestered by new

CO_2 in 2020 associated with this new planting are 10.1 million tonnes, with an assumed value of $1010 million.

73. The fiscal implications of different planting rates are determined by the rate at which post-1989 foresters opt-in to the ETS. Assuming that 50% of foresters choose to opt-in, the fiscal effects are 50% of the figures above. Note that the Crown has options to manage the harvest liabilities associated with post-1989 forests that it retains control over (in a carbon sense). So long as the Crown retains sufficient units from sequestration then there is no risk associated with harvest liabilities.

Accounting Implications

74. The other important feature that is associated with setting any 2020 target is that it will become necessary to recognise a contingent liability associated with the harvest of all post-1989 forests on the Crown accounts. These liabilities are a result of the credits generated by post-1989 forests being used over the period 2008-2020 to reduce New Zealand's deficit. These liabilities would be about $21 billion (assuming a $100 per tonne emissions price), and are slightly smaller than the carbon gained through the growth of these forests. Treasury has provided advice to the Minister of Finance on this matter.

Departmental Consultation

75. The following departments were consulted in the development of this paper: the Treasury, Ministry of Foreign Affairs and Trade, Ministry of Agriculture and Forestry, Ministry of Economic Development, Ministry of Transport, Te Puni Kokiri, Ministry of Research, Science and Technology, Ministry of Fisheries, Department of Conservation, Department of Prime Minister and Cabinet, and the Energy Efficiency and Conservation Authority.

76. MAF, MFAT and MfE are of the view that it is critical for New Zealand to argue for the inclusion of forestry in the next international climate change agreement (albeit with some adjustment to the international LULUCF rules). Given current technologies, New Zealand's cheapest mitigation options of any scale involves forestry, and there is definitely benefit for New Zealand associated with new forest plantings. These benefits manifest themselves in the "buying of time" associated with new forest plantings, and the permanent sequestration of carbon from the change in land use to forestry. To be consistent with this approach, the target New Zealand announces in the UNFCCC negotiations needs to take account of the contribution that forestry could make.

77. However, it is difficult to quantify these benefits. It will be important to consider how to manage the fact that forests both sequester and emit carbon creating a flow of credits and liabilities. In addition, projecting net carbon sequestration from New Zealand's forests is difficult because of the uncertainties in carbon measurement and the impact that emissions prices and the international timber market will have on harvesting and afforestation decisions.

Treasury comment

78. Setting the 2020 target is possibly the most important decision Ministers will make this year, because of the economic and fiscal costs it will end up imposing on New

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forest planting is required to be repaid under Kyoto rules assuming – as is likely in the vast majority of cases – that harvested land is replanted in forest.

Zealand. Treasury's comments are focused on four issues: setting a target range that takes on a fair share of cost relative to other countries; the role of forestry in setting targets; potential reputational impacts; and further financial commitments.

Doing New Zealand's fair share

79. Treasury advises against the proposed 2020 target range of 12% to 20% below 1990 levels as New Zealand would be incurring costs significantly greater in relative terms than those faced on average by Annex I countries.

80. Treasury agrees that New Zealand should do its fair share as part of the global climate change response and considers that this should mainly be assessed by comparing the relative costs incurred by countries in meeting their announced targets.

81. International studies show that the first order costs that Annex I countries would face in meeting their announced targets (which in aggregate are 15% below 1990 levels) are 0.1% of GDP in 2020. New Zealand's equivalent costs of a 12% below 1990 target are 0.8% of GDP in 2020. The studies do not include emission reduction potential in the forestry sector.

82. The world's two largest economies, US and Japan, have announced 2020 targets with a 2005 base year. Treasury recommends using the same base year. On an equal cost basis this would mean a target range (exclusive of forestry) for New Zealand of:

    a. 8% below 2005 gross emissions levels (equivalent to 15% above 1990), based on the current targets announced by other Annex I countries;

    b. 15% below 2005 gross emissions levels (6% above 1990), conditional on Annex I countries increasing their effort to 25% below 1990 levels and non-Annex I countries reducing emissions by 15% below BAU; and

    c. 26% below 2005 gross emissions levels (7% below 1990), conditional on Annex I countries increasing their effort to 40% below 1990 levels, and non-Annex I countries reducing emissions by 30% below BAU.

83. Treasury's recommendation includes a lower target, based on the current efforts from other countries. This would help anchor expectations at a point, from where negotiations could begin, and would only apply if an international agreement is reached. More ambitious targets could be agreed to, under the condition that other countries increased their efforts to specific levels, which is an approach that the EU and Australia have also adopted (note that the EU's and Australia's lower 'anchor' targets are unconditional).

Including forestry in a target

84. Including the forestry sector in an equal cost approach would enable New Zealand, and other Annex I countries, to meet their 2020 targets at less cost. However, as the accounting rules for forestry are yet to be agreed, Treasury recommends announcing a forestry-exclusive target in August. This would be consistent with a number of Annex I countries, including Canada.

85. Forestry can be added once the impact of the accounting rules has been determined. However, if forestry was to be incorporated into an announcement, it is important to recognise that most of the credits that are generated by forests have an associated liability that needs to be repaid when the forests are harvested. While

forestry can therefore delay some of the cost, as carbon prices are likely to increase over time the future costs of harvesting may actually be greater than the savings generated by using the credits in the first place. Foresters would have the option of never harvesting their forests, if carbon prices were very high. Treasury would however not recommend relying on a particular response from foresters.

Reputational impacts

86. The major reputational risk for New Zealand will arise if it has to renounce its targets, either because other countries are not committing to ambitious enough targets, or if the rules that are being sought for the carbon market and forestry are not accepted, or impose more cost on the economy than expected. **[Withheld].**

87. Treasury does not consider that there are major reputational costs associated with announcing a target range that has a similar impact on GDP as our major trading partners (i.e. a range including targets above 1990), in particular:

- The potential effects on New Zealand's clean green brand, which comprises a number of environmental and food-safety factors, are difficult to quantify. As New Zealand is likely to ratify a new climate agreement, has a comprehensive ETS in legislation, has a range of complementary climate change policies and expenditures, and produces carbon-efficient goods, we consider the risks to our brand are limited.
- The potential effect to other parts of the negotiations is unclear, but probably limited. **[Withheld].**

88. Any potential cost which might be avoided by accepting a more ambitious target, should be compared with the additional cost to New Zealand from such a target. The difference between adopting a target which represents an equal cost (8% below 2005) instead of 12% below 1990 levels is estimated at $4 billion over 2013-2020 (assuming an average price of carbon of $50 per tonne).

89. To address some of the concerns around how New Zealand's target may be perceived, Treasury agrees that it is important to compare any target New Zealand announces, with the targets announced by other developed countries. For example the US Administration has announced a target of 14% below 2005 levels and Australia has announced a target range of 5-25% below 2000 levels. A target for New Zealand that is close to matching these announced targets (on the base years they have used), is unlikely to have major reputational impacts.

Further financial commitments

90. In addition to the costs of meeting a future emission reduction target, there is an international expectation that individual countries will contribute financial support to the global effort on mitigation and adaptation. **[Withheld].**

In addition to this, commitments for research and development funding will be necessary. Ministers have yet to consider the full cost

of meeting New Zealand's potential obligations under a new climate change agreement.

Human rights

91. There are no inconsistencies with the Human Rights Act 1993 and the New Zealand Bill of Rights Act 1990.

Gender implications

92. No gender analysis has been undertaken because there are no significant gender implications.

Legislative implications

93. This paper has no immediate legislative implications. Should New Zealand decide to ratify any new international climate change agreement that results from the UN Climate Change Conference in Copenhagen in December, there may be legislative implications for the Climate Change Response Act (2002).

Regulatory impact analysis

94. No Regulatory Impact Statement is required at this stage. Regulatory implications would ensue if New Zealand decides to ratify any new international climate change agreement. An extended National Interest Analysis (including the elements of a Regulatory Impact Statement) will be prepared at that point. Adequacy assessment of the RIA and its presentation in the ultimate NIA will be undertaken by Treasury's Regulatory Impact Analysis Team given that this proposal will be significant.

Publicity

95. It is our intent that a domestic announcement of the 2020 target will be made prior to the announcement at the international negotiating session in Bonn, Germany from 10 to 14 August. Accompanying press releases and Q&A material will also be issued.

96. The public meetings held on the 2020 target attracted high levels of attention. The public statement is likely to attract a significant amount of media and stakeholder interest.

Recommendations

97. The Minister for Climate Change Issues and the Associate Minister for Climate Change Issues (International Negotiations) recommend that the Committee:

1. note that New Zealand has committed to announce its position on a 2020 greenhouse gas emissions reduction target at the climate change negotiating session in Bonn, Germany from 10 to 14 August 2009

2. **EITHER**

2.1. agree that the announcement should be a responsibility target range of between 12% and 20% below 1990 levels by 2020 subject to the following minimum conditions being met:

2.1.1. a global agreement that sets the world on a pathway to limit global temperature rise of not more than 2°C

2.1.2. comparable efforts by developed countries

2.1.3. actions by advanced and major emitting developing countries fully commensurate with their respective capabilities

2.1.4. effective rules governing land use, land-use change and forestry (LULUCF)

2.1.5. full recourse to a broad and efficient international carbon market

2.2. agree that "effective rules governing LULUCF" refers to broadly the current LULUCF rules, which include continuance of the Afforestation/Reforestation Debit-Credit rule, and with the addition of agreement to the Emissions to Atmosphere and Land Use Flexibility rules

2.3. agree that New Zealand would retain the option to adopt a final target range less stringent than 12% if these conditions are not met

2.4. agree that if these conditions are met, a final figure for the target within this range would be decided based on the comprehensiveness and overall ambition of the final agreement.

OR (Treasury Recommendation)

2.5. Agree that the announcement should exclude forestry and represent an equal share of the costs incurred by other Annex I countries.

2.6. An equal cost target range would be 8% to 26% below 2005 emissions levels (equivalent to a range of 15% above 1990 levels to 7% below 1990 levels) by 2020, in which:

2.6.1. the 8% below 2005 gross emissions levels target (equivalent to 15% above 1990) is based on the current targets announced by other Annex I countries

2.6.2. the 15% below 2005 gross emissions levels target (6% above 1990) is conditional on Annex 1 countries increasing their effort to 25% below 1990 levels and non-Annex I countries reducing emissions by 15% below business as usual; and

2.6.3. the 26% below 2005 gross emissions levels target (7% below 1990) is conditional on Annex I countries increasing their effort to 40%

below 1990 levels, and non-Annex I countries reducing emissions by 30% below business as usual.

3. note the support of the Climate Change Iwi Leadership Group for a conservative target in the range of between 12 and 20%, on the understanding of the following guiding imperatives:
    3.1.1. equitable distribution of benefits, risks and liabilities
    3.1.2. fulsome engagement, as Treaty partners, in the development of domestic policy responses
    3.1.3. consideration of inclusion of the Treaty partner in the New Zealand delegation to the international negotiations
4. note that 317 written public submissions were received following consultation on the 2020 emissions target and that over 1,600 people attended 14 meetings in nine centres
5. note that it is intended to announce this domestically prior to the announcement internationally
6. agree to the proposed wording for announcement of the 2020 target contained in Appendix 3
7. delegate responsibility to the Minister for Climate Change Issues and the Associate Minister for Climate Change Issues (International Negotiations) to make minor amendments to the announcement contained in Appendix 3
8. authorise the Minister for Climate Change Issues to publicly release this paper, subject to any necessary withholdings under the Official Information Act 1982.

_____

Hon Dr Nick Smith
Minister for Climate Change Issues
_____ /_____ /_____

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Hon Tim Groser
Associate Minister for Climate Change Issues (International Negotiations)
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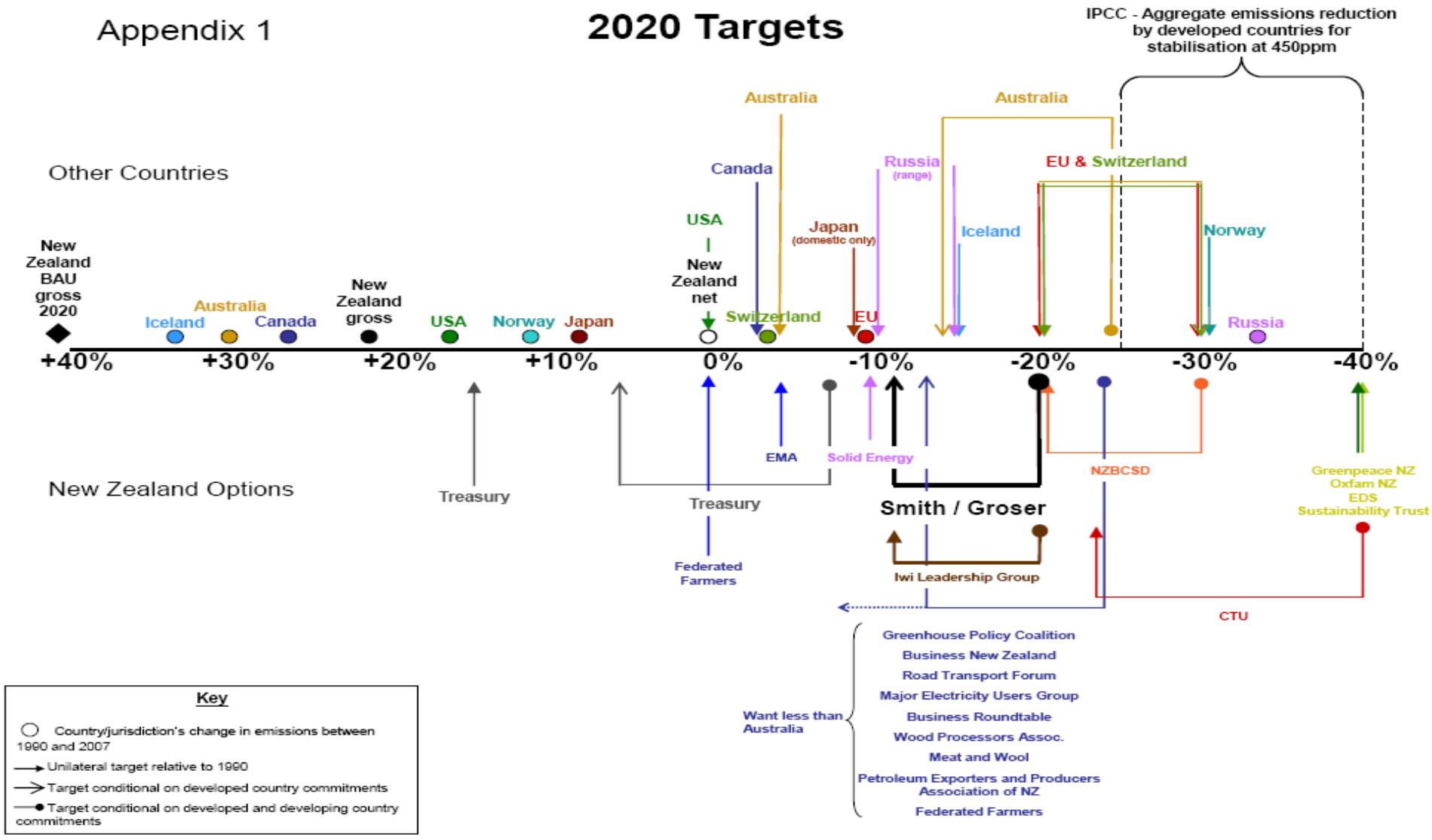
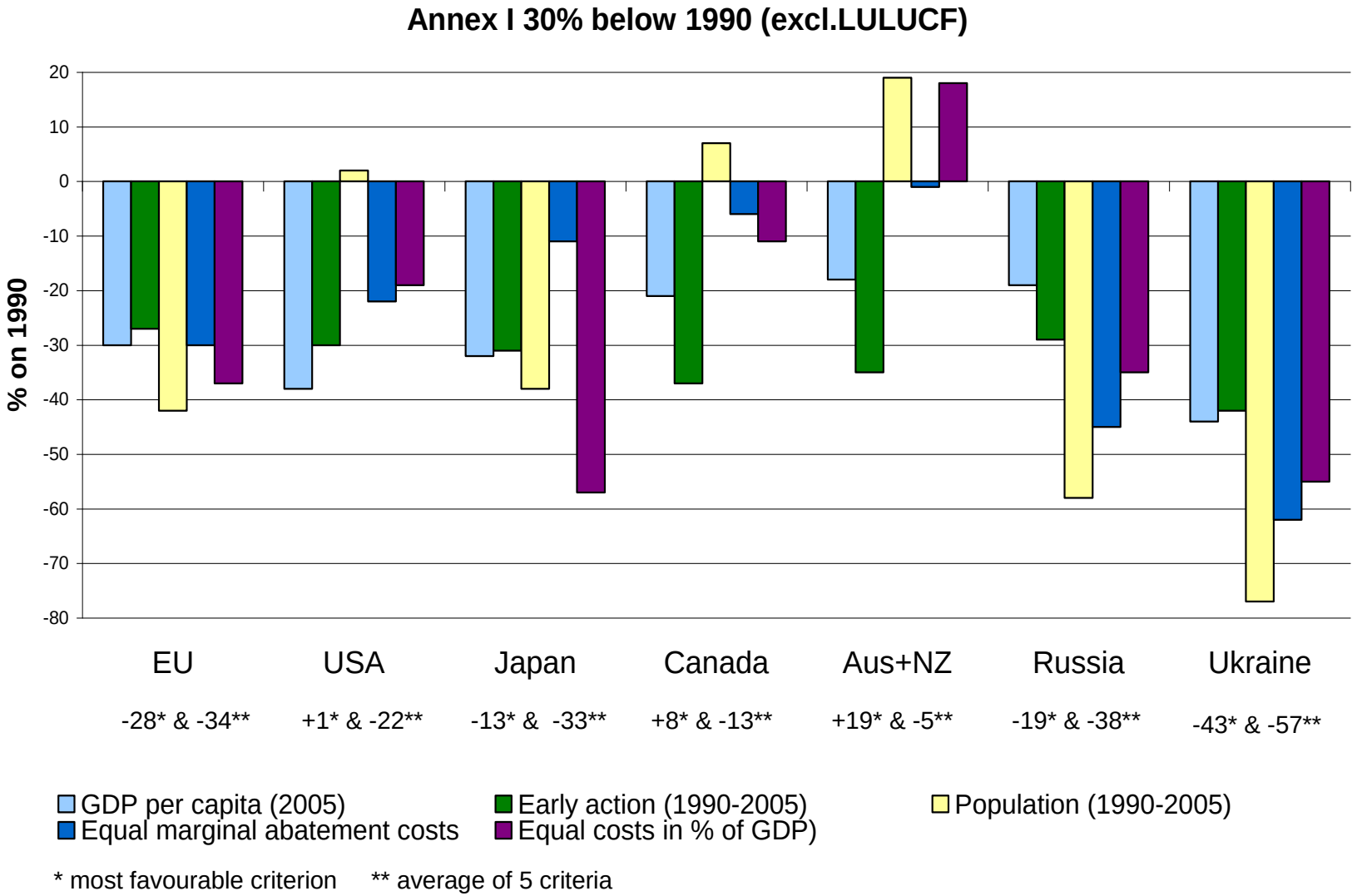
Appendix 1. Comparison of targets announced



Appendix 2. Use of five criteria to determine 2020 targets for Annex I Parties

Developed by the University of Copenhagen for the Ministerial Greenland Dialogue, July 2009.

Five possible criteria



Appendix 3. Statement to be made by New Zealand Ambassador for Climate Change to the UN climate change negotiating session from 10 to 14 August in Bonn, Germany.

The Government has today announced to a 2020 target range to signal New Zealand's commitment to a successful and ambitious outcome from the UN Climate Change Conference in Copenhagen in December.

New Zealand is prepared to take on a responsibility target for greenhouse gas emissions reductions of between 12% and 20% below 1990 levels by 2020, if there is a comprehensive global agreement. This means:

- the global agreement sets the world on a pathway to limit temperature rise to not more than 2°C;
- developed countries make comparable efforts to those of New Zealand;
- advanced and major emitting developing countries take action fully commensurate with their respective capabilities;
- there is an effective set of rules for land use, land-use change and forestry (LULUCF); and
- there is full recourse to a broad and efficient international carbon market.

It is expected New Zealand would meet its target through a mixture of domestic emission reductions, the storage of carbon in forests, and the purchase of emissions reductions in other countries.

Effective LULUCF rules refer broadly to the current international rules for forestry and land use, with changes to recognise carbon storage in timber products and to allow land use flexibility for pre-1990 forests.

Should the world achieve this comprehensive global agreement, where New Zealand's final target will lie within the 12% to 20% range will depend on the overall ambition of the agreement and the effectiveness of the rules.

If the international agreement falls short of meeting these conditions, New Zealand reserves the right to reconsider the stringency of its target.

New Zealand's target reflects its fair share of ambitious global mitigation efforts. Reductions of 12% and 20% below 1990 levels are equivalent to 28% and 35% below 2007 levels. Independent studies show that the direct costs of New Zealand's target as a percentage of GDP will be considerably more than the average of other countries' 2020 targets announced so far, highlighting New Zealand's support for a comprehensive agreement.

New Zealand's 2020 target was decided following consultation with New Zealand business, farmers, environmental groups, Māori, scientists, academics and other stakeholders.

Appendix 4. Economic and Fiscal Impacts of a 2020 target.

	RGNDI per capita	[Withheld]	[Withheld]	NZ's surplus/(deficit) ($bn)	[Withheld]	[Withheld]	[Withheld]
Forestry response assumed	None			None			
BAU current	$38,500			N/A			
BAU (2020)	$49,000			N/A			
+15% on 1990	$48,350			1.2			
1990 levels	$48,000			(1.0)			
-12% on 1990	$47,720			(2.7)			
-15% on 1990	$47,650			(3.1)			
-20% on 1990	$47,540			(3.8)			
-40% on 1990	$47,250			(6.6)			

- Real Gross National Disposable Income (RGNDI) per capita estimates are expressed in 2006 dollars, and assume a $100 emissions price in the year 2020
- New Zealand's surplus/deficit is the estimated cost of selling or purchasing emission units from the rest of the world over the period 2013-2020. It assumes a straight line trajectory from the CP1 obligation to the 2020 target, a $50 world emissions price on average over the period, and mitigation from all sectors except forestry, which only has lower deforestation in response to the emissions price
- These costs assume no action by New Zealand's trading competitors. If other countries take on similar commitments and these are reflected in their domestic policies, competitiveness impacts and therefore the costs to the New Zealand economy are likely to be reduced by one third at a low emissions ($25), and by one half at a higher emissions price ($100).

Appendix 5. Statement on Behalf of Iwi Leaders Group on 2020 Target

To Hon Dr Smith
4th August 2009

Iwi Leaders have discussed this morning, the same challenge that the government faces in terms of assessing an appropriate 2020 target, that is, balancing environmental and economic imperatives. We agree that both imperatives must be supported to achieve a sustainable environment and a sustainable economic future.

Iwi live under the korowai of kaitiakitanga: there is an absolute and unarguable need to safeguard the environment into the future. Environmental imperatives are fundamental to our identity. These values-based commitments contribute to the "clean, green, pure" New Zealand brand, and we believe, the ultimate environmental outcomes we enjoy as a nation.

Economic growth is fundamental to all our futures, and for Iwi and Māori, an area in which we are playing catch up for well known historical reasons and statutory encumbrances.
Iwi Leaders have discussed this morning, the dilemma and challenge of seeking to reconcile these two fundamental imperatives. For us, there are important distinctions and principles that must guide our approach to setting a 2020 target.

The first distinction is between carbon reduction and being carbon positive, both of which require different strategies and actions, but are equally important. We must focus on both of these dimensions, and develop practical tools for advancing both of these together.

The second distinction is between setting an aspirational target and an internationally binding target. An aspirational target is one that we can commit to as a nation – it must be inspiring, motivating and compelling to harness our national momentum to both reduce carbon emissions and drive toward becoming carbon positive.

For Iwi striving toward an aspirational target, must involve carbon positive action through sequestering carbon, and reducing our emissions through increased efficiencies and developing practical and effective plans and mechanisms.

Our binding 2020 target however, that comes with legal and political consequences, must beyond all else, be capable of being met. New Zealand is known in the international community for doing what we say we will. It is therefore critically important that our 2020 target can and will be met. An unrealistic target that is not met in 2020 will compromise our clean, green brand far more, than a modest target that is exceeded.

For Iwi, it will take us time to meet our ideals – we cannot immediately perfectly balance environmental and economic imperatives. This is because we are an emerging economy with an emission profile that is more like a developing nation than a developed one. It will take us time to reduce our emissions as our economy grows. We are also concentrated in industries that means we are twice as exposed to global forces – this trade exposure means we are disproportionately vulnerable to carbon reduction targets.

Iwi Leaders also recognise that the New Zealand economy has unique features that exaggerates the key tensions being played out in the international arena between carbon reduction and food security.

Iwi Leaders do not believe that we, as a nation, should be punished for our high ideals and unique situation in the international arena. Iwi leaders therefore support a conservative approach to setting a short term carbon reduction target for 2020, that is based on two key principles:

- That our international commitments must allow enough flexibility for our unique domestic circumstances to be accommodated; and
- That New Zealand's international competitiveness must be maintained by aligning our commitments to carbon reduction with our peers in the international community;

Iwi are committed to supporting the government in the international arena, and I acknowledge the contributions of Roger Pikia to the negotiations to date. It is important to Iwi and Māori that we have a senior diplomatic representative in these negotiations. We have a unique contribution that comes from our indigenous knowledge and underdeveloped state of our economy, that we believe can assist the achievement of our national objectives in the international arena.

Equally Minister, we look forward to continued collaborative work on matters domestic, as our national policy response is progressed. Our interests in the shape of the national policy are well known, and we are committed to constructive engagement that delivers a sound and principled outcome for our nation. It is fundamental to this engagement, that we agree on sufficient resourcing to allow our efforts to meet our intentions, and we look forward to finally resolving this matter.

We trust in our agreement that a good process between your officials and ours, will lead to a revised scheme that is fair, equitable and most importantly, that binds us together as a nation to strive toward an aspirational target to progressively reduce carbon emissions and become carbon positive.

In conclusion, Iwi Leaders support a conservatively courageous approach to setting a 2020 carbon reduction target. Our comfort with any international target is inextricably connected to the domestic policy that will seek to implement the international target. The principles Iwi Leaders consider to be guiding imperatives are:

- Equitable distribution of benefits, risks and liabilities; and
- Fulsome engagement, as Treaty partners, in the development of domestic policy responses.

On the understanding that these principles are fully reflected, we would be prepared to support, as a Treaty partner, the 2020 target range as discussed with Hon Dr Smith.