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Report of the technical review of the second biennial report of New Zealand

According to decision 2/CP.17, developed country Parties are requested to submit their second biennial reports by 1 January 2016, that is, two years after the due date for submission of a full national communication. This report presents the results of the technical review of the second biennial report of New Zealand, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention".

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I. Introduction and summary

A. Introduction

1. This report covers the centralized technical review of the second biennial report (BR2)[1] of New Zealand. The review was organized by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention" (annex to decision 13/CP.20). In accordance with the same decision, a draft version of this report was communicated to the Government of New Zealand, which provided comments that were considered and incorporated as appropriate, into this final version of the report.

2. The review took place from 7 to 12 March 2016 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Amr Osma Abdel-Aziz (Egypt), Mr. John Davies (United States of America), Ms. Claudia Do Valle Costa (Brazil), Mr. Takeshi Enoki (Japan), Mr. Sandro Federici (San Marino), Mr. Michael Gytarsky (Russian Federation), Ms. Medea Inashvili (Georgia), Ms. Baasansuren Jamsranjav (Mongolia), Ms. Yue Li (China) and Mr. Ioannis Sempos (Greece). Mr. Federici and Mr. Gytarsky were the lead reviewers. The review was coordinated by Ms. Xuehong Wang, Ms. Kyoko Miwa and Mr. Pedro Torres (UNFCCC secretariat).

B. Summary

3. The expert review team (ERT) conducted a technical review of the information reported in the BR2 of New Zealand in accordance with the "UNFCCC biennial reporting guidelines for developed country Parties" (hereinafter referred to as the UNFCCC reporting guidelines on BRs). During the review, New Zealand provided the additional information listed in the annex to this report, as well as responses to the questions raised by the ERT related to: mitigation actions; progress towards its target; and methodologies and systems used to measure and track climate finance.

1. Timeliness

4. The BR2 was submitted on 17 December 2015, before the deadline of 1 January 2016 mandated by decision 2/CP.17. The common tabular format (CTF) tables were also submitted on 17 December 2015.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

5. Issues and gaps related to the reported information identified by the ERT are presented in table 1 below. The information reported by New Zealand in its BR2 is mostly in adherence with the UNFCCC reporting guidelines on BRs as per decision 2/CP.17.

[1] The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables are subject to the technical review.

Table 1
Summary of completeness and transparency issues related to mandatory reported information in the second biennial report of New Zealand

Chapter of the biennial report	*Completeness*	*Transparency*	*Paragraphs with recommendations*
Greenhouse gas emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Mostly complete	Mostly transparent	26, 38
Provision of support to developing country Parties	Mostly complete	Mostly transparent	82, 84

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III.

II. Technical review of the reported information

A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

6. New Zealand has provided a summary of information on greenhouse gas (GHG) emission trends for the period 1990–2013 in its BR2 and CTF tables 1(a)–(d). The BR2 makes reference to the national inventory arrangements, which are explained in more detail in the national inventory report included in New Zealand's 2015 annual inventory submission (in chapters 1 and 13). The national inventory arrangements were established in accordance with the reporting requirements related to national inventory arrangements contained in the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories" (hereinafter referred to as the UNFCCC Annex I inventory reporting guidelines) that are required by paragraph 3 of the UNFCCC reporting guidelines on BRs.

7. New Zealand reported that there have been no changes in the legal and institutional arrangements for the national inventory system since its first biennial report (BR1). The Party reported on the operational improvements to its inventory: significant mandatory changes as part of adopting the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the 2006 IPCC Guidelines), first applied to the 2015 GHG inventory; updated quality control procedures; and a review of the terms of reference for the Reporting Governance Group, which is responsible for approving all changes, improvements and major recalculations in the inventory.

8. The information reported in the BR2 on emission trends is consistent with that reported in the 2015 annual inventory submission of New Zealand. The 2015 annual submission has been used as the basis for discussion in chapter II.A of this review report.

9. The ERT noted that very limited textual summary information on the historic trends was included in the BR2. During the review, New Zealand provided additional information,

elaborating on the trends (see para. 11 below). The ERT is of the view that including this additional information would further enhance the transparency of the Party's next biennial report (BR).

10. Total GHG emissions[2] excluding emissions and removals from land use, land-use change and forestry (LULUCF) increased by 21.3 per cent between 1990 and 2013, whereas total GHG emissions including net emissions and removals from LULUCF increased by 42.4 per cent over the same period. The increase in the total GHG emissions can be attributed mainly to carbon dioxide (CO_2) emissions, which increased by 36.3 per cent (excluding LULUCF) between 1990 and 2013. Over the same period, emissions of methane (CH_4) increased by 7.0 per cent, while emissions of nitrous oxide (N_2O) increased by 24.1 per cent. The combined fluorinated gases, encompassing perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF_6), increased by 126.8 per cent over the same period.

11. New Zealand has a unique emission profile compared with other developed country Parties included in Annex I to the Convention, with agriculture contributing 48.4 per cent of total emissions in 2013 as a result of the large share of agricultural exports in the economy. The emission trends were driven mainly by: the growth in CO_2 emissions from increased road transport activities; the growth in CH_4 emissions largely attributed to the increase in the size of the national dairy cattle herd; the growth in N_2O emissions from dairy cattle excreta, as well as from an almost sixfold increase in nitrogen fertilizer application over the period 1990–2013; and the increased use of HFCs as a substitute for chlorofluorocarbons phased out under the Montreal Protocol.

12. The ERT noted that, during the period 1990–2013, New Zealand's gross domestic product (GDP) per capita increased by 38.9 per cent, while GHG emissions per GDP and GHG emissions per capita decreased by 34.5 and 9.0 per cent, respectively. The decrease in these indicators despite the trend of increasing GHG emissions during the same period can be attributed to the fact that the economy of New Zealand is largely based on the provision of services, as well as the increasing efficiency of the agriculture sector in producing dairy and meat products. Table 2 below illustrates the emission trends by sector and some of the economic indicators relevant to GHG emissions for New Zealand.

Table 2
Greenhouse gas emissions by sector and some indicators relevant to greenhouse gas emissions for New Zealand for the period 1990–2013

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share by sector (%)*	
Sector	*1990*	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
1. Energy	23 994.57	30 334.03	32 189.50	32 694.92	31 658.91	31.9	–3.2	36.0	39.1
A1. Energy industries	5 992.58	6 503.01	6 809.99	7 714.28	6 289.50	5.0	–18.5	9.0	7.8
A2. Manufacturing industries and construction	4 758.48	6 358.21	5 343.39	5 355.81	5 955.22	25.1	11.2	7.1	7.4
A3. Transport	8 774.88	12 356.45	14 095.02	13 856.22	14 074.87	60.4	1.6	13.2	17.4
A4.–A5. Other	2 902.16	3 120.59	2 950.77	3 353.60	3 184.88	9.7	–5.0	4.3	3.9
B. Fugitive emissions	1 566.47	1 995.78	2 990.33	2 415.00	2 154.44	37.5	–10.8	2.3	2.7

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry, unless otherwise specified. Values in this paragraph are calculated based on the 2015 inventory submission, version 1.0.

Sector	GHG emissions (kt CO_2 eq)					Change (%)		Share by sector (%)	
	1990	*2000*	*2010*	*2012*	*2013*	*1990–2013*	*2012–2013*	*1990*	*2013*
from fuels									
C. CO_2 transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	3 276.03	3 286.50	4 600.89	4 955.59	5 071.48	54.8	2.3	4.9	6.3
3. Agriculture	34 350.57	38 306.28	37 713.19	39 347.48	39 177.29	14.1	–0.4	51.5	48.4
4. LULUCF	–28 654.45	–30 345.53	–32 056.58	–27 848.76	–26 761.11	–6.6	–3.9	NA	NA
5. Waste	5 098.99	5 415.57	5 164.16	5 079.90	5 053.96	–0.9	–0.5	7.6	6.2
6. Other	0.00	0.00	0.00	0.00	0.00	NA	NA	0.0	0.0
Total GHG emissions without LULUCF	**66 720.16**	**77 342.38**	**79 667.73**	**82 077.89**	**80 961.64**	**21.3**	**–1.4**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**38 065.71**	**46 996.85**	**47 611.16**	**54 229.13**	**54 200.53**	**42.4**	**–0.1**	**NA**	**NA**
Indicators									
GDP per capita (thousands 2011 USD using PPP)	24.02	27.96	31.82	32.81	33.36	38.9	1.7	–	–
GHG emissions without LULUCF per capita (t CO_2 eq)	20.04	20.05	18.31	18.62	18.23	–9.0	–2.1	–	–
GHG emissions without LULUCF per GDP unit (kg CO_2 eq per 2011 USD using PPP)	0.83	0.72	0.58	0.57	0.55	–34.5	–3.7	–	–

Sources: (1) GHG emission data: New Zealand's 2015 annual inventory submission, version 1.0; (2) GDP per capita data: World Bank.

Note: The ratios per capita and per GDP unit as well as the changes in emissions and the shares by sector are calculated relative to total GHG emissions without LULUCF using the exact (not rounded) values, and may therefore differ from the ratio calculated with the rounded numbers provided in the table.

Abbreviations: GDP = gross domestic product, GHG = greenhouse gas, IPPU = industrial processes and product use, LULUCF = land use, land-use change and forestry, NA = not applicable, NO = not occurring, PPP = purchasing power parity.

B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target

13. In its BR2 and CTF tables 2(a)–(f), New Zealand reported a description of its target, including associated conditions and assumptions. CTF tables 2(a)–(f) contain the required information in relation to the description of the Party's emission reduction target. New Zealand has announced two quantified economy-wide emission reduction targets: an unconditional target (hereinafter referred to as the economy-wide emission reduction target) of 5 per cent below the 1990 level by 2020, and a conditional target of between 10 and 20 per cent below the 1990 level by 2020. Further information on the target and the assumptions, conditions and methodologies related to the target is provided in chapter II of the BR2.

14. For New Zealand, the Convention entered into force on 21 March 1994. Under the Convention, New Zealand made a commitment to reduce its GHG emissions by 5 per cent by 2020 below the 1990 level. This target includes all GHGs included in the UNFCCC

Annex I inventory reporting guidelines, namely CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and nitrogen trifluoride (NF_3). It also includes all Intergovernmental Panel on Climate Change (IPCC) sources and sectors included in the annual GHG inventory. The global warming potential (GWP) values used are those from the IPCC Fourth Assessment Report (AR4). In absolute terms, this means that under the Convention, New Zealand has to reduce emissions from 66,720.16 kt of carbon dioxide equivalent (CO_2 eq) (in the base year)[3] to 63,384.15 kt CO_2 eq by 2020**.** New Zealand considers that the economy-wide emission reduction target of a 5 per cent emission reduction by 2020 compared to the 1990 level is equivalent to a quantified emission limitation or reduction objective (QELRO) of 96.8 per cent on 1990 emissions over the period 2013–2020.[4]

15. Emissions and removals from the LULUCF sector are included in the target and are accounted for using the activity-based approach and the second commitment period accounting rules for activities under Article 3, paragraph 3 (afforestation and reforestation, and deforestation), and paragraph 4 (forest management), of the Kyoto Protocol. New Zealand also reported that it plans to measure progress towards its 2020 target as though it had made a commitment under the second commitment period of the Kyoto Protocol, including participation in the international carbon market and recognizing the surplus of units achieved during the first commitment period of the Kyoto Protocol.

16. The ERT noted that New Zealand included in CTF table 2(e) an explanation that the possible scale of the contribution of market-based mechanisms will not be known until the end of the accounting period for 2013–2020. The ERT further noted that chapter VI of the BR2 provides a link to the latest update of New Zealand's 2020 net position,[5] which is a regularly updated report that tracks progress towards New Zealand's economy-wide emission reduction target. According to this information, the possible scale of the contribution from carry-over units from the first commitment period of the Kyoto Protocol is estimated to be about 30 Mt CO_2 eq, and no need for a further contribution from market-based mechanisms under the Convention is foreseen. The ERT considers that the information on the possible scale of the contribution of market-based mechanisms should be reflected in CTF table 2(e) as it would enhance the transparency of the contribution of market-based mechanisms to the Party's target.

17. For the conditional target referred to in paragraph 13 above, the following conditions apply: the new global agreement sets the world on a pathway to limit temperature rise to no more than 2 °C, with developed countries making efforts comparable with those of New Zealand and developing countries that are advanced and major emitters taking action commensurate with their respective capabilities; there is an effective set of rules for the LULUCF sector; and there is full recourse to a broad and efficient international carbon market. During the review, New Zealand provided additional information, elaborating on whether these conditions have been met. New Zealand informed the ERT that, currently, a comprehensive set of rules for the LULUCF sector is in place, but the other conditions have yet to be fully satisfied. Further information on the targets and the assumptions, conditions and methodologies related to the targets is provided

[3] New Zealand chose 1990 as the base year for its 2020 target. The emission level in the base year is calculated based on the 2015 annual inventory submission.

[4] During the review, New Zealand clarified that it follows the methodology included in the UNFCCC technical paper titled "Issues relating to the transformation of pledges for emission reductions into quantified emission limitation and reduction objectives: methodology and examples" (FCCC/TP/2010/3/Rev.1) in order to transform its unconditional quantified economy-wide emission reduction target to a QELRO.

[5] Available at <http://www.mfe.govt.nz/climate-change/reporting-greenhouse-gas-emissions/latest-2020-net-position>.

in chapter II of the BR2, and in the report of the technical review of the Party's first biennial report (TRR/BR1).

18. The ERT noted that in its BR2, New Zealand reports on its intended nationally determined contribution (INDC), which is to reduce emissions by 30 per cent below the 2005 level by 2030. The Party indicated that its INDC will remain provisional, pending confirmation of the approaches to be taken in accounting for the land-use sector and pending access to carbon markets. In addition, the ERT noted the 2050 target reported by New Zealand in its BR2, which is a 50 per cent reduction in GHG emissions below the 1990 level by 2050.

C. Progress made towards the achievement of the quantified economy-wide emission reduction target

19. This chapter provides information on the review of the reporting by New Zealand on the progress made in reducing emissions in relation to the target, mitigation actions taken to achieve its target, and the use of units from market-based mechanisms and LULUCF.

1. Mitigation actions and their effects

20. In its BR2 and CTF table 3, New Zealand reported on its progress in the achievement of its target and the mitigation actions implemented and planned since its sixth national communication (NC6) and BR1 to achieve its target. New Zealand has provided information on mitigation actions introduced to achieve its target. The BR2 includes information on mitigation actions organized by sector and by gas. Further information on the mitigation actions related to the Party's target is provided in this report (see paras. 21–22 below).

21. In its BR2, New Zealand reported that no changes have been made since the publication of the Party's NC6 and BR1 in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target. The description of the institutional, administrative and procedural arrangements is provided in chapters III and VI of the BR2. During the review, New Zealand provided additional information on its domestic institutional, legal, administrative and procedural arrangements, which have been described in the NC6 and in the 2015 annual inventory submission. The ERT noted that the legal frameworks for meeting the quantified economy-wide emission reduction target of New Zealand are underpinned by the Climate Change Response Act of 2002.

22. The ERT noted that in its BR2 and CTF table 3, New Zealand has improved its reporting on the quantitative estimates of mitigation actions since the BR1 following the recommendation from the previous review report. However, the ERT noted that the quantitative estimates have not yet been reported for the majority of the mitigation actions. The ERT also noted that in its BR2, New Zealand indicates that not all effects of the mitigation actions can be accurately assessed or modelled due to their cross-sectoral nature and the focus of some mitigation actions on research, information, education and voluntary activities. The ERT further noted that the quantitative estimates for the New Zealand Emission Trading Scheme (NZ ETS) are provided at the aggregate level and thus may overlap with the estimates of other mitigation actions included in CTF table 3.

23. In response to questions raised by the ERT during the review, New Zealand explained that the quantitative estimates of the mitigation impacts of individual policies and measures (PaMs) provided in CTF table 3 were calculated independently. Thus, the potential double counting and the overlaps between the impacts of mitigation actions have

been avoided as far as is practically possible. The Party further informed the ERT of the impacts of mitigation actions that have been estimated since the submission of the BR2. In particular, the Ministry of Transport estimated the mitigation effect of 19 kt CO_2 eq owing to the operation of light electric vehicles in New Zealand by 2020. Furthermore, the projected energy savings and GHG mitigation effect for the Sustainable Government Procurement Programme will be estimated as soon as the programme has been fully defined. The ERT acknowledged the improvements made by New Zealand in providing quantitative estimates of individual mitigation actions and the efforts made to avoid overlaps in the estimates of the effects of PaMs. The ERT found the additional information provided by the Party sufficient and transparent.

24. The BR2 and CTF table 3 do not include the information required by the UNFCCC reporting guidelines on BRs on planned mitigation actions to achieve the economy-wide emission reduction target.

25. During the review, in response to questions raised by the ERT, New Zealand provided additional information on the mitigation actions that are under development and provided explanatory and reference materials on its plans to strengthen its response to climate change with regard to meeting its 2020 economy-wide emission reduction target. The mitigation actions include the operational improvements to the NZ ETS and the enhancement of the Global Research Alliance on Agricultural Greenhouse Gases through additional funding. In the latest update of New Zealand's 2020 net position, the mitigation actions aimed at meeting the Party's economy-wide emission reduction target are elaborated on, including the calculation of the projected gross emissions for the period 2013–2020 and the identification of options for their compensation (see paras. 13–15 above).

26. The ERT reiterates the recommendation from the previous review report that New Zealand enhance the completeness of its next BR through the provision of information on the planned mitigation actions aimed at achieving its economy-wide emission reduction target.

27. New Zealand provided limited information on the assessment of the economic and social consequences of its response measures, focusing mainly on the legal and institutional arrangements established for the assessment of the response measures and their consequences. New Zealand indicated that detailed information on the assessment of the economic and social consequences of response measures had been reported in its 2015 annual inventory submission. The ERT encourages New Zealand to further enhance, to the extent possible, the provision of information on the assessment of the economic and social consequences of response measures, at least through providing cross references in its BR to its national communications (NCs) and annual inventory submissions.

28. New Zealand reported, to the extent possible, on the domestic arrangements established for the process of self-assessment of compliance with emission reductions required by science through the establishment of legal frameworks for, and the implementation of, the systematic review and audit of the ongoing mitigation actions.

29. The BR2 indicates that a review of the performance efficiency of the NZ ETS, the main policy instrument of New Zealand, affecting all sectors of the economy, was conducted at the end of 2015, and a series of security tests were undertaken for the New Zealand Emission Unit Register at the same time. However, the ERT noted the BR2 is unclear with regard to how the NZ ETS facilitates emission reductions and promotes compliance with the economy-wide emission reduction target. The ERT is of the view that the inclusion of a description of how the NZ ETS provides incentives for emission reductions would enhance the transparency of the Party's BRs.

30. The BR2 does not include information on the progress made in the establishment of the national rules for taking action against non-compliance with emission reduction targets (as suggested in section VII of the UNFCCC reporting guidelines on BRs).

31. During the review, New Zealand provided additional information on the functionality of the NZ ETS and on the national rules for taking action against non-compliance with emission reduction targets and further actions towards its economy-wide emission reduction target. The Party also described the science-based self-assessment of compliance with emission reduction. The ERT encourages New Zealand to include information on the domestic arrangements established for self-assessment of compliance with emission reduction commitments and to report on the established national rules and local actions against domestic non-compliance with emission reduction targets in the next BR.

32. The key overarching cross-sectoral policy reported in the BR2 is the NZ ETS. The NZ ETS sets the framework and direction for future climate policy and is aimed at putting New Zealand on the path towards reaching its emission reduction target for 2020. It creates an obligation on emitters that are participants in the scheme to report on their emissions and surrender emission units that correspond to their obligations. The NZ ETS covers key economic sectors including forestry, industrial processes, stationary energy, liquid fossil fuels, waste and, since 2012, the agriculture sector. The aggregated mitigation effect of the NZ ETS, estimated to be 2,352 kt CO_2 eq by 2020, is the most significant of the mitigation actions undertaken by the Party. The The ERT noted that the actual magnitude of the mitigation effect from the NZ ETS could be smaller because of the potential overlaps in the mitigation effects estimated for the NZ ETS. The ERT also noted the efforts made to consider these overlaps in assessing the mitigation effects (see paras. 22 and 23 above).

33. Besides the NZ ETS, other key mitigation actions introduced since the last BR submission involve investing in the improvement of energy and fuel efficiency through the Fuel Efficient Tyres Programme, the Wood Energy South Programme, an expanded Heavy Vehicle Fleet Programme, and the Energy Efficient Meat and Dairy Plant Programme. New Zealand has also made considerable investment in public transport. In addition, new funding has been put in place over the next five years to encourage and support the planting of new forests, through the Afforestation Grant Scheme.

34. The ERT further noted that New Zealand puts great emphasis on mitigation actions in the agriculture sector, which accounts for almost half of its total GHG emissions. The Party has established the Sustainable Land Management and Climate Change Plan of Action and has made significant investments in the enhancement of worldwide agricultural GHG emission mitigation.

35. Table 3 below provides a concise summary of the key mitigation actions and estimates of their mitigation effects reported by New Zealand to achieve its target.

Table 3
Summary of information on mitigation actions and their impacts reported by New Zealand

Sector affected	*List of key mitigation actions*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	New Zealand Emissions Trading Scheme	2 352
Energy, including:		
Transport	Heavy vehicle fuel efficiency programmes	30

Sector affected	*List of key mitigation actions*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*
Renewable energy	Business Programmes Package (for efficient management of energy-intensive business)	115
Energy efficiency	Efficient Products Programme	231
	Energywise Homes	28
Agriculture	Global Research Alliance on Agricultural Greenhouse Gases	NE
	Sustainable Land Management and Climate Change Plan of Action	NE
LULUCF	Afforestation project package (Permanent Forest Sinks Initiative, East Coast Forestry Project and Afforestation Grant Scheme)	1 816
Waste	National Environmental Standard for Landfill Methane	711
	Waste Minimization Act	NE

Note: The estimates of mitigation impact are estimates of emissions of carbon dioxide or carbon dioxide equivalent avoided in a given year as a result of the implementation of mitigation actions.

Abbreviations: LULUCF = land use, land-use change and forestry, NE = not estimated.

36. The ERT noted that New Zealand aims to meet its economy-wide emission reduction target mainly through the operational improvement of the NZ ETS with a view to creating additional incentives for investments in emission reduction technologies and practices in combination with the afforestation and reforestation activities under the Permanent Forest Sinks Initiative and the Afforestation Grant Scheme. The ERT further noted that the majority of the estimated mitigation impact of the NZ ETS is from the LULUCF sector. The PaMs on energy efficiency, landfill methane management and agriculture are expected to supplement the NZ ETS in GHG emission reductions.

2. Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry

37. New Zealand reported in its BR2 and CTF tables 4, 4(a)I, 4(a)II and 4(b) its use of units from market-based mechanisms under the Convention and the contribution of LULUCF to achieving its target. This information was provided for the base year and each reported year for the period 2010–2013. Further relevant information on emissions and removals and the use of units is provided in chapter III of the BR2.

38. The ERT noted that the contribution from LULUCF for the years 2010–2013 reported in CTF table 4 corresponds to the emissions/removals from the LULUCF sector estimated under the Convention reporting rules, rather than those estimated using the rules defined for achieving the 2020 target. The ERT further noted that the correct value of the contribution from LULUCF activities for 2013 is reported in table 3.3 of the BR2. During the review, the Party explained that the values reported in CTF table 4 regarding the contribution from LULUCF were not reported correctly as a result of technical problems with the CRF Reporter software. To enhance transparency and facilitate the assessment of the progress made by the Party in achieving its target, the ERT recommends that New Zealand report on, following the selected accounting rules under the Kyoto Protocol, the

contribution from LULUCF to achieving its target under the Convention (see para. 15 above) in the next BR.

39. For 2013, New Zealand reported in CTF table 4 annual total GHG emissions excluding LULUCF of 80,961.64 kt CO_2 eq, or 21.3 per cent above the 1990 level and 25.4 per cent above the target average annual emissions for the period 2013–2020 (96.8 per cent on 1990 emissions).[6]

40. On its use of units from LULUCF activities, New Zealand reported in table 3.3 of the BR2 that in 2013 it used units equivalent to 12,165.20 kt CO_2 eq to offset 15.0 per cent of its total GHG emissions. New Zealand reported the use of units from market-based mechanisms as "NA" (not applicable) in CTF tables 4 and 4(b), as the Party did not surrender (or retire) any international units in 2013 and 2014 to fulfil its 2020 target. Table 4 below illustrates New Zealand's total GHG emissions, the contribution of LULUCF and the use of units from market-based mechanisms to achieve its target.

Table 4
Summary of information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made by New Zealand towards the achievement of its target

Year	*Emissions excluding LULUCF (kt CO_2 eq)*	*Contribution from LULUCF (kt CO_2 eq)*	*Emissions including contribution from LULUCF (kt CO_2 eq)*	*Use of units from market-based mechanisms (kt CO_2 eq)*
1990	66 720.16	NA	NA	NA
2010	79 667.73	NA	NA	NA
2011	80 079.87	NA	NA	NA
2012	82 077.89	NA	NA	NA
2013	80 961.64	–12 165.20	68 796.44	0

Sources: New Zealand's second biennial report and common tabular format tables 1, 4, 4(a)I, 4(a)II and 4(b).
Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.

41. To assess the progress towards the achievement of the 2020 target, the ERT noted that New Zealand's emission reduction target under the Convention is 5 per cent below the 1990 level (see para. 13 above). As discussed in chapter II.B above, in 2013 New Zealand's annual total GHG emissions excluding LULUCF are 21.3 per cent (14,241.48 kt CO_2 eq) above the base year level. In addition, the ERT noted that in 2013 the contribution from LULUCF was 12,165.20 kt CO_2 eq. The total GHG emissions including LULUCF in 2013 are 3.1 per cent (2,076.28 kt CO_2 eq) above the base year level.

42. The ERT noted that New Zealand's achievement of its 2020 target is strongly linked to the anticipated contribution of LULUCF and to the contribution from market-based mechanisms. As reported in the latest update of New Zealand's 2020 net position (see para. 16 above), the Party expects to meet its 2020 target by using removals from LULUCF activities and surplus units from the first commitment period of the Kyoto Protocol.

[6] New Zealand will track progress towards its Convention target (a 5 per cent reduction below the 1990 level by 2020) not only for 2020, but also for the period 2013–2020 (as though it had made a commitment under the second commitment period of the Kyoto Protocol), which is 96.8 per cent on 1990 emissions over the period 2013–2020 (see paras. 14 and 15 above).

3. Projections

43. New Zealand reported in its BR2 and CTF table 6(a) updated projections for 2020 and 2030 relative to actual inventory data for 1990, 1995, 2000, 2005, 2010 and 2013 under the 'with measures' (WEM) scenario. Projections are presented on a sectoral basis, using the same sectoral categories as used in the chapter on mitigation actions, and on a gas-by-gas basis for the following GHGs: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs and HFCs collectively in each case). Projections are also provided in an aggregated format for each sector as well as for a Party total, using GWP values from the AR4. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals. New Zealand reported on factors and activities influencing emissions for each sector. Further information on the projections is provided in chapter IV of the BR2.

44. In addition to the WEM scenario, New Zealand reported in its BR2 and CTF table 6(b) the 'without measures' (WOM) scenario. The projections are presented by sector and by gas in the same way as for the WEM scenario for the years 2020 and 2030. New Zealand provided information on the changes since the submission of its NC6/BR1 in the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the preparation of the projection scenarios using CTF table 5. To explain the changes, New Zealand has provided supporting documentation. The Party also provided information on the sensitivity analysis. Further information is provided in paragraph 55 below.

Overview of projection scenarios

45. The WEM scenario reported by New Zealand includes all PaMs that have been implemented up to 2015. The definition indicates that the scenario has been prepared according to the "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications".

46. New Zealand also reported on a WOM scenario, which excludes all PaMs implemented, adopted or planned that were included in the WEM scenario. However, the ERT noted that New Zealand did not provide the starting year for the WOM scenario. During the review, New Zealand provided additional information, elaborating on the starting years for each sector under the WOM scenario, which are 2007 for the energy sector, 2009 for the transport sector, 2005 for the waste sector and 1991 for the LULUCF sector. The emission projections for the industrial processes and product use (IPPU) and agriculture sectors are identical under both the WEM and WOM scenarios, and thus there is no need to define a starting year for those sectors. The ERT encourages New Zealand to report the starting years for the WOM scenario in its next BR.

47. The ERT noted that New Zealand does not report in the BR2 projections for the indirect GHGs (carbon monoxide (CO), nitrogen oxide (NO_x), non-methane volatile organic compounds (NMVOCs) and sulphur oxide (SO_x)). During the review, the Party explained that its projection models are restricted to the direct GHGs, given the uncertainties in projecting emissions of indirect GHGs. The ERT encourages New Zealand to report projections of indirect GHGs in its next BR.

Methodology and changes since the previous submission

48. The methodology used in the BR2 is identical to that used for the preparation of the emission projections for the NC6/BR1. New Zealand reported supporting information further explaining the methodologies and the changes made since the NC6/BR1. The main changes are: improvements in the methodology used for inventory reporting through the

application of the 2006 IPCC Guidelines and updated activity data, an update of historic trends by including 2012 and 2013 emissions from the 2015 annual inventory submission, and the use of GWP values from the AR4.

49. The key underlying assumptions and variables of the projections for the energy and transport sectors are the GDP growth rate, the NZ ETS carbon price, fuel prices, the currency exchange rate, gas supply from new discoveries, and population growth. Moreover, it is assumed that the remaining coal-fired power plants in the country will be decommissioned by 2018. Given that a large share of electricity is generated by hydropower, the modelling approach applied by New Zealand accounts for various levels of hydro intakes, with a one in five chance of a dry year for each modelled year. Energy demand for, and emissions from, the energy and transport sectors are considered inelastic to fuel and carbon prices because of the current lack of viable substitutions, as indicated in the sensitivity analysis reported in the NC6.

50. The ERT noted that a domestic target to increase renewable electricity to 90 per cent of total generation by 2025 is reported in the BR2. However, the Electricity Demand and Generation Scenario,[7] on which the WEM scenario is based, foresees a rate of 80–83 per cent electricity from renewables by the same timeline. During the review, New Zealand provided additional information, elaborating on this target. The Party explained that the 90 per cent target is not prescriptive or legally binding, but rather represents a national aspiration. For that reason, the scenario modelling does not assume any specific renewables target. The ERT encourages New Zealand to include information on the approach taken towards the renewable electricity target in its next BR in order to enhance the transparency of its reporting on the assumptions used for the projection scenarios.

51. In the BR2, the projections for the agriculture sector were based on livestock numbers, which were projected to be lower than those reported in the BR1, as a result of revised assumptions on land-use change, agriculture and harvested wood product returns. These assumptions were based on the actual changes in land use and product returns relative to previous projections.

52. The projections for the LULUCF sector in the BR2 assume a national unit carbon price of between 12.50 New Zealand dollars (NZD) and NZD 25 per unit between 2015 and 2030, whereas the projections for the non-forestry sectors were based on a carbon price increase from NZD 7.40 per unit in 2015 to NZD 25 per unit in 2030. During the review, New Zealand informed the ERT that different assumptions for carbon prices were used in the two different models used for the projections. The LULUCF sector model requires a carbon price range, while the non-forestry sector model requires a distinct price for each year. However, the price paths for the two models were aligned as closely as possible by the Party.

53. The changes in methodologies and assumptions made since the NC6/BR1 have had a significant impact on the projections of emissions and removals from the LULUCF sector. The projected net removals from LULUCF in the BR2 increased by 1,005 per cent for 2020 and by 540 per cent for 2030 compared with the corresponding projections reported in the NC6/BR1. The differences between the estimates are explained mainly by the inclusion of the harvested wood products pool; the determination that natural forests are considered to be a carbon sink (in the NC6/BR1, natural forests were considered to be in a steady state); and other improvements to afforestation, deforestation and harvesting area data and forest carbon stock yield tables.

[7] Full details of the draft Electricity Demand and Generation Scenario 2015 projections are available at <http://www.mbie.govt.nz/info-services/sectors-industries/energy/energy-data-modelling/modelling/electricity-demand-and-generation-scenarios/>.

54. The changes in methodologies and assumptions made since the NC6/BR1 have also had a significant impact on the projections of emissions from the waste sector. In the BR2, the projected emissions increased by 102 per cent for 2020 and by 95 per cent for 2030 compared with the corresponding projections reported in the NC6/BR1. The differences between these estimates mainly result from the inclusion of CH_4 emissions from non-municipal landfills and the inclusion of on-site farm fills in the 2015 annual inventory submission, both for the first time.

55. Sensitivity analyses were conducted for the projections in the energy sector. The analyses included high and low GDP growth that resulted in a 3 per cent increase and a 6 per cent decrease, respectively, in emissions in 2030 compared with the base year level. Moreover, the hypothetical effect that the closure of New Zealand's single largest user of electricity, New Zealand Aluminium Smelters (NZAS), would have on emissions was considered, with the assumption that NZAS closed at the end of 2016. Taking this assumption into consideration, the national energy emissions decreased by 13 per cent compared with the base year level.

56. In the BR2, New Zealand reported that uncertainties – largely driven by international markets – in the economic circumstances of the agriculture industry and the country's susceptibility to climate variability may have a significant impact on the projections for the agriculture sector. Moreover, the projections for the LULUCF sector are particularly sensitive to the underlying assumptions used, such as future rates of afforestation, deforestation and harvesting, rotation ages and carbon price. To capture this sensitivity and address uncertainties in key assumptions, the ERT encourages New Zealand to prepare and report in its next BR a sensitivity analysis of the projections for the agriculture and LULUCF sectors.

Results of projections

57. New Zealand's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 82,936.98 and 86,027.68 kt CO_2 eq, respectively, under the WEM scenario, which is an increase of 24.3 and 28.9 per cent, respectively, above the 1990 level. The GHG emissions of all sectors except the waste sector are projected to increase in 2020 compared with the 1990 level.

58. According to the projections presented by sector, the most significant GHG emission increase under the WEM scenario from 1990 to 2020 will occur in the energy sector (7,834.34 kt CO_2 eq, or 32.7 per cent), followed by the agriculture sector (6,067.52 kt CO_2 eq, or 17.7 per cent) and the IPPU sector (2,467.81 kt CO_2 eq, or 75.3 per cent). GHG emissions from the transport subsector (a subsector of the energy sector) are projected to increase by 5,047.35 kt CO_2 eq (57.5 per cent) above the 1990 level by 2020. Conversely, GHG emissions from the waste sector are projected to decrease below the 1990 level (152.85 kt CO_2 eq, or 3.0 per cent) by 2020, due to the increase in the capture of landfill gas (CH_4).

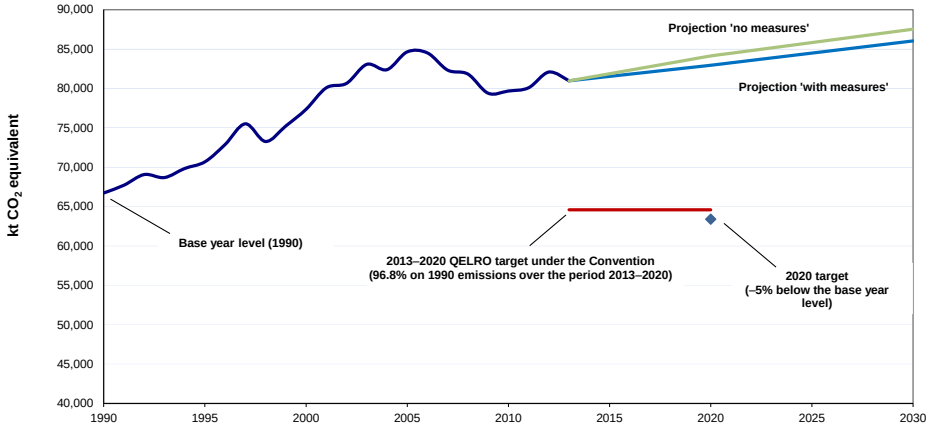
59. According to the projections presented by gas, the increase in CO_2 emissions is expected to contribute the most to the Party's overall emission growth. Under the WEM scenario, the increase in CO_2 emissions will make up approximately 56.2 per cent of the aggregate GHG emission growth above the 1990 level (9,107.62 kt CO_2 eq) by 2020, followed by CH_4 with 22.4 per cent (3,637.40 kt CO_2 eq) and N_2O with 12.0 per cent (1,944.44 kt CO_2 eq). The emission trends by sector and by gas are driven mainly by: the growth in CO_2 emissions due to the increased demand for electricity and increased road transport activities (energy and transport sectors); the growth in CH_4 and N_2O emissions largely attributed to the increase in the dairy cattle population (agriculture sector); the growth in N_2O emissions due to increased nitrogen fertilizer use (agriculture sector); and

the increased use of HFCs as a substitute for chlorofluorocarbons phased out under the Montreal Protocol (IPPU sector).

60. The projected emission levels under the different scenarios and New Zealand's quantified economy-wide emission reduction target are presented in the figure below.

61. According to New Zealand's 2020 net position report (see para. 16 above), the Party expects to meet its economy-wide emission reduction target with the contribution of activities under Article 3, paragraph 3, of the Kyoto Protocol, and using about 25 per cent of the carry-over units from the first commitment period of the Kyoto Protocol (30.2 Mt).[8] New Zealand has assumed that activities under Article 3, paragraph 4, of the Kyoto Protocol will not contribute towards its target.[9] The ERT considers that the provision in the next BR of separate projections for the activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol (afforestation and reforestation, deforestation and forest management) would enhance transparency and facilitate the assessment of the progress made by New Zealand in achieving its target.

Greenhouse gas emission projections by New Zealand



Sources: (1) Data for the years 1990–2013: New Zealand's 2015 annual inventory submission, version 1.0; total GHG emissions excluding land use, land-use change and forestry; (2) Data for the years 2020 and 2030: New Zealand's second biennial report; total GHG emissions excluding land use, land-use change and forestry.

Note: According to the information reported in the Party's second biennial report, New Zealand is expected to meet its 2013–2020 QELRO target under the Convention, with the use of removals from LULUCF activities and surplus units from the first commitment period of the Kyoto Protocol,

Abbreviation: QELRO = quantified emission limitation or reduction objective.

[8] The total amount of carry-over units from the first commitment period of the Kyoto Protocol is 123,749,012 tonnes.

[9] The emissions/removals from forest management are not anticipated to be different from the forest management reference level (FMRL). New Zealand will reassess this assumption after the review of the technical corrections to the FMRL, which will be submitted as part of the Party's 2016 annual inventory submission.

62. The ERT noted that achievement of the economy-wide emission reduction target is strongly dependent on the contribution of the forestry sector. However, the projections of emissions from the forestry sector are highly uncertain because they depend on factors with great variability, such as carbon price, land-use options, international log prices and behaviour of forest owners.

63. In its BR2, New Zealand did not provide a projections scenario indicating the pathway to achieve its conditional 2020 target under the Convention of an emission reduction of between 10 and 20 per cent below the 1990 level by 2020. The ERT reiterates the encouragement made in the TRR/BR1 that the Party report, in its next BR, a 'with additional measures' scenario, which will indicate the trajectory of emissions, along with information about key factors and activities for meeting these targets.

Assessment of aggregate effects of policies and measures

64. The ERT acknowledged the information submitted by New Zealand on the estimated and expected effects of PaMs in terms of emissions avoided or sequestrated for 2020 and 2030. This information was prepared in accordance with the WEM scenario compared with the WOM scenario. New Zealand reported that the total estimated effect of adopted and implemented PaMs in the non-forestry sectors is 1,183.10 kt CO_2 eq and 1,488.81 kt CO_2 eq for 2020 and 2030, respectively. The total estimated effect of adopted and implemented PaMs in the forestry sector is estimated to be 4,145.28 kt CO_2 eq and 3,612.35 kt CO_2 eq for 2020 and 2030, respectively. According to the information reported in the BR2, the PaMs implemented in the forestry sector will deliver the largest emission reductions, followed by the PaMs implemented in the waste sector. The contribution of the PaMs in the energy and transport sectors to the total effect of PaMs is estimated to be minor, while the effect of the PaMs in the IPPU and agriculture sectors was not estimated. The ERT noted that as the projections of emissions from the forestry sector are highly uncertain, the uncertainty associated with the estimated effects of the PaMs in the forestry sector is also high.

D. Provision of financial, technological and capacity-building support to developing country Parties

65. In its BR2, New Zealand reported information on the provision of financial, technological and capacity-building support required under the Convention. The BR2 includes information on the national approach to tracking the provision of support, indicators, delivery mechanisms used and allocation channels tracked. New Zealand reported a description of the methodology used to report financial support, including underlying assumptions.

66. New Zealand provided details on what new and additional support it has provided and clarified how this support is new and additional (see para. 69 below for further information on new and additional financial resources).

67. The BR2 does not include the information required by the UNFCCC reporting guidelines on BRs on: a textual description of the measures and activities related to technology transfer implemented or planned since its BR1, and a description of the measures and activities related to technology transfer in CTF table 8. In addition, the information reported by New Zealand on the following elements is not transparent: measures taken to promote, facilitate and finance the transfer of, access to and deployment of climate-friendly technologies for the benefit of Parties not included in Annex I to the Convention (non-Annex I Parties), and for the support of the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. During

the review, in response to questions raised by the ERT, New Zealand provided additional information, elaborating on these issues (see paras. 82 and 84 below for further information and the recommendations made by the ERT).

68. New Zealand reported the financial support it provided to non-Annex I Parties, distinguishing between support for mitigation and adaptation activities and recognizing the capacity-building elements of such support.

69. New Zealand explained how it determines how much of its support is new and additional. New Zealand's approach to reporting new and additional resources has not changed since its BR1. In the absence of an internationally agreed definition of what can be counted as new and additional, New Zealand's practical approach has been to report all climate-related assistance for the reporting period 2013–2014 as new and additional.

70. New Zealand included in its BR2 information on the methodology that it adopted for tracking finance for adaptation and mitigation using the Rio Markers. In the BR2, New Zealand made reference to its submission to the Conference of the Parties,[10] which provides further information on the methodologies and systems used to measure and track climate finance.

1. Finance

71. In its BR2 and CTF tables 7, 7(a) and 7(b), New Zealand reported information on the provision of financial support required under the Convention, including on financial support provided, allocation channels and annual contributions (see paras. 76–79 below for further information on financial resources). The summary information was reported for 2013–2014. In its BR2, New Zealand included and reported all climate-related support that is defined as official development assistance (ODA). It specified all the funds as "provided" to indicate that the funds have been transferred to the recipients, including multilateral organizations. However, the ERT noted that units for the numbers reported in CTF tables 7, 7(a) and 7(b) are not specified. During the review, New Zealand clarified that the numbers are all expressed in millions of United States dollars or New Zealand dollars. The ERT considers that specifying units for the numbers reported in the BR and CTF tables would improve the transparency of the reported information.

72. The ERT noted that the BR2 includes additional information, such as the growth in overall climate-related assistance over the reporting period 2013–2014, which was not included in the BR1. According to New Zealand, its bilateral climate-related assistance and core funding for regional and multilateral agencies increased by NZD 32.08 million and NZD 7.55 million, respectively, compared with the previous reporting period (2011–2012). New Zealand also reported that its ODA includes a dedicated climate change fund, for which the funding for the period from 2015/2016 to 2017/2018 is NZD 9.5 million.

73. New Zealand described how the resources it provides address the adaptation and mitigation needs of non-Annex I Parties. It also described how those resources assist non-Annex I Parties to mitigate and adapt to the adverse effects of climate change and contribute to technology development and transfer and capacity-building related to mitigation and adaptation (see chapters II.D.2 and II.D.3 below).

74. New Zealand provided information on the types of instrument used in the provision of its assistance (see para. 79 below). The Party reported that in the short term its climate-related finance and investment to developing countries will continue to be provided

[10] Available at <http://www4.unfccc.int/submissions/Lists/OSPSubmissionUpload/55_19_130465243189001418-NZ%20submission%20on%20tracking%20scaled%20up%20finance%20May%202014.pdf>.

primarily as public finance. New Zealand also reported that it recognizes the importance of private finance and has initiated a process to consider how to help mitigate risks to climate-related investments in developing countries.

75. The ERT noted that the information reported by New Zealand is mostly transparent in relation to how it defines funds as being climate-specific (see CTF table 7(b)). The BR2 provides a reference to New Zealand's submission to the Conference of Parties (see para. 70 above), in which the Party reports that expenditure on climate change activities is recorded through an internal system based on whether climate change is a "principle" or a "significant" outcome of the activity, or not an outcome at all. The ERT encourages New Zealand to include more detailed information to explain how it defines the funds as being climate-specific in the textual part of its next BR, in order to further improve transparency.

76. New Zealand reported on its climate-specific public financial support provided in 2013 and 2014, totalling USD 34.98 million in 2013 and USD 59.45 million in 2014. This represents an increase in its contributions by 30 per cent since its NC6/BR1 compared with the reporting period 2011–2012. Climate-specific public financial support is provided through bilateral and regional channels and accounted for 51.6 and 65.5 per cent of the total contributions provided by New Zealand in 2013 and 2014, respectively. The Party's public financial support totalled USD 67.76 million and 90.7 million in 2013 and 2014, respectively. During the reporting period, New Zealand placed a particular focus on Pacific Island countries.

77. The BR2 includes detailed information on the financial support provided through multilateral channels, and bilateral and regional channels in 2013 and 2014. More specifically, New Zealand contributed through multilateral channels, as reported in its BR2 and in CTF table 7(a), USD 32.78 million and 31.25 million for 2013 and 2014, respectively. These contributions were made to specialized multilateral climate change funds, such as the Global Environment Facility, and multilateral financial institutions, such as the World Bank and the Asian Development Bank. Table 5 includes some of the information reported by New Zealand on its provision of financial support.

Table 5
Summary of information on provision of financial support in 2013–2014 by New Zealand
(Millions of United States dollars)

	Years of disbursement	
Allocation channel of public financial support	*2013*	*2014*
Official development assistance[a]	458.73	674.98
Core contributions through multilateral channels:		
Global Environment Facility	1.53	1.10
Trust Fund for Supplementary Activities	0	0.07
Financial institutions, including regional development banks	24.20	22.95
United Nations bodies	7.05	7.13
Climate-specific contributions through bilateral, regional and other channels	34.98	59.45

[a] Source: Query Wizard for International Development Statistics, available at <http://stats.oecd.org/qwids/>.

78. The BR2 provides information on the types of support provided. In terms of the focus of public financial support, as reported in CTF table 7 for 2013, the shares of total public financial support allocated for mitigation, adaptation, cross-cutting projects and

other projects corresponding to these channels were 15.5, 16.3, 2.2 and 17.7 per cent, respectively. Altogether, 48.4 per cent of the total public financial support was allocated through multilateral channels and 51.6 per cent of it was through bilateral and regional channels. In 2014, the shares of total public financial support allocated for mitigation, adaptation and cross-cutting projects and other projects corresponding to these channels were 40.0, 11.3, 1.3 and 12.9 per cent, respectively. Altogether, 34.5 per cent of the total public financial support was allocated through multilateral channels and 65.5 per cent of it was through bilateral and regional channels. New Zealand reported financial contributions made through multilateral channels as core funding (not specified as climate-specific), which represents full amounts provided for the full range of activities. Approximately half of the Party's public financial support through bilateral and regional channels was provided to the energy sector.

79. CTF tables 7(a) and 7(b) include information on the types of financial instrument used in the provision of assistance to developing countries, which include grants and capital subscriptions. Most of the financial support was provided as grants. New Zealand provided climate-related contributions as capital subscriptions through its contributions to the Asian Development Bank, the Global Environment Facility and the World Bank.

2. Technology development and transfer

80. In its BR2 and CTF table 8, New Zealand provided information on measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors.

81. While the ERT took note of the information provided in CTF table 8, such as recipient countries, target areas and focus sectors of technology transfer programmes, the BR2 and CTF table 8 do not include information required by the UNFCCC reporting guidelines on BRs on measures and activities related to technology transfer implemented or planned. During the review, in response to questions raised by the ERT, New Zealand clarified that while no descriptions were provided in CTF table 8, descriptions for contributions related to the provision of "technology development and transfer support'' and "capacity-building support" were provided in CTF table 9 (see para. 87 below)

82. During the review, New Zealand also provided additional information, elaborating on measures and activities related to technology transfer implemented since its BR1. According to the Party, the New Zealand Aid Programme has provided significant climate-related support for the use of renewable energy generation in non-Annex I Parties, including support for the use of technologies in photovoltaic and wind energy generation. The ERT recommends that New Zealand provide, in both textual and tabular format, information on measures and activities related to technology transfer implemented since its previous NC/BR in its next submission.

83. The ERT also noted that, in its BR2, including in CTF table 8, New Zealand reported on measures taken to promote, facilitate and finance the transfer and deployment of climate-friendly technologies, distinguishing between activities undertaken by the public and private sectors. The funding for the technology development and transfer activities is public, and activities are undertaken by both public and private institutions. The support is provided for both mitigation and adaptation activities, and most of the activities are in the energy and agriculture sectors. Approximately half of the support is provided to Pacific Island countries and the rest to countries in Africa, Asia and Latin America.

84. The BR2 does not include a sufficient description of measures taken to support the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties. During the review, in response to questions raised by the ERT, New Zealand provided additional information, elaborating that the New Zealand Aid Programme

aims to enhance the endogenous capacities and technologies of non-Annex I Parties through the development of indigenous technologies and the use of technologies in developing countries. The ERT reiterates the recommendation from the TRR/BR1 that New Zealand include such information in its next BR.

85. New Zealand did not provide information on success and failure stories of measures taken to promote, facilitate and finance technology transfer that benefits developing countries. The ERT reiterates the encouragement from the previous review report that the Party provide this information in its next BR.

3. Capacity-building

86. In its BR2 and CTF table 9, New Zealand supplied information on how it provided capacity-building support for mitigation, adaptation and technology that responds to the existing and emerging needs identified by non-Annex I Parties. CTF table 9 includes information describing a number of individual capacity-building measures and activities carried out during the reporting period. Examples include: strengthening rural training centres for adaptation in Vanuatu; a regional workshop on development of geothermal energy for the Caribbean; and provision of technical assistance for capacity-building for geothermal development in Indonesia. Most of the support is provided to Pacific Island countries for activities related to mitigation and adaptation, but New Zealand also provides capacity-building support to developing countries in Africa, Asia and Latin America.

87. New Zealand reported that its contributions are not currently tracked at a level that differentiates between the provision of "technology development and transfer" and "capacity-building" support. The ERT noted that CTF table 9 includes information on projects and activities related to technology transfer support. However, New Zealand reported in its BR2 that the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) definition for capacity development is used to identify activities that include a capacity-building support component. During the review, in response to questions raised by the ERT, New Zealand explained that for the purposes of reporting in the BR2, it undertook a brief assessment of the activities listed in its climate change inventory. New Zealand has used the DAC definition for capacity development[11] as a guide to select which activities should be included in the climate change inventory.

88. New Zealand reported that it supported climate-related capacity development activities relating to adaptation, mitigation and other sectors. The capacity-building support provided by New Zealand is facilitated through agreed joint commitments for development and strategic frameworks for development, which are based on partner country national plans and needs. Most of the support is provided for activities related to climate change mitigation and adaptation. New Zealand aims to ensure that the capacity-building support it provides responds to the priorities and needs of non-Annex I Parties through its development cooperation, which is reviewed through its participation in OECD DAC peer reviews and Pacific Islands Forum Compact development partner reviews.

[11] The Party's BR2 states that: "Capacity development is the process whereby people, organisations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time. Capacity development is more likely to be effective when capacity development is treated as a goal in its own right and that increased efforts are made to identify the objectives it seeks to achieve. Support for capacity development addresses three dimensions: human capacity, organisational capacity, and broader institutional capacity."

III. Conclusions

89. The ERT conducted a technical review of the information reported in the BR2 and CTF tables of New Zealand in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information is mostly in adherence with the UNFCCC reporting guidelines on BRs and provides an overview on: emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; progress made by New Zealand in achieving its target; and the Party's provision of support to developing country Parties.

90. New Zealand's total GHG emissions excluding LULUCF related to its quantified economy-wide emission reduction target were estimated to be 21.3 per cent above its 1990 level, whereas total GHG emissions including LULUCF are 42.4 per cent above its 1990 level for 2013. The emission increase was driven mainly by population growth and the resulting demand for transportation services, and by international demand for agricultural products.

91. Under the Convention, New Zealand committed itself to achieving a quantified economy-wide emission reduction target of 5 per cent below the 1990 level by 2020. This target covers the following GHGs: CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3, expressed using GWP values from the AR4, and covers all sources and sectors included in the annual GHG inventory. Emissions and removals from the LULUCF sector are included in the target and are accounted for using the activity-based approach and the second commitment period accounting rules for activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol, and New Zealand reported that it plans to make use of market-based mechanisms to achieve its target. In absolute terms, this means that under the Convention, New Zealand has to reduce its emissions from 66,720.16 kt CO_2 eq (in the base year) to 63,384.15 kt CO_2 eq by 2020.

92. New Zealand's main policy framework relating to energy and climate change is the NZ ETS and its envisaged operational improvements, in combination with afforestation and reforestation, supplemented by mitigation actions related to energy efficiency, landfill methane management and enhanced research on sustainable management of land, and livestock and food production that does not entail GHG emission growth in the agriculture sector. Key legislation supporting New Zealand's climate change goals includes the Climate Change Response Act 2002. The mitigation actions with the most significant mitigation impact by 2020 are the NZ ETS, afforestation projects, the National Environmental Standard for Landfill Methane, the Efficient Products Programme (one of the energy efficiency programmes) and the Business Programmes Package (for efficient management of energy-intensive business).

93. For 2013, New Zealand reported in CTF table 4 total GHG emissions excluding LULUCF at 80,961.64 kt CO_2 eq, or 21.3 per cent above the 1990 level, and also reported on the contribution of LULUCF towards the achievement of its 2013–2020 target. The Party reported the use of units from market-based mechanisms as 'NA" in CTF tables 4 and 4(b). The Party intends to meet its economy-wide emission reduction target with the use of surplus emission reduction units attained from the first commitment period of the Kyoto Protocol. However, the magnitude of the use of market-based mechanisms is unknown at this stage. The Party did not surrender (retire) any international units in 2013 to fulfil its 2020 target.

94. The GHG emission projections provided by New Zealand in its BR2 include those for the WOM and WEM scenarios. Under the WEM scenario, emissions without LULUCF are projected to be 24.3 per cent above the 1990 level in 2020. New Zealand expects to meet its 2020 target with the contribution of the activities under Article 3, paragraph 3, of

the Kyoto Protocol, and the use of about 25 per cent of the carry-over units (about 30 Mt) from the first commitment period of the Kyoto Protocol.

95. New Zealand continues to allocate climate financing in order to assist developing country Parties to implement the Convention. It has increased its contributions by 30 per cent since its NC6/BR1 compared with the reporting period 2011–2012, and its public financial support in 2013 and 2014 totalled USD 67.76 and 90.70 million per year, respectively. For these years, New Zealand's support provided for mitigation action was higher than the support provided for adaptation. The highest level of financial support went to projects in the energy sector. New Zealand also provides technology transfer and capacity-building support to developing countries, focusing on both mitigation and adaptation activities, and most of the support is provided to Pacific Island countries. It aims to ensure that the support it provides responds to the priorities and needs of non-Annex Parties through its development cooperation.

96. In the course of the review, the ERT formulated the following recommendations for New Zealand to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:[12]

(a) Improve the completeness of its reporting by:

(i) Providing information on planned mitigation actions aimed at achieving its economy-wide emission reduction target (see para. 26 above);

(ii) Describing measures and activities related to technology transfer implemented or planned since its previous BR, in the BR and in CTF table 8 (see para. 82 above);

(b) Improve the transparency of its reporting by:

(i) Providing information on the contribution of LULUCF towards its economy-wide emission reduction target following the selected accounting rules (see para. 38 above);

(ii) Clarifying how it supports the development and enhancement of the endogenous capacities and technologies of non-Annex I Parties (see para. 84 above).

[12] The recommendations are given in full in the relevant chapters of this report.

Annex

Documents and information used during the review

A. Reference documents

"UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/1999/7. Available at <http://unfccc.int/resource/docs/cop5/07.pdf>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf>.

FCCC/IDR.6/NZL. Report of the technical review of the sixth national communication of New Zealand. Available at <http://unfccc.int/resource/docs/2014/idr/nzl06.pdf>.

FCCC/TRR.1/NZL. Report of the technical review of the first biennial report of New Zealand. Available at <http://unfccc.int/resource/docs/2014/trr/nzl01.pdf>.

2015 greenhouse gas inventory submission of New Zealand. Available at <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php>.

Sixth national communication of New Zealand. Available at <http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/sixth-national-communication_20131220[1].pdf>.

First biennial report of New Zealand. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/br1_nzl_2014.pdf>.

Common tabular format tables of the first biennial report of New Zealand. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/nzl_2014_v4.0_posted.pdf>.

Second biennial report of New Zealand. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/nzl_second_biennial_report.pdf>.

Common tabular format tables of the second biennial report of New Zealand. Available at <http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/nzl_2016_v1_0_formatted.pdf>.

B. Additional information used during the review

Responses to questions during the review were received from Mr. Dan Zwartz (Ministry for the Environment of New Zealand), including additional material and the following documents[1] provided by New Zealand:

Ministry for the Environment. *Latest Update on New Zealand's 2020 Net Position.* Available at <http://www.mfe.govt.nz/climate-change/reporting-greenhouse-gas-emissions/latest-2020-net-position>.

Ministry for the Environment. 2016. *The New Zealand Emissions Trading Scheme Evaluation 2016.* Available at <http://www.mfe.govt.nz/publications/climate-change/new-zealand-emissions-trading-scheme-evaluation-report-2016>.

New Zealand Submission to the Conference of the Parties. 2014. *Information on the Appropriate Methodologies and Systems Used to Measure and Track Climate Finance.* Available at <http://www4.unfccc.int/submissions/Lists/OSPSubmissionUpload/55_19_130465243189001418-NZ%20submission%20on%20tracking%20scaled%20up%20finance%20May%202014.pdf>.

[1] Reproduced as received from the Party.