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**Report of the centralized in-depth review of
the fourth national communication of New Zealand**

According to decision 4/CP.8, Parties included in Annex I to the Convention are requested to submit to the secretariat, in accordance with Article 12, paragraphs 1 and 2, of the Convention, a fourth national communication by 1 January 2006. This report reflects the results of the in-depth review of the fourth national communication of New Zealand conducted by an expert review team in accordance with the relevant provisions of the Convention and Article 8 of the Kyoto Protocol.

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I. Introduction and summary

A. Introduction

1. New Zealand has been a Party to the UNFCCC since 1993 and to its Kyoto Protocol since 2002. Under the Kyoto Protocol, New Zealand committed itself to keeping its greenhouse gas (GHG) emissions at the base year (1990) level during the first commitment period from 2008 to 2012, or otherwise take responsibility for any excess emissions, namely by making use of the provisions of Article 3, paragraphs 3 and 4, and Articles 6, 12 and 17 of the Kyoto Protocol.
2. This report covers the centralized in-depth review (IDR) of the fourth national communication (NC4) of New Zealand, coordinated by the UNFCCC secretariat, in accordance with decision 7/CP.11. The review took place from 16 to 21 October 2006 in Bonn, Germany, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Gonçalo Cavalheiro (Portugal), Mr. Arthur Wellington Rolle (the Bahamas), Mr. Seppo Oikarinen (Finland), Ms. Helena Princova (Slovakia), Mr. Jigme (Bhutan) and Mr. Philip C. Acquah (Ghana). Mr. Cavalheiro and Mr. Rolle were the lead reviewers. The review was coordinated by Mr. Sergey Kononov (UNFCCC secretariat).
3. During the IDR, the expert review team (ERT) examined each part of the NC4. The ERT also evaluated the information contained in New Zealand's report demonstrating progress (RDP) in achieving its commitments under the Kyoto Protocol, and the supplementary information provided by New Zealand under Article 7, paragraph 2, of the Kyoto Protocol.
4. In accordance with the guidelines for review under Article 8 of the Kyoto Protocol (decision 22/CMP.1), a draft version of this report was communicated to the Government of New Zealand, which provided comments that were considered and incorporated, as appropriate, in this final version of the report.

B. Summary

5. New Zealand has submitted a comprehensive and transparent national communication, which adheres to the UNFCCC reporting guidelines¹ and complies with the relevant decisions of the Conference of the Parties (COP) and the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (COP/MOP). The ERT noted, however, that, because an extensive policy review was under way at the time when the NC4 was submitted, the report does not include information on additional policies and measures or on the use of the Kyoto Protocol mechanisms. Similarly, the GHG emission projections included in the NC4 are a provisional update prepared for the purpose of timely submission of the NC4 and the RDP.
6. As required by decision 25/CP.8, the RDP provides clear information on the progress made by New Zealand in achieving its commitments under the Kyoto Protocol, with the qualification that the issues mentioned above with respect to the ongoing policy review in New Zealand are important. Supplementary information under Article 7, paragraph 2, of the Kyoto Protocol² is provided in both the NC4 and the RDP. The ERT commended New Zealand for its coherent and consistent reporting.

¹ "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications." Document FCCC/CP/1999/7, pages 80–100.

² Decision 15/CMP.1, annex, chapter II (FCCC/KP/CMP/2005/8/Add.2).

1. Completeness

7. The ERT noted that the NC4 covers all the sections required by the UNFCCC reporting guidelines. The ERT also noted that New Zealand's RDP contains all the parts stipulated by decisions 22/CP.7 and 25/CP.8. Furthermore, the ERT noted that New Zealand has provided the supplementary information required under Article 7, paragraph 2.

2. Timeliness

8. The NC4 and the RDP were submitted on 4 May 2006. Decision 4/CP.8 requested the submission of the NC4 by 1 January 2006, and decision 22/CP.7 set the same date for Parties to submit their RDPs.

3. Transparency

9. New Zealand's NC4 is comprehensive, transparent, well structured and concise. The NC4 provides clear information on all aspects of the implementation of the Convention and its Kyoto Protocol. It is structured following the outline contained in the annex to the UNFCCC reporting guidelines. In the course of the review, the ERT formulated a few recommendations that could help New Zealand to further increase the transparency of its reporting, such as a recommendation to provide quantitative estimates for the impact of policies and measures on GHG emissions. The review team noted that the information contained in the NC4 and RDP is generally consistent.

II. Technical assessment of the reviewed elements

A. National circumstances relevant to greenhouse gas emissions and removals

10. In its NC4, New Zealand has provided a comprehensive description of its national circumstances affecting GHG emissions and removals. This description covers geography, population, land use and land cover, climate, government structure, economic profile, agriculture, forestry, energy, transport, waste and industry. Table 1 illustrates the national circumstances of the country by providing some indicators relevant to GHG emissions and removals.

Table 1. Indicators relevant to greenhouse gas emissions and removals for New Zealand

	1990	1995	2000	2004	Change 1990–2000 (%)	Change 2000–2004 (%)	Change 1990–2004 (%)
Population (million)	3.41	3.71	3.87	4.08	13.6	5.4	19.8
GDP (billion USD 2000 PPP)	61	71	80	94	32.2	17.0	54.8
TPES (Mtoe)	13.8	15.8	17.3	17.6	26.1	1.7	28.2
GDP per capita (thousand USD 2000 PPP)	17.8	19.0	20.7	23.0	16.4	11.0	29.2
TPES per capita (toe)	4.0	4.3	4.5	4.3	11.0	-3.5	7.1
GHG emissions without LULUCF (Tg CO ₂ eq)	61.9	64.5	70.3	75.1	13.6	6.8	21.3
GHG emissions with LULUCF (Tg CO ₂ eq)	42.9	49.5	50.1	50.6	16.7	1.0	17.9
CO ₂ emissions per capita (Mg)	7.4	7.3	8.0	8.3	7.7	4.0	12.0
CO ₂ emissions per GDP unit (kg per USD 2000 PPP)	0.42	0.39	0.39	0.36	-7.5	-6.3	-13.3
GHG emissions per capita (Mg CO ₂ eq)	18.2	17.4	18.2	18.4	0.0	1.3	1.3
GHG emissions per GDP unit (kg CO ₂ eq per USD 2000 PPP)	1.02	0.91	0.88	0.80	-14.1	-8.8	-21.6

Sources: GHG emissions data are from New Zealand's 2006 inventory submission. Population, GDP and TPES data are from the IEA.

Note 1: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

Note 2: For the abbreviations used, see annex II.

11. A particular feature of New Zealand's national circumstances is that the share of non-CO₂ emissions in total GHG emissions is high – much higher than it is in other Parties included in Annex I to the Convention (Annex I Parties). For example, the share of non-CO₂ emissions in total GHG emissions without land use, land-use change and forestry (LULUCF) was 59.1 per cent in 1990 and 54.7 per cent in 2004. This feature has a considerable influence on the approach to GHG mitigation in New Zealand.

12. The NC4 contains summary information on GHG emission trends for the period 1990–2003. This information is consistent with the information provided by New Zealand in its GHG inventory submitted in 2005 but not fully consistent with the latest available version of the 2006 submission of the national GHG inventory. The differences are small for total emissions without LULUCF (mostly less than 1 per cent in total GHG emissions) but noticeable for total emissions with LULUCF (up to about 6 per cent) and they must have resulted from recalculations of emissions from the LULUCF sector in 2006. The inventory-related information in the NC4 and RDP is consistent. Summary tables, including trend tables for emissions (given in the common reporting format (CRF)), are provided in an annex to the NC4.

13. Total GHG emissions excluding emissions and removals from LULUCF increased by 21.3 per cent between 1990 and 2004, whereas total GHG emissions including net emissions/removals from LULUCF increased by 17.9 per cent (see table 2). CO₂ emissions increased by 34.2 per cent, CH₄ emissions by 5.8 per cent and N₂O emissions by 27.2 per cent over this period. Emissions of fluorinated gases (HFCs, PFCs and SF₆ taken together) increased by 33.8 per cent from 1990 to 2004, but these emissions accounted for only 0.9 per cent of total national GHG emissions in 1990 and 0.9 per cent in 2004. Table 2 provides an overview of GHG emissions by sector from 1990 to 2004 (see also the discussion of sectoral trends in section II.B).

Table 2. Greenhouse gas emissions by sector for New Zealand, 1990–2004

	GHG emissions (Tg CO ₂ equivalent)					Change (%)		Shares ^a by sector (%)	
	1990	1995	2000	2003	2004	1990–2004	2003–2004	1990	2004
1. Energy	23.7	25.1	28.9	32.3	31.6	33.8	-2.0	38.2	42.1
A1. Energy industries	6.04	4.69	6.06	7.54	7.18	18.8	-4.7	9.8	9.6
A2. Manufacturing industries and construction	4.61	5.10	5.96	5.94	5.09	10.4	-14.3	7.5	6.8
A3. Transport	8.86	11.10	12.49	13.99	14.31	61.6	2.3	14.3	19.1
A4–5. Other	2.93	3.02	3.12	3.45	3.48	18.5	0.8	4.7	4.6
B. Fugitive emissions	1.21	1.21	1.31	1.39	1.58	30.9	13.8	2.0	2.1
2. Industrial processes	3.21	3.39	3.59	4.35	4.20	30.7	-3.5	5.2	5.6
3. Solvents and other product use	0.04	0.04	0.05	0.05	0.05	16.4	0.0	0.1	0.1
4. Agriculture	32.5	33.7	35.7	37.0	37.3	14.9	1.0	52.5	49.7
5. LULUCF	-19.0	-15.1	-20.2	-22.7	-24.5	29.0	7.7	-30.7	-32.6
6. Waste	2.48	2.27	2.08	1.93	1.84	-25.9	-4.6	4.0	2.5
GHG total with LULUCF	42.9	49.5	50.1	52.9	50.6	17.9	-4.3	-	-
GHG total without LULUCF	61.9	64.5	70.3	75.6	75.1	21.3	-0.7	-	-

^a The shares of sectors are calculated relative to GHG emissions without LULUCF; for the LULUCF sector, the negative values indicate the share of GHG emissions which was offset by GHG removals through LULUCF.

Note 1: The changes in emissions and the shares by sector are calculated using the exact (not rounded) values and may therefore differ from values calculated with the rounded numbers provided in the table.

Note 2: For the abbreviations used, see annex II.

14. As table 2 shows, between 1990 and 2004 GHG emissions increased in all sectors except waste. Within the energy sector, the ERT noted the high growth of emissions in transport where, in 2004, GHG emissions were 61.6 per cent above the 1990 level. The increases in emissions in the other energy subsectors were also considerable.

B. Policies and measures

15. As required by the UNFCCC reporting guidelines, New Zealand has provided in its NC4 comprehensive and well-organized information on its package of policies and measures implemented, adopted and planned in order to fulfil its commitments under the Convention and its Kyoto Protocol. Each sector has its own textual description of the principal policies and measures, supplemented by summary tables by sector. Table 3 provides a summary of the information reported on policies and measures.

16. The ERT noted that New Zealand has not provided information on how it believes its policies and measures are modifying longer-term trends in anthropogenic GHG emissions and removals

consistent with the objective of the Convention (paragraph 25 of the UNFCCC reporting guidelines). The ERT recognized, however, that this may have been due to the extensive policy review under way at the time when the NC4 was submitted, and this review may have a significant impact on both the emission trends and New Zealand's approach to achieving its commitments. During the course of the in-depth review of the NC4, New Zealand informed the ERT that this national policy review was still ongoing and in connection with this the ERT was informed that in late 2006 New Zealand released for public consultation a number of documents on various aspects of climate change policy. These documents cover energy policy, energy efficiency and conservation, and land use policy as well as options for greenhouse gas pricing and policy measures after 2012.

Table 3. Summary information on policies and measures

Major policies and measures	Examples / comments
Framework policies and cross-sectoral measures	
Integrated climate programme	The first New Zealand Climate Change Programme drafted in 1988
Support of research and development	International agreements with the USA and Australia
Energy sector	
Energy sector liberalization	Several companies compete in the generation and retail markets
Building regulations	Improvement of current regulations
Renewable energy sources	Market Development for Renewable Energy Programme
Energy efficiency improvements	Improve business programme, energy efficiency of products
Transport	
Vehicle and fuel taxes	Renewable transport fuels
Integrated transport planning	Travel Demand Management Programme
Industry	
Pollution prevention and control	SF ₆ programme: no-loss campaign for leakages of F-gases
Agreements/partnerships	Climate change agreements
Agriculture	
	Improvement of national inventory in the agriculture sector; voluntary partnership programme for low-emitting technologies and practices in sheep and cattle farming
Waste management	
	National Waste Minimisation and Management Strategy (2002); environmental standards for landfills (2004)
Forestry	
	Climate Change Forest Package 2004; Permanent Forest Sink Initiative; East Coast Forestry Project

Note: For the abbreviations used, see annex II.

1. Policy framework and cross-sectoral measures

17. The organizational structure to support the development and implementation of New Zealand's climate change policy has been evolving over time. Responsibility for climate change issues was given to the Ministry for the Environment in 1998; a Ministerial Climate Change Group was established in 2000; in October 2002 the Climate Change Office was established, and in late 2004 and early 2005 the functions of the Climate change Office were distributed across the Ministry for the Environment. Following the 2005 general election, the position of Minister Responsible for Climate Change was created. The Ministerial Reference Group on Climate Change, convened by the same minister, covers matters relating to finance, transport, agriculture, forestry, energy and economic development. As already mentioned, New Zealand is currently reviewing its climate change programme, entitled Climate Change Solutions, and therefore only measures that were implemented as of December 2005 are reported. Also as a consequence of the ongoing policy review, New Zealand has not reported on the use it expects to make of the Kyoto Protocol mechanisms.

18. New Zealand does not use tax incentives to explicitly support the uptake of energy efficiency. The expected introduction of a carbon tax (as reported in the third national communication (NC3)) will no longer take place. On the other hand, some incentives have been created to promote such behaviour, such as the grants administered by the Energy Efficiency and Conservation Authority for solar water heating and residential retrofitting. The Energy-Intensive Businesses Programme aims to help small and medium-sized enterprises, in different sectors, to reduce their GHG emissions by improved energy efficiency. Nine companies have been identified as energy-intensive (defined as those that spend more than 8 per cent of their total costs on energy). This programme is projected to provide for a reduction of 0.3 Tg CO₂ per year (about 3 per cent of GHG emissions from the industrial and commercial sectors).

19. New Zealand has deployed an innovative mechanism to reduce emissions in a programme called Projects to Reduce Emissions. Projects undertaken under this programme must comply with the requirements for joint implementation (JI) projects under the Kyoto Protocol. Participants in the projects receive assigned amount units (AAUs) for emission reductions achieved beyond a business-as-usual scenario, which can potentially be converted into emission reduction units (ERUs). Two initial trial projects and two tender rounds have resulted in the approval of 41 projects, which will be granted 10.6 million AAUs, corresponding to the projected emission reductions.

20. Local governments play an important role in both mitigation of and adaptation to climate change. The partnership signed between the Ministry of the Environment and the local governments aims to enhance their participation in the decision-making process, foster their participation in awareness-raising campaigns such as the 4 Million Careful Owners campaign, and provide support to the Communities for Climate Protection initiative, which addresses a number of local climate-related issues such as waste management, sustainable transport, urban planning, energy efficiency and sustainable farming practices.

2. Policies and measures in the energy sector

21. Between 1990 and 2004, GHG emissions from the energy sector increased by 33.8 per cent, driven by increases in all components of the sector. GHG emissions from energy industries increased by 18.8 per cent (or 12.8 Tg CO₂ equivalent), with some fluctuations from year to year because about 60 per cent of electricity in New Zealand is generated at hydroelectric plants (drier years lead to greater fossil-fuel-based electricity generation). Emissions from transport increased most (by 61.6 per cent, or 5.5 Tg CO₂ equivalent), thus making a major contribution to the 33.8 per cent increase for the energy sector as a whole. Energy use in other sectors (mostly residential and commercial sectors) also increased (by 18.5 per cent, or 0.6 Gg CO₂ equivalent), which can be attributed to the increasing number of dwellings (net 28,000 new dwellings in 2003)³ and the increased output of the services sector.

22. The framework for the energy policy in New Zealand was presented in the 2004 discussion document called Sustainable Energy: Creating a Sustainable Energy System, which sets out longer-term challenges for the secure, affordable and sustainable delivery of energy services. The Energy Efficiency and Conservation Strategy set two national level targets: to increase economy-wide energy efficiency by 20 per cent by 2012; and to increase the renewable energy supply to provide an additional 30 PJ (petajoules) of energy to consumers in 2012.

23. In the residential sector two programmes will provide for gains in energy efficiency and consequently for GHG emission reductions (not quantified in the NC4): improved building regulations, which will come into force in 2009; and the EnergyWise Home grants. The latter programme is a grant scheme focused on fitting insulation (and other energy efficiency measures) for existing homes. The objective is to retrofit 100,000 low-income families' homes that were built before 1977, before any building regulations relating to energy use were put in place. As of June 2005, 17,000 such homes had been insulated with government funding of 19 million New Zealand dollars (NZD). This will provide for energy savings amounting to 0.07 PJ in 2006.

24. Renewable energy sources are supported mainly through providing information to influence the decisions of electricity generators. In addition, the Market Development for Renewable Energy Programme aims to create market conditions for the introduction of such technologies, in particular solar water heating, through the granting of interest-free loans to purchase the relevant equipment, and to support the industry through demonstration projects, definition of standards and quality assurance. A 40 per cent increase in the number of solar water heating systems was observed in 2004 compared to 2003.

³ These emissions increased despite a high rate of buildings retrofitting (over 60 per cent of houses have been retrofitted to include at least some measures to improve energy use efficiency).

25. The vision of the New Zealand Transport Strategy is to have “an affordable, integrated, safe, and responsive and sustainable transport system” by 2010. A National Rail Strategy, covering both freight and urban passenger transport, complements an important Travel Demand Management Programme (where local governments play a key role), aimed at facilitating the use of less energy-intensive means of transport. In addition, an indicative target of 2 PJ per year by 2012 has been defined for the use of renewable fuels (bioethanol and biodiesel) in transport.

26. The ERT commended New Zealand for its clear and concise information on policies and measures, which adheres closely to the UNFCCC reporting guidelines. The ERT noted, however, that, given the policy review under way at the time when the NC4 was to be submitted, no additional measures are reported. The ERT also noted that no quantitative impacts of measures, in terms of GHG emissions, are provided (when impacts of measures are provided, they are usually reported in terms of level of activity, mostly as energy savings). The ERT recommends that in its next national communication New Zealand provide quantitative estimates for the impacts of measures on GHG emissions, converting the effect of measures on activity levels into changes in GHG emissions as necessary.

3. Policies and measures in other sectors

27. The non-energy sectors are a considerable source of GHG emissions, mostly because of the high emissions from agriculture. Between the base year (1990) and 2004, GHG emissions from all non-energy sectors (excluding LULUCF) increased by 13.6 per cent (5.2 Tg CO₂ equivalent). The increase was mainly driven by the increases in emissions from agriculture (4.8 Tg CO₂ equivalent) and from industrial processes (1.0 Tg CO₂ equivalent). The notable increases in emissions from agriculture and industry were to some extent offset by decreases in emissions from waste (0.7 Tg CO₂ equivalent) and by the increase in CO₂ uptake by LULUCF. CO₂ uptake increased by 29 per cent during that period, leading to an uptake that in 2004 was 5.5 Tg CO₂ equivalent higher than in 1990.

28. **Industrial processes.** Industrial processes are a minor emitter of GHGs in New Zealand (only 5.6 per cent of total national GHG emissions in 2004). However, it may be important to take measures in this sector, since the emissions are rising considerably. Although New Zealand has many industrial branches (cement, iron and steel, aluminium and ammonia industries), the policies and measures reported in the NC4 seem to be limited only to SF₆ and leakages of other fluorocarbons from refrigerators and air conditioning. The carbon tax previously planned (as reported in the NC3) and the earlier negotiated Greenhouse Agreements will not be introduced. An emissions trading system and a new voluntary-based agreement system are being considered.

29. **Agriculture.** Agriculture is a considerable source of GHGs in New Zealand: about half of its total GHG emissions excluding LULUCF (49.7 per cent in 2004) originate from this sector. CH₄ from enteric fermentation and manure management, and N₂O from animal dung and urine deposition and nitrogen fertilizer, are the two dominant components. Because of the high share of agricultural emissions, New Zealand pays great attention to the accuracy of the methods of estimating these emissions. Accordingly, the improvement of the GHG inventory system for agriculture is one of the policy measures for this sector. A voluntary research partnership between the government and farmers has been concluded to identify, establish and develop technologies for sheep, dairy and beef cattle farming which will reduce CH₄ emissions.

30. **Forestry.** The LULUCF sector offset about one third of New Zealand's total GHGs in 1990. The key reason for this is New Zealand's forestry policy, which has seen an increase forest area, largely for timber supply purposes. The result has been an average increase of 44,000 ha in forest area per year over the last 30 years. Over the period 1992–1998 the planting rate was especially high (66,000 ha per year on average). Planting rates for new forests have been declining in the last few years and the Permanent Forest Sink Initiative (PFSI) has been introduced as one measure to encourage afforestation/reforestation. This consists of a contract between the state and the landowner: the state

agrees to grant a tradeable carbon emission unit against 1 unit of CO₂ absorbed in a newly-established permanent forest sink during the first commitment period under the Kyoto Protocol (2008–2012). Another LULUCF measure is the East Coast Forestry Project, which consists of grants for tree planting for anti-erosion purposes.

31. **Waste.** The waste sector is a very minor source of GHGs (2.5 per cent of total GHG emissions in 2004). This is also the only sector where emissions decreased between 1990 and 2004. GHG inventory data are available only for CH₄ and N₂O; CO₂ emissions have not been estimated. Most (90.0 per cent in 2004) of the CH₄ originates from landfills, and waste-water handling is the second largest source of CH₄. A National Waste Management strategy was launched in 2002 with the aim of separating garden and kitchen waste from waste bound for landfill sites. National environmental standards for landfills came into force in 2004. It is estimated that these standards will reduce emissions by 2.1 Tg CO₂ equivalent over the period 2006–2012. Even without special measures, investments to recover CH₄ and N₂O from waste-water treatment have been made voluntarily by the companies involved.

C. Projections and the total effect of policies and measures

1. Projections

32. In its NC4, New Zealand has provided GHG emission projections for a “with measures” scenario for the period 2005–2020. The projections are presented relative to inventory data for the period 1990–2003 on a sectoral basis and on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆. The division into sectors is the same as that used in the section on policies and measures: energy, transport, industrial processes, agriculture, LULUCF and waste. The projections are also provided in an aggregated format for each sector as well as for a national total, using global warming potential (GWP) values. Emission projections related to fuel sold for use in ships and aircraft engaged in international air and sea transport are reported separately and not included in the totals. “With additional measures” and “without measures” projections are not provided. A comparison with the NC3 projections has been made for energy, transport, industrial processes and LULUCF. Table 4 and figure 1 provide a summary of the GHG emission projections reported by New Zealand up to 2020.

Table 4. Summary of greenhouse gas emission projections for New Zealand

	GHG emissions (Tg CO ₂ equivalent per year)	Changes compared to base year level (%)
Inventory data 1990 ^a	61.89	N/A
Inventory data 2004 ^a	75.09	21.3
Kyoto Protocol base year ^b	61.89	N/A
Kyoto Protocol target	61.89	0
“With measures” projections for 2010 ^b	82.43	33.2

^a Source: New Zealand’s 2006 GHG inventory submission; the emissions are without LULUCF.

^b Source: New Zealand’s NC4; the projections are for GHG emissions without LULUCF.

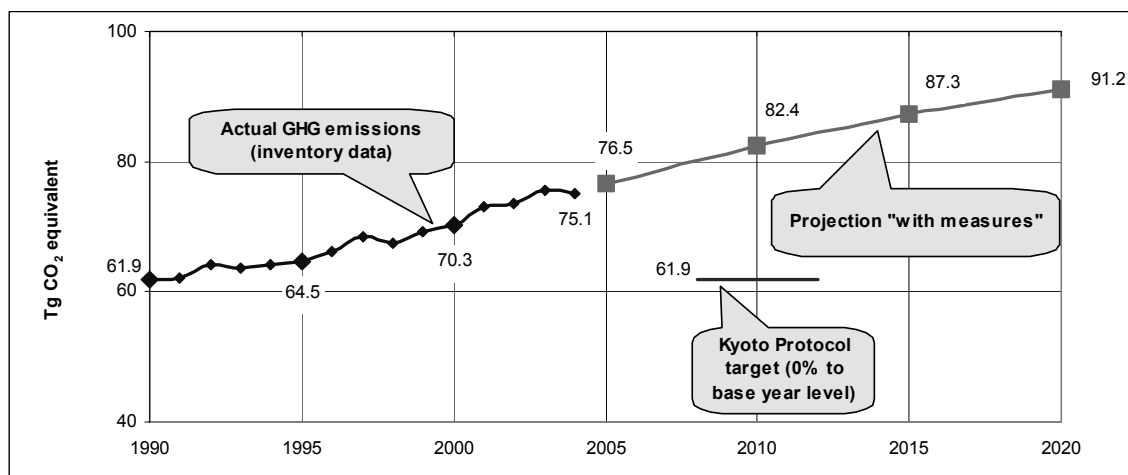
Note: For the abbreviations used, see annex II. N/A = not applicable.

33. Key historical and projected input data for projections, such as gross domestic product (GDP), oil and coal prices, exchange rate and population growth up to 2020, are presented, and for some sectors complemented with assumptions on activity data. As New Zealand is self-sufficient in gas, assumptions on gas discoveries during the projection period are provided in the NC4 rather than price forecasts for gas.

34. The methodology and modelling tools used for projections in the energy sector have not changed in New Zealand since the first national communication. The Supply and Demand Side Model (SADEM) with a sub-model for the electric power sector (including renewables) has been used. The information provided in the NC4 on the models used is comprehensive, but the ERT noted that there is no information on updating of the models (including methods for cost calculation for different electricity

supply options), although forthcoming updates were mentioned during the IDR of the NC3.⁴ A detailed description is also given of the econometric Pastoral Supply Response Model (PSRM) which is used for the projection of livestock numbers for sheep, deer, and dairy and beef cattle. The information provided on the activity data and emission factors used for the agriculture sector is sufficient.

Figure 1. Greenhouse gas emission projections for New Zealand



Source: New Zealand's NC4; the projections are for GHG emissions without LULUCF.

35. The NC4 "with measures" scenario is a provisional update of the scenario prepared in May 2005. This update has been undertaken to reflect the decision not to adopt a carbon tax, as a result of the revised Climate Change Policy Package (2005). For all sectors projected emissions increase continuously up to 2020, except for the forestry sector, where considerable fluctuations over the period 2005–2020 are observed⁵. The difference between projected GHG emissions and New Zealand's target under the Kyoto Protocol is about 20.5 Tg CO₂ equivalent per year on average (without considering the use of sinks) over the first commitment period (2008–2012). The ERT noted that New Zealand expects to generate removal units under Article 3.3 which will help it meet its Kyoto Protocol target. Although estimates for the expected credits from sinks are provided, there are differences in the figures in the NC4 and the RDP. The ERT suggests that New Zealand include in its next national communication clearer information on the projected use of LULUCF credits under Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

36. Emissions are projected to grow over the period 2005–2020 for the energy sector and its subsectors, and they are now projected to be higher in the period 2005–2015 than was projected in the NC3, mostly because higher coal consumption for electricity generation and more intensive depletion of the Maui gas field are assumed, although another reason is improvements to the calculation of GHG emissions from gas flaring. The projected 2020 emissions for the energy sector are lower in the NC4 than in the NC3 because of the assumption of lower consumption of coal for electricity production, as new generation capacity will be added, based mostly on renewable energy sources (hydro, geothermal, wind) and natural gas (with combined-cycle turbines).

37. Future trends of emissions in transport are projected separately (not as a part of the energy sector) and they are split into the land, domestic air, and sea transport subsectors. The ERT noted a sharp growth in emissions up to 2020 (to a level almost 2.5 times higher than that of 1990) for this sector, which is even higher than was projected in the NC3. The ERT believes that this trend indicates a need

⁴ See the report on the in-depth review of the third national communication of New Zealand (FCCC/IDR.3/NZL).

⁵ The ERT was informed that given the New Zealand forestry industry operates in a market based environment it is difficult to forecast planting rates and deforestation rates as these change due to factors such as changes in the exchange rate, relative profitability of alternative land uses, and log prices.

for particular attention to the design of the package of policies and measures to ensure that emissions from transport do not increase in proportion to the growth in passenger and freight transportation (to “decouple” emissions from activity levels in transport).

38. Projected emissions for the industrial processes sector are slightly higher than those in the NC3 as a result of expected growth in the cement industry and changes in the methodology for estimating emissions from urea processing.

39. Except for PFCs, emissions of all the GHGs are projected to increase, with the highest growth rates for CO₂ (increases by 38 per cent in 2005 and by 52 per cent in 2010) and N₂O (increases by 33 per cent in 2005 and by 43 per cent in 2010). Emissions of CH₄ (increases by 7 per cent in 2005 and by 11 per cent in 2010), HFCs and SF₆ are projected to grow more slowly. CH₄ and N₂O emissions from agriculture are projected to grow, but more slowly than before and in proportion to the projected limits on livestock numbers. The projected fluctuations in annual net CO₂ removals by forestry in the period 2005–2020, particularly between 2005 and 2010, are due to changes in the rates for afforestation and harvesting that lead to a considerable decrease in sinks in 2010.

2. Total effect of policies and measures

40. In the NC4, New Zealand has presented the expected effect of policies and measures only for some of its implemented and adopted measures, and mostly in terms of energy savings. Table D1 in annex D to the NC4 gives a comprehensive summary of all implemented, adopted and planned policies and measures by sectors and by gases, but no information on estimated reduction potential, although this is required by the UNFCCC reporting guidelines.

41. The ERT encourages New Zealand to put additional effort into the preparation of its GHG projections in time for its next national communication so that they can be used to the full as a tool for estimating the individual and total effects of policies and measures on GHG emissions. The preparation of scenarios “with additional measures” and “without measures” may be useful in this respect.

D. Vulnerability assessment, climate change impacts and adaptation measures

42. In the NC4, New Zealand has provided the information required on the expected impacts of climate change in the country. Recent downscaled model climate scenarios developed by the National Institute of Water and Atmospheric Research (NIWA) project an increase in potential evapotranspiration deficit, leading to an extension of periods of drought in spring and autumn. Additional studies show that droughts are one of the leading causes of the annual fluctuations in New Zealand’s GDP. New Zealand has reported that there is an increased risk of fire in many parts of the country because of the increasing dryness of the landscape. Socio-economic analyses have also been performed with a focus on the economic costs and responses for the Coromandel area following a major flooding event; and the impacts on health have been considered as part of New Zealand’s Biosecurity Science Strategy. Table 5 summarizes the information on vulnerability and adaptation to climate change presented in the NC4.

43. The CLIMPACTS programme, with funding from the Foundation for Research, Science and Technology and support from the United Nations Environment Programme (UNEP), the Global Environment Facility (GEF) and the Asian Development Bank, has recently developed methods and tools to assess the human dimension of climate change that will promote the mainstreaming of adaptation into decision making.

44. The NC4 does not contain much information on adaptation except for a reference to a number of research programmes that provide specific information on impacts and adaptation in agriculture. The ERT noted that New Zealand’s local governments are responsible for the avoidance and mitigation of natural hazards. Recent work by local government in this regard includes the development of guidance material on impact assessments and the scoping of adaptation options. The Civil Defence Emergency

Act of 2002 was passed to improve resilience and promote a comprehensive, all-hazards approach to managing risk.

Table 5. Summary information on vulnerability and adaptation to climate change

Vulnerable area	Examples / comments / adaptation measures reported
Agriculture	Vulnerability: Agricultural crops and animals likely to be affected by pests, drought, flood, erosion and the invasion of subtropical species
Biodiversity and natural ecosystems	Vulnerability: Some specific species with a limited climatic “envelope” and several freshwater species requiring cold conditions
Coastal zones	Vulnerability: Flooding likely to increase as a result of rising sea levels and more intense rainfall
Drought	Vulnerability: Increased evapotranspiration will extend drought into the spring and autumn months
Forests	Vulnerability: Some benefit from increased CO ₂ concentration, but a negative effect of wind, fire, pests, diseases and increased climate variability
Human health	Vulnerability: Possible increase in heat-related deaths, pollution of water supplies in rural areas, spread of vector-borne diseases
Infrastructure and economy	Vulnerability: Economic impacts may include disruption to business, agricultural losses, costs associated with higher water demand and impact on the insurance industry
Maori	Vulnerability: Soil erosion from flooding and ocean surge
Fisheries, aquaculture and marine ecosystems	Vulnerability: Increased temperature likely to threaten fish reproduction

45. The ERT noted that New Zealand might experience some benefits from increased winds and temperatures. Positive health effects are expected from warmer winters and a related reduction in cold-related illnesses; agriculture is likely to benefit from an extended growing season and from carbon fertilization, and stronger winds are expected to support the expansion of wind-power generation, to 7 per cent of total electricity consumption by 2020 from the present 3 per cent.

E. Financial resources and transfer of technologies

1. Financial resources

46. The chapter on the financial mechanisms and transfer of technology is comprehensive and generally in compliance with the UNFCCC reporting guidelines; details on action taken to give effect to New Zealand’s commitments under Article 4, paragraphs 3, 4 and 5, are provided. However, the ERT noted that no definition of “new and additional” financial resources has been provided pursuant to Article 4, paragraph 3. New Zealand informed the ERT during the course of the review that it understands “new and additional” financial resources as meaning resources provided since 1993, when it ratified the Convention. Since 1993, New Zealand has provided financial support to developing country Parties in a number of ways, including through the work of the New Zealand Agency for International Development (NZ Aid), New Zealand’s contributions to the GEF and, since 2005, in the form of New Zealand’s NZD 5 million voluntary commitment. These have been reported in the successive national communications. Table 6 summarizes the information reported on financial resources.

Table 6. Summary information on financial resources

Official development assistance (ODA)	USD 212 million (0.23 per cent of GNI) in year 2004 (OECD)
Climate-related aid in bilateral ODA	0.4 per cent (OECD/DAC estimate for 1998–2000)
Contributions to GEF (USD million)	USD 14.28 million as of June 2004 (OECD)
Pledge for third GEF replenishment	USD 1.27 million as of June 2003 (OECD)

Source: Statistics of OECD’s Development Assistance Committee (DAC) (available at <www.oecd.org>).

47. In the NC4, New Zealand has reported information on financial and technical assistance provided for the purpose of supporting developing country Parties that are particularly vulnerable to the adverse impacts of climate change in meeting the costs of adaptation and implementing the provisions of the Convention. New Zealand has focused on helping to meet the concerns and needs of the Pacific Island countries, which are on the front line of climate change impacts.

48. In 2001, New Zealand, together with some other countries, made a Political Declaration on Financial Support for Developing Countries. New Zealand's share under that voluntary political pledge was NZD 5 million per year from 2005. The commitment under the declaration consisted of a proportion of the funds from New Zealand's total GEF contribution that is likely to be spent on climate change projects; climate change-related support by NZAID in the Pacific region; funding for lump-sum contributions to one or more of the UNFCCC funds; and funding for ad hoc contributions towards projects which advance international action, such as contributions to supplementary funding for UNFCCC workshops and a contribution to the Renewable Energy and Energy Efficiency Partnership (REEEP) to be spent in the Pacific region to meet regional priorities.

49. The draft environment policy of NZAID stresses the importance of assisting adaptation measures. New Zealand has provided information on its financial assistance through bilateral, regional and other multilateral channels in the areas of capacity-building and water resources as support for adaptation and mitigation activities.

2. Transfer of technology

50. In the NC4, the New Zealand has reported that all its actions to promote, facilitate and finance, as appropriate, the transfer of or access to environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention are implemented primarily through the work of NZAID and through various Global Climate Observing System (GCOS)-related initiatives in the Pacific region. New Zealand has also reported that transfer of environmentally sound technologies is largely undertaken through the private sector, the government's role being that of facilitating technological development.

51. The ERT commended New Zealand for its comprehensive, excellent reporting on financial resources and technology transfer, including success stories and extensive information on the examples of programmes and projects that promise to become practicable steps to facilitate and/or finance the transfer of, or access to, environmentally sound technologies for developing countries.

F. Research and systematic observation

52. New Zealand has provided information on its actions relating to research and systematic observation and addressed both domestic and international activities, including the World Climate Programme, the International Geosphere–Biosphere Programme, the GCOS and the activities of the Intergovernmental Panel on Climate Change (IPCC). New Zealand contributed substantially to the Fourth Assessment Report of the IPCC by supporting one of its scientists as a Bureau member, providing two convening lead authors together with several lead and contributing authors and review editors. New Zealand increased its expenditure in fiscal year 2003/2004 by NZD 10.9 million to improve its observing network and to maintain its National Climate Database.

53. The ERT noted the numerous research activities being conducted by New Zealand and some preliminary results. There is now further evidence from research that certain fish species are influenced by climate variability and that inter-annual changes in climate are related to the timing of epidemics; and analyses have quantified the role of weather and seasonal patterns in the incidence of certain gastrointestinal diseases.

54. The ERT noted New Zealand's adherence to the UNFCCC reporting guidelines in providing a separate report on the GCOS. The summary report contained in the NC4 gives detailed information on New Zealand's progress in climate research and observation since the NC3 was submitted. New Zealand has built an extensive archive of systematic atmospheric, oceanic and terrestrial observations in accordance with the GCOS reporting requirements. The Meteorological Service has International Organization for Standardization (ISO) 9001 certification and the NIWA has ISO 9002 certification in accordance with its quality management framework. New Zealand has provided general assistance to

develop observing networks and supported initiatives to restore and upgrade the regional upper-air networks, recover historical climate data and produce a Pacific regional climate bulletin for countries such as Kiribati, Tuvalu, Samoa, Tokelau, Tonga, Niue and the Cook Islands.

55. New Zealand exchanges data and information with other countries in line with the policies of the World Meteorological Organization (WMO). The NIWA has developed user-friendly web access to the National Climate Database.

G. Education, training and public awareness

56. In the NC4, New Zealand has reported its actions relating to education, training and public awareness, as required by the UNFCCC reporting guidelines (paragraph 65) with the exception of information on the extent of public participation in the preparation or domestic review of the national communication. The ERT suggests that the Party report such information, where feasible, in its future national communications.

57. New Zealand has reported that its general policy towards education, training and awareness includes a three-phase public awareness and education programme agreed in 2004 by the government to improve New Zealanders' understanding of the issues relating to climate change and to bring about changes in behaviour that would help reduce GHG emissions. The core "brand" of the 4 Million Careful Owners campaign was based on the elements of inclusiveness, community, collective response and pride. The first phase of the campaign, which focused on reaching out to the public and raising awareness, had a specifically-designed interactive website that provided information on how to reduce emissions from transport, energy use and waste, as well as general information about climate change, provisions for people to pledge their support to undertake particular actions to reduce emissions, and a questionnaire by which they could measure their GHG-reducing and energy-efficient behaviour compared to that of other New Zealanders. The website had over 35,000 visits over the six-week period of the campaign's first phase. The level of concern declared over the issue of climate change increased by 7 per cent in July 2003 to 66 per cent following the second phase of the campaign. The second phase builds on the phase 1 activities and also focuses on long-term behavioural change. Key stakeholders for the campaign are an industry reference group and the public. Phase 3 will take place when the new climate policies are announced.

58. Nationwide consultations including the general public, local government representatives, business and special interest groups, Maori and school children were held in 2002 to seek their views on the preferred policy options to enable New Zealand to meet its Kyoto Protocol emission reduction target. The inputs from the consultations were used in developing the climate change policy package. In 2003, consultations on design and implementation details of Negotiated Greenhouse Agreements and Projects to Reduce Emissions were carried out, and a consultation with the farming community was also carried out on how a levy to support research on reducing emissions from agriculture could be collected and administered. A series of consultation meetings were held in early 2006 to discuss the outcome of the 2005 climate change policy review.

59. New Zealand has reported that the government maintains a climate change website and that a wide range of publications have been produced since the NC3 in 2001. Seminars and workshops on climate change issues, and on related policies and options, have been conducted in conjunction with the consultation meetings. Educational materials for students and teachers have been produced. The Communities for Climate Protection New Zealand (CCP-NZ) programme, which focuses on local authorities, provides a strategic framework to take action to reduce GHG emissions and also builds capacity within local authorities.

III. Evaluation of information contained in the report demonstrating progress and of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

A. Information contained in the report demonstrating progress

60. New Zealand's RDP includes four chapters which contain the information required by decisions 22/CP.7 and 25/CP.8. The ERT noted that the information provided in the RDP generally represents short descriptions and summaries, with references to the NC4. Because of the policy review that was under way at the time the NC4 was prepared, the information provided is not comprehensive enough for the ERT to be able to determine the progress made by New Zealand towards meeting its emission reduction commitment under the Kyoto Protocol. However, the additional information obtained during the review – namely the 2006 national inventory report (NIR), the initial report under the Kyoto Protocol (2006), New Zealand's Net Position Report, June 2006 on the projected balance of emissions during the commitment period, and the Climate Change Solutions report (2006) on work programmes for the period 2012–2030 – and the country's response to the ERT's questions provided some more details on New Zealand's efforts to meet its obligations under the Kyoto Protocol.

61. New Zealand has put in place adequate institutional and legislative arrangements for its national system and national registry, including legislative arrangements and compliance and enforcement measures to implement the commitments under the Kyoto Protocol. The Climate Change Office has been established, and was restructured in 2002 and placed within the Ministry of the Environment as the national inventory agency; and the national registry under the Kyoto Protocol was established by the Climate Change Response Act (CCRA) of 2002 and a CCRA (Amendment) Bill of 2005 to regulate the operation of the New Zealand Emission Unit Register (NZEUR). Detailed descriptions of the registry and the national system are provided in the initial report and the NIR, respectively, which are published. The ERT commended New Zealand for giving the CCRA explicit legislative powers to collect information and data for the preparation of the GHG inventories, as well as providing for offences and penalties for failure to provide information, in order to ensure data integrity and the availability of data for inventory preparation.

62. The policies and measures implemented, adopted, considered and planned in all sectors and implemented for the period 1998–2005 are summarized in annex D to the NC4. The key policy initiatives to meet the commitments under the Kyoto Protocol include the Climate Change Policy (CCP) of 2000, and a Preferred Policy Package (PPP) of 2001–2002. Since ratification of the Kyoto Protocol in 2002, new consultations have been held to review the CCP and develop a new policy mix for the period 2006–2012 towards meeting the obligations under the Protocol. Additional information provided by New Zealand indicates that the outcomes of the consultation process were published as New Zealand's Net Position Report in July 2006. The report updates the projections of GHG emissions/removals for the first commitment period and also provides alternative policies and measures to replace the carbon tax previously announced (in 2002), which will not now be introduced.

63. New Zealand's legally binding commitment under the Kyoto Protocol is to keep GHG emissions at the base year (1990) level during the first commitment period. New Zealand's annual emissions of the six GHGs covered by the Kyoto Protocol without net emissions/removals by the LULUCF sector were about 21.3 per cent higher in 2004 than in 1990. Since 1990, emissions have increased in all sectors except waste. The agriculture and energy sectors constitute the major challenges for New Zealand's meeting its obligation under the Kyoto Protocol. Unlike in other Annex 1 Parties, non-CO₂ emissions from agriculture (CH₄ and N₂O) contribute a large percentage (49.7 per cent) of total GHG emissions and they showed a substantial increase – of 14.9 per cent above the 1990 level in 2004. Emissions from the energy sector, which contributed 42.1 per cent of total GHG emissions in 2004, also increased – by 33.8 per cent over the period 1990–2004 – driven by increases in emissions in all the energy subsectors.

64. New Zealand published its Projected Balance of Units in May 2005 for the first commitment period of the Kyoto Protocol and has subsequently updated the information in the Net Position Report published in July 2006. The updated report projected New Zealand's emissions reduction gap during the commitment period as 42.1 Tg CO₂ equivalent including LULUCF. These projections show that New Zealand can potentially meet its emission reduction targets during the first commitment period by the use of LULUCF removal units and the Kyoto Protocol mechanisms (the clean development mechanism (CDM), JI, emissions trading). Although the RDP and the NC4 do not discuss these options, the recently released New Zealand's initial report under the Kyoto Protocol provides information relating to reporting under Article 3, paragraph 3, of the Kyoto Protocol. The ERT recommends that information on the use of the Kyoto Protocol mechanisms to supplement domestic action and activities implemented under Article 3, paragraph 3, of the Kyoto Protocol towards meeting its emission reduction target be included in New Zealand's next national communication.

65. The LULUCF sector accounted for net removals (including emissions of CH₄ and N₂O) of approximately 24.5 Tg CO₂ equivalent in 2004, thus offsetting 32.6 per cent of New Zealand's total GHG emissions in 2004. New Zealand estimates that 660,000 ha of new forests, which are called Kyoto Forest, were established as a result of afforestation and reforestation activities (i.e. Article 3, paragraph 3 activities) in the period 1990–2003. National forestry policy options for managing deforestation, and encouraging afforestation and reforestation, are being formulated. New Zealand's initial report and the Net Position Report 2006 indicate that New Zealand expects to generate removal units from Kyoto Forest during the first commitment period. However, New Zealand has not elected activities under Article 3, paragraph 4, of the Kyoto Protocol in the first commitment period because there are uncertainties in the relevant inventory data. A national carbon monitoring system is being established to provide robust estimates of carbon stocks and changes in carbon stocks in natural forests. The ERT noted the importance of establishing in good time its accounting system for using forestry credits and suggested that New Zealand provide a detailed description of this approach, in its next national communication.

B. Supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

66. New Zealand has provided supplementary information under Article 7, paragraph 2, of the Kyoto Protocol in its NC4 and RDP. This information reflects the steps taken by New Zealand to implement the relevant provisions of the Kyoto Protocol. The supplementary information is placed in different sections of the NC4 and the RDP. Table 7 provides a summary and references to the NC4 and RDP chapters in which supplementary information is provided.

67. New Zealand has reported only very brief information on how it believes its policies and measures are being implemented in such a way as to minimize adverse effects, including effects of climate change, on other Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. It has also not provided a description of the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol, also contributes to the conservation of biodiversity and sustainable use of natural resources.⁶ The ERT recommends that New Zealand include more detailed information on these issues in its next national communication.

⁶ See paragraph 38 in decision 15/CMP.1.

Table 7. Overview of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol

Supplementary information	Reference	Reported activities
National systems under Article 5, paragraph 1	Annex C to NC4, p. 180 RDP, p. 219	Detailed information required is provided in neither the NC4 nor the RDP, but reference is made to a well-advanced system described in the 2006 NIR and to a detailed description provided in the initial report under the Kyoto Protocol
National registry	Annex C to NC4, p. 180 RDP, p. 219	National Climate Change Response (NCCR) Act (2002) provides for the appointment of a national registry and the registrar, and NCCR (Amendment) Bill legislates for the operation of the registry; a detailed description to be provided in the initial report under the Kyoto Protocol
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Annex C to NC4, p. 180	Institutional arrangements to participate in the Kyoto Protocol mechanisms are being put in place; the NC4 indicates that the balance between domestic action and the use of Kyoto Protocol mechanisms is not yet determined
Implementation of Article 3, paragraphs 3 and 4	RDP, pp. 223–226 NC4, pp. 106–112	Projected GHG removals from LULUCF in the first commitment period under Article 3.3 are provided in the RDP, but the NC4 indicates that the methodology does not yet conform to eligibility criteria for crediting RMUs from LULUCF. No mention is made about New Zealand's elections for activities under Article 3, paragraph 4. Complementary information was provided during the course of the IDR
Policies and measures in accordance with Article 2	RDP, pp. 212–217, 224–225; Annex D to NC4; Annex C to NC4, p. 180	Information has been provided on existing policies and measures to reduce emissions in energy supply, transport, industry, agriculture, LULUCF, waste. No detailed information has been provided on specific policies to minimize impacts on other Parties, particularly developing countries
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Annex D to NC4; RDP, p. 220; Annex C to NC4, pp. 180–181	Reported are national policy instruments (regulatory, fiscal, economic, and negotiated agreements) for various measures, and legislation for institutional arrangements for participation in the Kyoto Protocol mechanisms and implementation of the national registry; enacted legislation for provision of inventory data, penalties and offences for non-compliance
Information under Article 10	NC4, pp. 130–157; RDP, pp. 225–226	Limited information is provided in the RDP but reference is made to the NC4, chapters 7 and 8, which report all the information required under Articles 10 and 11
Information under Article 11	NC4, pp. 130–138	See section II.E of this report

Note: For the abbreviations used, see annex II.

IV. Conclusions

68. The ERT noted New Zealand's unique national circumstances in that the agriculture sector accounts for 49.7 per cent of total national GHG emissions and in that the forestry sector may play a decisive role in the achievement of New Zealand's commitments under the Kyoto Protocol. In 2004 New Zealand's GHG emissions (excluding LULUCF) were 21.3 per cent above the 1990 level, whereas the national target under the Kyoto Protocol is to keep GHG emissions at the 1990 level during the first commitment period (2008–2012). New Zealand has in place a Climate Change Programme, which includes policies and measures to reduce GHG emissions (by a generally unreported amount). At the time of the IDR, New Zealand was conducting an extensive review of its Climate Change Programme, in the course of which additional measures, including the use of carbon sinks and the Kyoto Protocol mechanisms, to achieve the Kyoto Protocol target are to be defined.

69. In the NC4 and the RDP, New Zealand presents GHG projections for the period 2005–2020. One “with measures” projection (including the effect of currently implemented and adopted policies and measures) has been presented, in a provisional update of the projections performed to enable New Zealand to submit the NC4. The “with measures” projection shows that New Zealand's GHG emissions in 2010 will amount to 20.5 Tg CO₂ equivalent, or 33.2 per cent, above the 1990 level (set as the Kyoto Protocol target). Thus the projections indicate that New Zealand will need to identify and implement additional policies and measures to meet its Kyoto Protocol target.

70. In the course of the IDR, the ERT formulated a number of recommendations relating to the completeness and transparency of New Zealand's reporting under the Convention and its Kyoto Protocol. The key recommendations⁷ are that New Zealand, in its next national communication:

- Report both individual and total quantitative estimates for the impact of policies and measures on GHG emissions; this is relevant to the reporting on policies and measures as well as to the reporting of GHG projections;
- Describe the contributions of domestic measures, credits from LULUCF activities and the flexibility mechanisms of the Kyoto Protocol to the overall effort to meet the national Kyoto Protocol target;
- Describe the national legislative arrangements and administrative procedures that seek to ensure that the implementation of activities under Article 3, paragraph 3, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and sustainable use of natural resources.

71. The ERT was not able to evaluate New Zealand's path towards compliance with its Kyoto Protocol emission commitment because a new climate change programme, including projections, was being developed at the time when the NC4 was submitted and reviewed. In this regard, the ERT recommends that in the next IDR special attention be given to the chapters on policies and measures and on projections.

72. The ERT commended New Zealand for its efforts in providing a comprehensive and clear national communication, despite the fact that, due to the ongoing internal review of the climate change programme, the information provided was not enough to make it possible to evaluate New Zealand's approach to meeting its Kyoto Protocol target. Nonetheless, the detail and the transparency of the reporting demonstrate the effort New Zealand is making in implementing the Kyoto Protocol and in cooperating with other countries, developed and developing, in combating climate change and its impacts.

⁷ For a complete list of recommendations, the relevant sections of this report should be consulted.

Annex I

Documents and information used during the review

A. Reference documents

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

UNFCCC. Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol, decision 15/CMP.1. FCCC/KP/CMP/2005/8/Add.2. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=54>>.

UNFCCC. Guidelines for review under Article 8 of the Kyoto Protocol, decision 22/CMP.1. FCCC/KP/CMP/2005/8/Add.3. Available at <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=51>>.

UNFCCC. Report on the in-depth review of the third national communication of New Zealand. FCCC/IDR.3/NZL. Available at <<http://unfccc.int/resource/docs/idr/nzl03.pdf>>.

UNFCCC. Synthesis of reports demonstrating progress in accordance with Article 3, paragraph 2, of the Kyoto Protocol. FCCC/SBI/2006/INF.2. Available at <<http://unfccc.int/resource/docs/2006/sbi/eng/inf02.pdf>>.

UNFCCC. Report of the individual review of the greenhouse gas inventory of New Zealand submitted in the year 2005. FCCC/ARR/2005/NZL. Available at <<http://unfccc.int/resource/docs/2006/arr/nzl.pdf>>.

New Zealand's Ministry for the Environment. New Zealand's Fourth National Communication under the United Nations Framework Convention on Climate Change. Available at <<http://unfccc.int/resource/docs/natc/nzlnc4.pdf>>.

New Zealand's Ministry for the Environment. New Zealand's Report on Demonstrable Progress under the Kyoto Protocol. Available at <<http://unfccc.int/resource/docs/dpr/nzl1.pdf>>.

The 2006 GHG inventory submission of New Zealand. Available at <unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/3734.php>.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Helen Plume, Senior Policy Officer, Climate Change International Programme, Ministry for the Environment. The ERT also received additional information from New Zealand, which included the 2006 Net Position Report (available at <<http://www.climatechange.govt.nz/resources/reports/projected-balance-emissions-jun06/index.html>>), New Zealand's initial report under the Kyoto Protocol (available at <http://unfccc.int/national_reports/initial_reports_under_the_kyoto_protocol/items/3765.php>) and New Zealand's 2006 Climate Change Solutions report (available at <www.climatechange.govt.nz/resources/reports/climate-change-solutions-jun06/climate-change-solutions-jun06.pdf>).

Annex II**Acronyms and abbreviations**

CDM	clean development mechanism	LULUCF	land use, land-use change and forestry
CH ₄	methane	Mg	megagram (1 Mg = 1 tonne)
CO ₂	carbon dioxide	mg	milligram (1,000 mg = 1 gram)
CO ₂ eq	carbon dioxide equivalent	Mtoe	millions of tonnes of oil equivalent
CRF	common reporting format	N ₂ O	nitrous oxide
EC	European Community	NC3	third national communication
ERT	expert review team	NC4	fourth national communication
ETS	emissions trading scheme	NGO	non-governmental organization
EU	European Union	NIR	national inventory report
F-gas	fluorinated gas	NIWA	National Institute of Water and Atmospheric Research
GCOS	Global Climate Observing System	NZD	New Zealand dollar
GDP	gross domestic product	OECD	Organisation for Economic Co-operation and Development
GEF	Global Environment Facility	PFCs	perfluorocarbons
GHG	greenhouse gas; unless indicated otherwise, GHG emissions are the weighted sum of CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs and SF ₆ without GHG emissions and removals from LULUCF	PJ	petajoule PPPpurchasing power parities
GWP	global warming potential	RDP	report demonstrating progress under the Kyoto Protocol
ha	hectare	RMU	removal unit
HFCs	hydrofluorocarbons	SF ₆	sulphur hexafluoride
IDR	in-depth review	Tg	teragram (1 Tg = 1 million tonnes)
IEA	International Energy Agency	toe	tonnes of oil equivalent
ISO	International Organization for Standardization	TPES	total primary energy supply
kg	kilogram (1 kg = 1 thousand grams)	UNFCCC	United Nations Framework Convention on Climate Change
kWh	kilowatt hour	USD	US dollar
JI	joint implementation		
