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EXECUTIVE SUMMARY OF THE
NATIONAL COMMUNICATION OF

NEW ZEALAND

submitted under Articles 4 and 12 of the
United Nations Framework Convention on Climate Change

In accordance with decision 9/2 of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC), the interim secretariat is to make available, in the official languages of the United Nations, the executive summaries of the national communications submitted by Annex I Parties.

Note: Executive summaries of national communications issued prior to the first session of the Conference of the Parties bear the symbol A/AC.237/NC/___.

Copies of the national communication of New Zealand can be obtained from:

Ministry for the Environment
P.O. Box 10362
Wellington
Fax No. (64 4) 471 0195

1. Global climate change is regarded as a serious concern by the New Zealand Government. New Zealand began its response to climate change in 1988 with the establishment of the New Zealand Climate Change Programme. The Government's policy responses have since been brought together under the Comprehensive Strategy on Climate Change which aims to address sources and sinks of all greenhouse gases. The Government's current domestic target, consistent with the Framework Convention on Climate Change (FCCC), is to return net anthropogenic emissions of carbon dioxide (CO_2) to their 1990 level by 2000, and to maintain them at that level beyond the turn of the century. New Zealand retains its ultimate objective of reducing net carbon dioxide emissions to 20 per cent below their 1990 levels, subject to certain conditions, including cost-effectiveness, not reducing our competitive advantage in international trade, and having a net benefit to New Zealand society.

2. This first Framework Convention on Climate Change (FCCC) communication indicates that New Zealand is already well on track to achieve both these objectives. It also demonstrates that we expect to achieve a reduction in methane (CH_4) emissions of up to 8 per cent and stabilisation at least of perfluorocarbon (PFC) emissions. Given uncertainties in estimates of nitrous oxide (N_2O), we are unable at present to calculate trends in emissions of that gas. Our efforts are therefore fully consistent with FCCC provisions and goals, including those for Annex 1 Parties. New Zealand is also fully meeting its obligations as an Annex II Party in respect to finance.

Emissions and sinks

3. Overall, New Zealand's net emissions of greenhouse gases are declining **(see figure 2.1, page 7 of New Zealand's first national communication)**. Net emissions of carbon dioxide will be 50-59 per cent below 1990 levels in 2000. Methane emissions will also be below 1990 levels by 2000 and emissions of perfluorocarbons (PFCs) will be stable. Although there is considerable uncertainty concerning nitrous oxide emissions these are not expected to rise over the decade.

4. In 1990 New Zealand emitted 25 530 gigagrams (Gg) (or 25.5 million tonnes) of carbon dioxide. The combustion and transformation of fossil fuels accounted for 90 per cent of these emissions (22 769 Gg). The remainder was made up of carbon dioxide emissions from industrial processes.

5. The largest source of carbon dioxide emissions in New Zealand is the transport sector which accounted for 34 per cent of the total carbon dioxide emissions in 1990. (This estimate uses IPCC methodology; transport accounts for over 40 per cent using Ministry of Commerce methodology). Electricity generation and other transformation activities (including gas used in the petrochemicals industry) accounted for 27 per cent of the total. Carbon dioxide emissions from industrial processes contributed 10 per cent of the total, with fuel combustion in the industrial, commercial/industrial and agriculture/forestry sectors accounting for 17 per

cent, 5 per cent, and 4 per cent of the total respectively. The remaining emissions (less than 4 per cent) came from the residential sector, fugitive fuel, and other sources.

6. Oil contributed around 52 per cent of total energy sector carbon dioxide emissions, with the main source, the transport sector, accounting for 72 per cent of the emissions. Gas and coal accounted for 34 per cent and 14 per cent respectively.

7. Forestry absorption of carbon dioxide was estimated to be 16716 Gg in 1990. This figure takes account of an estimated 1255 Gg of carbon dioxide that was emitted through forest clearing and fires.

8. Agriculture is New Zealand's main source of methane. Ruminants themselves accounted for around 71 per cent of total methane emissions of 2112 Gg. Landfills, other waste management systems, and fossil fuel sources (mainly from leakages and fuel combustion) made up the remainder.

9. The agricultural sector was also the main source of nitrous oxide emissions. Between 1 and 37 Gg of nitrous oxide was estimated to have been emitted from agricultural soils. Fossil fuel combustion was responsible for a further 7 Gg. Total emissions of nitrogen oxides (NO_x) are estimated to have been around 145 Gg in 1990, with the major source being the transport sector. Practically all emissions of nitrogen oxides were related to fuel combustion activities. It is estimated that New Zealand also emitted 0.1 Gg of perfluorocarbons (PFCs) in 1990. In the same year New Zealand imported less than 20 kg of HFC-134a and approximately 120 tonnes of HFC-152a.

10. Table 2.1 below summarises emissions and absorption of the main greenhouse gases in New Zealand in 1990.

Greenhouse Gas Source and Sink Categories	**CO_2**	**CH_4**	**N_2O**	**NOx**
Total (Net) National Emission	*(All figures in Gg)*			
1. All energy (Fuel Combustion + Fugitive)	23 040	61	7.5	145
2. Industrial Processes	2 490			
3. Agriculture		1 618	1-37	
4. Land Use Change and Forestry	-16 716			1
5. Waste		433	1	

Table 2.1 Summary of 1990 New Zealand greenhouse gas emissions and absorptions. Source: Ministry for the Environment

Policy measures and their effect on future emissions

11. It is expected that in the absence of policy measures New Zealand's carbon dioxide emissions would have risen by around 18-22 per cent and 35-40 per cent over 1990 levels by 2000 and 2005 respectively under the modelling assumptions detailed in Chapter 7 **(see figure 2.2, page 9 of New Zealand's first national communication)**. Within these "business-as-usual" (BAU) assumptions it is projected that the share of emissions among sectors would have remained fairly static over the outlook period.

12. Although New Zealand's gross emissions of carbon dioxide are expected to grow, it is important to recognise that the current emission profile is relatively low because of the significant contribution of renewables to the energy mix. Renewable energy contributes about 75 per cent of the country's electricity needs. While there is scope to develop further renewable energy capacity, particularly wind power, predicted future energy requirements mean some increase in power generation from fossil fuels is necessary. Nuclear power is not an option.

13. The New Zealand Government has introduced a number of policy measures which are expected to limit carbon dioxide emissions. These include:

- Use of the Resource Management Act 1991 (RMA) to consider carbon dioxide emissions in plans, policy statements, and resource use consents;

- Legislative and regulatory reform in the energy sector encouraging more competitive gas and electricity markets;

- The Energy Efficiency Strategy -- a range of measures to facilitate the uptake of cost-effective energy efficient practices and technologies, and to help overcome barriers to the development of economically viable renewable energy resources;

- Cooperative energy efficiency programmes between the Energy Efficiency and Conservation Authority (EECA) and industrial and commercial firms, and between EECA and public sector organisations such as schools, hospitals, and departments, to improve energy use in these sectors;

- Renewable energy measures and the removal of barriers to encourage greater uptake of renewable sources of energy, particularly wind and biomass;

- Voluntary agreements with industry to reduce carbon dioxide emissions;

- Specific transport sector measures including taking carbon dioxide into account in regional transport strategies and road funding, speed limit enforcement, and driver education.

In total the measures described above are expected to reduce growth in carbon dioxide emissions by around 20 per cent of the "business-as-usual" growth by 2000. In addition, the Government has announced a further measure:

- The introduction of a low-level carbon charge in 1997 if at mid-1997 it is assessed that the reduction in emissions is not on track to achieve the specified target level by 2000.

14. The Government has decided that the emission reduction target which will determine whether or not a carbon charge is to be introduced is, for any gross domestic product (GDP) growth rate, that level which results in emission reductions contributing 20 per cent, and sink absorption contributing 80 per cent, towards stabilisation of emissions at 1990 levels.

15. The target reduction corresponds to emissions growth of 14.2 per cent above 1990 carbon dioxide emission levels should GDP growth average 2 per cent; and if GDP growth averages 3 per cent, a target of emissions growth of no more than 17.3 per cent above 1990 levels.

Measures to increase carbon dioxide sinks

16. In 2000, New Zealand's planted forests are projected to remove 25 519 Gg of carbon dioxide from the atmosphere. Carbon stored in natural and planted forests in New Zealand is at least 100 times greater than the net annual carbon absorption level. The forests are therefore a substantial carbon reservoir as well as a significant carbon sink. In 1994, the new forest planting could reach 135 000 hectares. It is expected that on average 100 000 hectares of new forest will be planted each year at least until 2005. The projections estimate (using methodology similar to that of the Intergovernmental Panel on Climate Change (IPCC)) the net amount of sequestration which will take place 2000.

Measures to limit methane emissions

17. In addition the Government also expects to limit methane emissions. It is not yet possible to quantify the outcome of a research programme investigating the potential for lowering ruminant methane emissions through manipulation of enteric bacteria. Methane emissions from livestock in 2000 are expected to be 1425 Gg, about 8 per cent below 1990 levels, and methane emissions from landfills are expected to be at or below 1990 levels in 2000.

Adaptation

18. Most adaptation measures are being taken by local authorities. At present these have concentrated on coastal policy and natural hazard mitigation.

Finance and technology

19. New Zealand has agreed to contribute NZ$10.4 million (SDR 4 million) for the 1994-1996 replenishment to the Global Environment Facility (GEF). Roughly half of this amount is an assessed share. The remainder is a supplementary contribution.
New Zealand is also making an ongoing contribution to mitigation and adaptation work through its Official Development Assistance (ODA) programme. In 1993-1994, ODA expenditure on such activities through bilateral, regional, and other multilateral channels was in excess of NZ$ 8.5 million.

Research

20. New Zealand takes its responsibilities for research and monitoring related to climate change very seriously. A National Science Strategy Committee on Climate Change (NSSCCC) has been appointed by government to provide advice and coordination on climate change science issues. Climate change research also has priority research theme status for funding from the Public Good Science Fund. National expenditure on climate change research within Crown Research Institutes (CRIs) and universities in the 1993-1994 financial year is estimated as NZ$14,100,000 (US$8,200,000).

Education, training, and public participation

21. The Government has produced material on climate change for the general public, schools, and specialised audiences. There have been opportunities for public participation in the development of policy and during resource consent processes.

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