THE PACIFIC INSTITUTE OF RESOURCE MANAGEMENT
PO Box 12-125, Wellington, New Zealand.
Phone: +64 4 9394553 E-mail: pirmeditor@paradise.net.nz
Publishers of *Pacific Ecologist* www.pacificecologist.org ;
www.pirm.org.nz

30 March 2007

Climate Change Consultation
Ministry for the Environment;
Ministry of Economic Development;
Energy Efficiency & Conservation Authority;
Ministry of Agriculture and Forestry
Climatechange@mfe.govt.nz ;
nzes@med.govt.nz ; feedback@eeca.govt.nz ; transitionalmeasures@med.govt.nz

SUBMISSION ON GOVERNMENT CLIMATE CHANGE POLICIES

This submission is in response to five government papers on climate change:

1 Measures to Reduce Greenhouse Gas Emissions in New Zealand Post-2012 (Ministry for the Environment)

2 Transitional Measures to Reduce New Zealand Greenhouse Gas Emissions Prior to 2012 (Ministry of Economic Development)

3 Draft New Zealand Energy Strategy to 2050 (Ministry of Economic Development)

4 Draft New Zealand Energy Efficiency and Conservation Strategy (Energy Efficiency and Conservation Authority)

5 Sustainable Land Management and Climate Change (Ministry of Agriculture & Forestry)

The Pacific Institute of Resource Management, (PIRM), publishers of the journal *Pacific Ecologist*, was founded in 1984. We have been making submissions on climate change to government for many years. George Porter, former Wellington architect and city councillor, founded PIRM, with the idea New Zealand could provide an example to the world of a sustainable country, because we live on smaller islands away from the major areas of environmental pollution, such as acid rain.

We therefore applaud Prime Minister, Helen Clark's recent remarks: "*More than any other developed nation, New Zealand needs to go the extra mile to lower greenhouse gas emissions and increase sustainability.*" But New Zealand, although sixth highest per capita emitter in the developed world, has yet to start reducing emissions and is currently 22% above the Kyoto reduction target of a return to 1990 levels. New Zealand therefore needs strong policies and reduction strategies to achieve the Prime Minister's goal of being in the vanguard of sustainability.

1. The core points of this submission are as follows:

1. Explicit targets for emission reductions.
2. A strategy to achieve this target.
3. Independent auditing of progress toward the target.
4. Guaranteed measurable absolute emission reductions.
5. Establishment of Multi-party agreements on Climate Change policy.

6. Policy to be based on the global internationally recognised equity/justice principles of equal per capita emission allocations, providing a framework with targets for continuing climate stabilisation beyond 2012 measures.
7. Funding for a larger global adaptation fund to assist developing countries who have contributed little to global warming to help them achieve the Millennium Development Goals of poverty reduction and sustainable development.
8. Reservations surrounding market mechanisms.
9. Importance of early action to prevent emissions rising to dangerous levels by 2035 as noted in Stern report, June 2006.
10. Reservations about carbon 'sinks'.
11. The need to consider embedded energy and energy needs as part of the policy.
12. Acknowledgement of limits to growth.

Emissions Reduction Targets

2. Projections arising from a number of studies and usefully summarised in the Stern Review, indicate there is a significant risk of severe environmental, economic and social consequences if the average global temperature exceeds 2 degrees Celsius above pre-industrial levels, a temperature that is projected with a high degree of certainty to occur if the atmospheric concentration of greenhouse gases reaches 500ppmCO2e. At this gas concentration there is also a significant risk of a 3-degree temperature rise, a level that will have extreme global consequences. For these reasons, the greenhouse gas reduction policy adopted by New Zealand must establish a target of 500ppmCO2e that cannot be exceeded and an aspirational target of 450ppmCO2e. These targets should be respected in any actions taken that affect greenhouse gas emissions and should form the basis of our international advocacy for climate change mitigation.

Emissions Reduction Strategy

3. Targets are of little value without a strategy for their achievement including intermediate goals and a timeframe. The measures suggested within the various discussion papers relating to climate change mitigation, while individually valuable, do not amount to such a strategy. The proposals emphasise processes but without a strategy, there is a danger the aims will be obscured. As well as description of actions to reduce emissions***, a strategy needs to be developed that quantifies the expected effects of each measure and demonstrates that in sum they will achieve the target.*** If there is no triggering of an abrupt climate change mechanism such as release of oceanic or permafrost gases or collapse of natural carbon sequestration, climate modelling provides a time-course for global emission reduction that would lead to stabilisation below the target greenhouse gas concentration limit. This time-course needs to be incorporated in the strategy.

4. Because an effective emissions reduction policy needs to operate over decades, it must be insulated from political interference. Multi-party agreements offer a means to ensure this.

Emissions Auditing

5. An explicit strategy also requires regular and exacting assessment of progress toward the target. An audit programme – independent of corporate or political manipulation - needs to form part of the practice of the strategy and must include robust methodology for assessment or preferably measurement of emissions.

Absolute Emissions Reductions

6. Any programme to address climate change must ensure emissions reductions are measured as an absolute rather than relative quantity.

7. The discussion papers include several things that would work against absolute emissions reduction. One

in particular is the concept of emissions intensity – emissions per unit of economic activity/output. Despite improved emissions intensity, if there is a significant increase in output, efficiency gains will be overwhelmed and actual emissions will increase. More economical vehicles may not reduce emissions if vehicle numbers and/or distances travelled increase. This important principle of the limitations that exist to growth cannot be ignored. ***Emissions intensity may be a useful measure for individual enterprises but should not be part of national emissions accounting.***

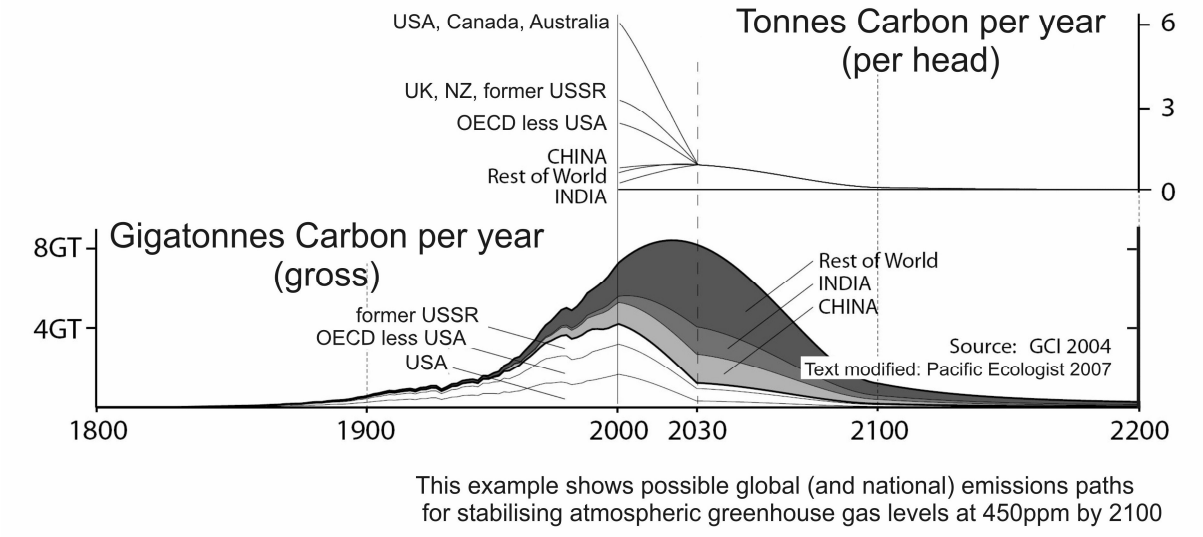
8. The related paper *"Powering Our Future"* graphically illustrates impressive appearing emissions reduction in the energy sector. However, these are presented in comparison with business-as-usual and show in the best case scenario only returns to 1990 emission levels. As a general principle, 'business-as-usual' should not be used to provide a baseline in any comparison of effects over time. Comparisons with an upwardly shifting baseline are misleading. They also involve assumptions about future behaviour that cannot be tested and, if applied to a system that rewards emission reduction, encourage the misrepresentation of intentions.

Global plan for equitable climate stabilisation

9. The equity principle requires all of humanity to have equal access to the atmospheric commons. As developed countries have contributed excessively to the greenhouse gas burden as a consequence of historical emissions, and have grown rich while being unaccountable for their emissions impacts, they have an ethical obligation to make proportionately greater reductions in emissions, sufficient to allow those in developing nations to increase emissions to a population-based allowance, consistent with sustainable total global emissions. The concept of Contraction and Convergence, together with intergenerational equity, must underpin international agreements for climate change mitigation. Contraction & Convergence, as a viable policy has been worked on since 1990 by the Global Commons Institute in the UK and has been the official position of the African Group of Nations at climate conference negotiations for over a decade. It has the support of a growing list of organisations. Contraction and Convergence provides a framework with targets and a timetable by which total global emissions of greenhouse gases are reduced to a safe level. Voluntary agreements and agreements that include only some of the world's nations will not solve the climate change problem.

Although New Zealand has made only minor contributions to the global greenhouse gas load through industrial emissions, it has made a significant contribution from the effects of massive historical deforestation. This, as well as our high global ranking on per capita emissions levels, is the moral basis of our national obligation.

10. To meet the threat of global warming adequately will require an unprecedented degree of global cooperation, commitment and a transparent, just, equitable framework. The Contraction and Convergence concept is such a plan and allows a transition period of 20 to 30 years for developed countries to contract their emissions from the status quo of inequity to one of equity. The figure below shows how Contraction and Convergence would operate.



This example shows possible global (and national) emissions paths for stabilising atmospheric greenhouse gas levels at 450ppm by 2100

11. The emissions pathway leading to a sustainable CO_2 level is defined by the area under the whole curve. This sets the constraints on the climate negotiations over time and the rates for each country. In this example a ceiling of 450 parts per million atmospheric CO_2 equivalent is set, giving rise to a future global emissions "budget," that contracts yearly to near zero by 2080 keeping concentrations within the "safe" ppm ceiling. The tradeable shares in this future budget are agreed as "one person, one share," globally, but moderated in a transition period of 20-30 years, to ease the transition for developed countries to converge to the global average of equal per capita shares.

12. This convergence plan makes it possible for poor countries, e.g. Africa and Pacific Islands, already hit by global warming effects, to finance their defence against climate change and their clean, sustainable development, by trading their excess shares, with rich countries. Rich countries can use their capital to finance clean renewable technology and replace their polluting development.

13. The discussion paper contains so much expressed uncertainty about future international agreements and conditionality around our involvement that such commitment seems lacking. As a privileged developed nation with recently expressed aspirations to be a world leader in addressing climate change, our commitment to the international effort should be explicit.

Responsibility for neighbours in the Pacific, Millennium Development Goals etc

14. Consideration of the fate of our neighbours in Pacific Island societies, if emissions go unchecked, should galvanise the New Zealand government, and New Zealanders into strong emission reduction efforts. Otherwise, Pacific Islanders will continue to suffer the worst effects of global warming, more severe cyclones, king tides, etc, causing erosion to their exposed coastlines and water and food resources. They even stand to lose their entire countries, if we don't reduce our ever increasing rich-country emissions.

15. Pacific Islanders have contributed negligibly to global warming, many live in poverty and will be further disadvantaged and impoverished with global warming emissions continuing to rise in the atmosphere to date. Morally, New Zealand is obliged to cut back and strongly reduce its emission. We are also morally obliged to support the Millennium Development Goals, by providing increased funds to assist Pacific Islands to adapt to the dangers of global warming effects. New Zealand will also have to be on standby to accept potentially many thousands if not millions of Pacific Islanders, should their islands be submerged by rising sea-levels.

16. We urge commitment to international cap and trade systems – The Kyoto Protocol We must ensure our national programme is consistent with participation in this.

Government Responsibility
17. The Government should retain responsibility for emissions under international protocols rather than devolving responsibility to industry and agriculture. The stringent requirements of the National Greenhouse Gas Inventory are difficult for governments to meet and still more difficult for private sector groups with devolved responsibilities. There will be significant compliance costs and, unless New Zealand develops particular skill in measurements of greenhouse gasses, these are likely to be paid to overseas agencies.

Market Mechanisms
18. We have reservations about the ability of market mechanisms under either emissions trading or carbon charges to realise the aims of absolute emissions reduction to the level required. While such mechanisms may be efficient in producing small changes at the margin they may slow or deter the introduction of other measures required for the obligatory large reductions.

19. While development of an internal market and integration with global emissions trading is supported, significant action independent of trading activity is essential. This matter is too critical to be left to the market alone. Interventions to stimulate the effectiveness of the market at reducing emissions are likely to negate its economic efficiency. There are residual concerns that, despite the demonstrated ability of small scale trading to function, large scale operation of a market with so many features that are contrary to standard commodity markets, and in which the commodity itself is an abstraction, may prove unworkable. There are also concerns that speculation and the development of derivatives such as futures trading may corrupt the intent of the market and lead to financial imperatives taking precedence over those of emission reduction. Most significantly, there appears to be an appreciable risk of emission credit shortfall if market mechanisms are 'pushed' to try and achieve large emission reductions.

20. For these reasons we favour the use of National Policy Statements and Standards under the Resource Management Act as the means to address the many and varied factors that contribute to climate change.

Early Action
21. If large reductions are not made in emissions, atmospheric greenhouse gas concentrations are expected to be double pre-industrial levels as early as 2035. This would be a catastrophic outcome and clearly illustrates the need for urgency in actions to avert this crisis. It has been widely suggested that we must be established on a pathway toward large emissions reductions within the next decade.

22. The pattern of predicted climate response to emissions reduction indicates that benefits increase the earlier that reductions can be achieved. In addition, earlier reductions reduce the risks of abrupt irreversible climate change. From this it follows that we should plan for early stringency ('frontloading') of climate mitigation measures. If the more difficult/expensive actions are left for later there is a significant risk that the costs and other imperatives of adaptation will predominate over emission reduction efforts. The economic model which suggests that as the marginal damages increase with the increasing stock of greenhouse gases in the atmosphere, abatement effort at the margin will become more affordable does not offer a very rosy future. The national economy is robust and we should take advantage of this to build insurance against future adverse events. It may never again be so affordable to make major structural changes in our economy and infrastructure. There is a case for replacing the 'lowest cost' priority with 'most effective'.

23. There are some practical matters that flow from this. Rather than spending money on building increased capacity into our transport infrastructure, money should be spent on climate-proofing it. Action should be taken in advance of the First Commitment Period to direct funding toward emissions reduction, action which will return a dividend in reduced emissions to take responsibility for during the Period. A novel source of funds for this is probably necessary and could be afforded by early introduction of carbon charging or an increase in GST, the latter reflecting the broad responsibility that must be taken for climate

change mitigation as well as acknowledging the contribution of almost all goods and services to emissions.

Carbon Sinks

24. We have reservations about the validity of many of the assumptions about biological carbon sequestration that underpin "sink" credits in a variety of emission trading schemes including the Kyoto Protocol. Scientific understanding of the carbon cycle is very limited and verifying data against which to test theories and models of the Cycle is scant. It has required over a century of continuous monitoring with reliable standardised instrumentation spread around the entire planet to confirm the existence of global warming and allow for some predictions of the behaviour of the global climate system.

25. The data on Carbon Cycle activity is miniscule in comparison. Recent and ongoing observations and experiments have indicated great variability in rates of nett carbon capture by plants dependent on climatic and other variables. The situation becomes even less predictable when the flows of carbon between the atmosphere and the entire community of plants, animals and microorganisms that inhabit the surface of the planet are considered. Hydrological and geological processes in the soil affect the biological participants in the Carbon Cycle and can independently result in large carbon fluxes into and out of ecosystems. Because of this large uncertainty about the ability of forest ecosystems to sequester carbon with any permanence and the appreciable risk that they may become nett carbon emitters within the time horizons of an emissions reduction plan, we believe that it is untenable to regard forests as functional carbon sinks and thus emission 'offsets' in any emission accounting system. Counting forests as credits in such a system may lead to less stringent efforts at absolute emission reduction as has occurred in New Zealand with the mistaken assumption that we had sufficient forest credits to offset our growth in emissions during the First Commitment Period of the Kyoto Protocol.

26. We advocate that instead there should be separate emission and sequestration accounts and that sink credits should not be used as offsets against emission liabilities at least until there is much more scientific certainty about the Carbon Cycle and much more extensive measurement of carbon flows and verification of carbon stores.

27. Forest is nonetheless of great value in Climate Change mitigation, both for the ecosystem services of rainfall and temperature moderation, runoff and erosion control and as a carbon-neutral structural material and energy feedstock. Both avoidance of deforestation and active encouragement of afforestation should be part of national and international strategies. New Zealand should strongly advocate for the inclusion of deforestation avoidance credits to be included in post-2012 agreements as a means of retaining important carbon reservoirs and their biodiversity and as a method of transferring development funds to impoverished nations.

Embedded Energy

28. As a developed nation, New Zealand has global obligations that arise from our contribution to existing levels of greenhouse gases. Historical emissions also have present significance in the sense that many of the products resulting from distant and recent historical emissions remain extant. This is the 'embedded energy' component in the material goods that surround us and represents, especially in the case of buildings and civil engineering constructions, some very sizeable quantities of past emissions. We will pay the ongoing costs of having made these 'sunk emissions'. They therefore warrant consideration in the emissions accounting system and may affect decisions on infrastructure and equipment replacement. If we do not adequately consider the greenhouse gas contribution that is represented by existing material items and thoughtlessly dispose of them, we will be suffering climate change consequences of those past emissions for nothing.

29. Embedded energy accounting should be a major element of national energy policy including the NEECS. It is notably absent from all of the relevant discussion papers.

Transport sustainability

30. * The decline of oil with rundown of fossil fuel petroleum resources, shows we are reaching limits to

the unrestrained use of finite Earth resources, and the urgent need to conserve and use energy resources wisely. Public transport needs to be better funded and upgraded, and reduction in production and use of cars, would bring about wiser use of dwindling fossil fuel reserves and also reduce warming emissions from private car use.

Limits to Growth

31. The relationship between economics and climate change has been brought sharply into focus by the Stern Review. The Stern Review characterises climate change as "the greatest and widest-ranging market failure ever seen." The implication is that the introduction of measures to improve price signalling will induce changes at the margin that in sum will result in emissions reduction sufficient to avoid the highest risks of environmental catastrophe. Internalising the costs of greenhouse gas emissions is predicted to have a relatively minor negative effect on economic growth. This negative effect is considered to be affordable, especially when the future negative impacts of unabated climate change are considered. The 'affordable' judgement is however based upon more risky greenhouse gas levels of 550ppmCO_2e and assumes the employment of the unproven, risky Carbon Capture and Sequestration technology.

32. The Review asserts that climate change mitigation and economic growth are compatible. This compatibility is predicated upon the further growth of low-carbon services, ignoring the fact that this depends to a considerable extent on the international outsourcing of goods whereby emissions occur by proxy. It also ignores a point of which New Zealand is acutely aware: the unavoidable greenhouse gas emissions that arise from agriculture.

33. The unpalatable truth is that climate change rather than being a manifestation of market failure is a graphic demonstration of the limits to growth. The climate is deteriorating because humanity has exceeded the capacity of the planet to sustain our activities. Our command of technology and the growing financial means to exercise it has allowed us to push the natural systems that produce our food and provide other critically important ecological services well beyond their sustainable limits. This fact must not only be acknowledged, it must inform policy directed at climate change mitigation. The inevitable conclusion is that, in order to address the root causes of climate change, we will need to not just modify but reduce our activities in areas that are most detrimental to climatic stability.

34. This fact is entirely missing from the discussion documents related to climate change. Rather than aiming to reduce growth in energy demand and direct emissions we need to arrest such growth and aim for absolute reductions. Acknowledging that there is no practical, cost-effective means to reduce livestock methane emissions except by reducing stock numbers or production levels should lead to the conclusion that we must in fact reduce these. The greatest danger to our civilisation and the planetary ecosystem is to allow predominance of the imperatives of an abstract financial system over those of the global environment. Unless there is acceptance of limits to growth our efforts to mitigate climate change will be restricted to small scale marginal actions, insufficient to prevent changes of unacceptable severity. We will remain dependent on a hope that new technology will reduce the impact of our activities rather than limiting our activities and using new technology to lessen the social and economic effects of that limitation. This fundamental change in outlook is urgently needed.

Future Consultation

35. PIRM wishes to participate in any future consultation or select committee hearings on these matters.

Yours sincerely

Dr Cliff Mason – home 567.7123 cliff.mason@huttvalleydhb.org.nz

Kay Weir - phone work 04 9394553. pirmeditor@paradise.net.nz

PIRM, PO Box 12125, phone 04 9394553, Wellington - pirmeditor@paradise.net.nz