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31 July 2009

Right Honourable Nick Smith
Minister for Climate Change Issues
PO Box 10362
WELLINGTON

Dear Dr Smith,

This written submission is made on behalf of the Pacific Institute of Resource Management (**PIRM**). It follows on from the submission made orally at the Christchurch public meeting on 8th July and expands upon and adds to the points made at that time.

1. A target for emissions reduction for 2020 of 40% below 1990 levels.

There is consensus building around 350ppm CO₂ equivalent as a maximum level of greenhouse gases at which global ecosystems can persist without significant damage to their constitution and function. As present atmospheric levels exceed this value, measures to address climate change must aim to accommodate the overshoot to which we are already committed and to reverse the nett flux of gases in order to return to the target level of 350ppm as soon as possible.

The trajectories of atmospheric greenhouse gas levels and temperature that might follow effective mitigation of emissions are critically dependent on both the rate of reduction in emissions and the alacrity with which reduction measures are introduced. This is well illustrated in the leading article of the April 2009 issue of the journal "Nature." This article concluded that emissions reduction of at least 3% per year, introduced immediately and ongoing, is required to have an even chance of the increase in global average temperatures not exceeding two degrees. This rate of reduction would result in peak emissions around the year 2015 as reductions negate the present growth in emissions with the innate lag in global temperature resulting in the peak temperature occurring around 2065. After several centuries, this pattern of reductions could lead to stabilisation of greenhouse gas concentration around 350ppm, the level required to sustain global ecosystems. Any delay in introducing the measures results, at the same assumed rate of emissions reduction, in significant increases in both peak global average temperature and in the time before stable equilibrium is achieved.

This minimum requirement to avoid catastrophic climate change would still leave a period of centuries during which major adverse effects of increased global average temperatures including compromise of water and food supplies, damage to important ecosystems such as coral reefs and tropical rainforest, accelerated coastal erosion, detrimental effects on human health and increased frequency and intensity of extreme weather events, would be suffered. It is not sufficient to plan only to avoid total catastrophe. Rather the target should be to reduce the peak global temperature and the duration of elevated greenhouse gases as much as possible. Consensus is building internationally and within New Zealand for emissions to be reduced by 40% below 1990 levels by 2020. The United Kingdom has already set itself a target near this level. As a nation with widely held concerns about the environment, New Zealand must be among the global leaders in taking action to mitigate climate change.

2. This target is affordable

In the Public Meetings around New Zealand, you have repeatedly stated that those who wanted a target of 40% must make the cost of this clear to other New Zealanders. The recent report by The New Zealand Institute for Economic Research (NZIER) and Infometrics has now achieved this. The report shows that, with a worst case, where the international cost of carbon is \$200 dollars per tonne in 2020, New Zealanders would, on average be 19% more wealthy than at present if we were to have an international commitment of 40% reduction from 1990 emission levels. The comparison is made with a 'business as usual' case in which no measures at all are taken to mitigate climate change when New Zealanders would be 27% more wealthy. It is plainly evident from the projections for the effects of climate change on matters of daily life and of planetary systems that to be 8% less wealthy would be unnoticed in a context of verifiable improvement in prospects for climate change mitigation.

3. Limitations on use of sequestration credits

PIRM believes New Zealand has an obligation to achieve genuine reductions in absolute greenhouse gas emissions. Our present record is one of continuing increases in emissions especially from the transport and energy sectors as illustrated in the recent report by the Ministry of Economic Development. Despite emissions having increased by around 20% since 1990, our nett emissions accounted under Kyoto Protocol rules appear likely to be near 1990 levels as a result of carbon sequestration in Kyoto-compliant forests. New afforestation seems almost the only significant measure proposed to reduce our future net emissions despite the admission it is only a short-term measure with future forest harvesting resulting in large emissions at that time.

As noted (**in 1.above**), deferral of emission reduction is detrimental to climate change mitigation. In addition, forestry cannot provide certainty of carbon sequestration in changing climatic conditions and with the risks of destruction by fire, insect damage, windthrow and disease. Although predicted effects of climate change on sequestration by forests in temperate latitudes such as New Zealand falls in a range between -10% and +30%, this is subject to further uncertainty depending on location, soils and topography among other matters. Although there is some knowledge of carbon uptake by trees, the carbon flux through the entire forest ecosystem including soils is much more uncertain and again prone to major disturbance from climatic and weather events. For reasons of the uncertain long-term efficacy of forestry and other land use changes in climate change mitigation and because there seems a risk that, as presently obtains, emission reduction credits may be used to offset an increase in actual greenhouse gas emissions, PIRM believes there should be limits on the degree to which they are used to achieve our stated reduction target.

We suggest sequestration should not be used to account for more than 20% of our nett emissions reductions. This is a sizeable figure but much less than the present situation where sequestration has accounted for nearly 100% of the reduction target. This exploitation of a technicality to allow actual emissions to increase while being able to claim carbon neutrality offends against the principle of developed nation responsibility for genuine reductions. If forest sequestration is considered in isolation, it would take greatly increased afforestation and long-term maintenance of vast forested areas to compensate for the emissions of historical deforestation and other land use changes that have accompanied our development. Until this debt is repaid, sequestration "credits" are only nominal.

Despite the above, there is a great need to encourage forestry as a mitigation measure for the use of the resultant timber crop as an energy source, structural material and industrial feedstock. Recent work in this country has quantified the lifetime advantage from an emissions viewpoint of timber buildings over steel and concrete and widespread substitution of timber for these other materials could make a significant contribution to reducing our total emissions. There is great potential for timber to be both used directly as a source of heat for domestic and industrial purposes and to be converted to liquid or gaseous biofuels. This could make a large contribution to mitigating our large and growing transport-sector emissions. It can also provide biofuel that is verifiably sustainably produced in stark contrast to

the situation with imported biofuel from 3rd world countries, from industrial agrofuel plantations which is exacerbating climate change and taking land and resources away from poor people in third world countries, already under climate change stresses. In addition to these end uses of wood, during production forests provide important ecosystem services and may indeed, by both photosynthesis and prevention of erosion, genuinely sequester carbon within the forest-soil-water ecosystem.

We urge you to take the proposal for 40% emission reductions by 2020 to the Copenhagen meeting. Achieving the target will not be easy and will require all available measures – locally produced sustainable biofuels and other alternative energy sources, encouraged by feed-in tariffs and other incentives to distributed generation, increased public transport which would provide more jobs at a time when this is needed, alterations to building codes, to mandate efficient use of energy and materials and a host of other practical and legislative measures.

Critical time in our history

This is a critical time in human and planetary history. As a South Pacific nation, New Zealand has a particular human rights responsibility with our neighbours in the Pacific Islands, who have contributed negligibly to the problem, being under the direst threat from climate change. Ambassador Marlene Moses of Nauru, representing the Pacific Small Island Developing States, (PSIDS) on 3 June 2009, introducing a resolution to the UN adopted by the General Assembly said: *“We stand here at a historic moment. This is both the first resolution for the PSIDS and the first General Assembly resolution on the security implications of climate change.”* Ambassador Moses pointed out her country is the world’s smallest island nation: *“As the rest of the world continues to debate the security implications of climate change, for our peoples the problem is astoundingly real. While some countries may have the resources to mitigate and transfer their people to safety during times of natural disaster, we do not have this luxury. Our citizens literally have nowhere to run. Never before has a UN member state disappeared. Now we are faced with the threat of losing many due to the adverse affects of climate change.”* The Marshall Islands are only two metres, or 6 feet above sea level. Marshall Islands, UN Ambassador said: *“We cannot move our people to higher ground, for there is no mountain.”* Over 60 countries, co-sponsored this resolution, including the Caribbean community who also have acute awareness of the reality of climate change. Unless we wish to become pariahs in the human community, it is very important for New Zealand to significantly reduce our ever increasing emissions. New Zealanders have expressed their wish to play an important part in global solutions to the climate crisis. We depend upon you as our elected representative to make this wish manifest.

Yours sincerely,

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