Climate Change Contribution consultation

Submission to the Ministry of the Environment consultation

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This submission argues that the government should move beyond the 'business as usual' approach to setting a target based on recent policy settings. This is not the right approach for New Zealand in terms of our international reputation, our environment and natural resources, our future safety from natural disasters, and, as this submission will show, our economy. New Zealand must submit a responsible INDC in order to contribute to a global agreement.

This submission gives an overview of the changing context for New Zealand's target, New Zealand's fair share, our mitigation potential, and outlines elements of a supportive policy framework that would support the recommended target. The submission argues for a target of greenhouse gas emissions reductions of 40% below 1990 levels by 2030.

There needs to be transparency and accountability in public consultations. The analysis of consultation meetings and submissions needs to highlight the key recommendations from submitters. In addition, the objective analysis of policy options undertaken by civil servants should be made publicly available, together with the rationale for recommendations. This does not preclude the Minister from choosing a different policy for political reasons, but it makes it clear that such a political choice is being made.

The author has been engaged in international climate change issues for 25 years, including representation as an NGO on the British government delegation to the Earth Summit in 1992 and the NZ government delegation to CoP13 in Bali in 2007, and engagement in other CoPs; leadership of NGOs and coalitions including being former co-Chair of the Global Campaign for Climate Action; research and capacity building on climate change in the Pacific while Executive Director of Oxfam New Zealand 2003-2014, including briefings and publication on climate finance and adaptation; and extensive engagement with the government, business and other stakeholders in New Zealand.

Background and Challenges

This submission makes the case that New Zealand policy on climate change, domestically and internationally, is out of step with the latest research and leading approaches of other governments, researchers, business and civil society. A false paradigm of trade-offs remains dominant in the government's approach, wrongly asserting that action on climate change is an economic burden on the economy, business and households. With supportive government policies and improved economic analysis, this economic trade-off no longer applies.

In addition, the narrow focus on monetary costs alone ignores non-monetary economic costs from climate change impacts, a wide range of non-monetary costs that are important to the New Zealand public and the fulfilment of New Zealand's international obligations and the potential co-benefits that can be realised from the transition to a low emissions society.

This submission will argue that taking far more ambitious action on climate change is in New Zealand's interests:

- As a necessary investment to avoid high future costs, both those currently known and those that are uncertain, in accordance with the Precautionary Principle, including our productive natural resources;
- To minimise negative externalities associated with greenhouse gas emissions, in accordance with the Polluter Pays Principle and sound economics;
- To maintain and hopefully enhance New Zealand's highly valuable international reputation for fairness and sustainability;
- To provide a stable and predictable long term framework to guide public and private investment in infrastructure and economic development and business;
- To enable business to take advantage of opportunities associated with changes in technologies, markets and consumer behaviour;
- To conserve New Zealand's ecological integrity, protection of biodiversity and the amenity value of the environment, all of which enjoy strong public and cross-Party support, in accordance with the UN Convention on Biological Diversity and multilateral environmental agreements which New Zealand has agreed and ratified;
- To protect vulnerable people in poor communities who bear the highest costs and risks of climate impacts, particularly those in our Pacific neighbourhood, also with strong public and cross-Party support, in accordance with the principles of international humanitarian law, human rights agreements and international development assistance undertakings.

The changing climate context

The scientific consensus has narrowed the degree of uncertainty with regard to the causes of anthropogenic climate change, but there remains considerable uncertainty on future impacts. The potential for non-linear, abrupt and catastrophic change cannot be discounted, particularly given the rapid increase in emissions over recent years. A precautionary approach is advisable. Global emissions need to remain within the carbon budget (Fig 1 in the consultation paper).

The changing economic context

The prevailing approach in the policy development around climate change targets in New Zealand is that emissions reductions are a burden on business and the economy and that there is a direct trade-off between economic growth and emissions reductions. This is refuted by evidence and experience of a growing number of economies. A recent report from the World Bank*, Decarbonising Development*, (http://www.worldbank.org/en/news/feature/2015/05/11/decarbonizing-development-zero-carbon-future) calls for urgent action to decarbonise the economy, based on sound planning, getting carbon policies and prices right, and smoothing the transition, including protecting the poor. The report makes the case that the costs of inaction will rise in future and outweigh the costs of action now, a perspective that is not reflected in the assumption of trade-offs in the consultation document and government policy.

This conclusion is supported by the 2014 report from the Global Commission on the Climate and the Economy, *Better Climate, Better Growth* (http://newclimateeconomy.report/). The Global Commission makes the case for better policies to achieve high quality, resilient and inclusive economic growth. These reports, and mounting evidence internationally, do not support the assumption that there are trade-offs inherent in taking action on climate change. A problem for New Zealand government policy-makers is excessively reliance on economic models that are partial, static and out of date.

The changing business context

A number of leading international businesses are now calling for zero net emissions by 2050 (http://track0.org/2015/04/businesses-demand-a-long-term-decarbonisation-goal-from-paris-agreement/). This echoes the call from the Secretary-General of the OECD, Angel Gurría (http://www.oecd.org/env/the-climate-challenge-achieving-zero-emissions.htm) for countries to eliminate emissions from fossil fuels by the second half of this century and achieving zero net emissions by 2050.

In New Zealand, the report *Green Growth: The Opportunities for New Zealand* (http://pureadvantage.org/full-report/) outlines some areas of opportunity for New Zealand business. These examples, and widespread opportunities for business for cost reductions from waste and energy reduction, show that there is no inherent trade-off between climate action and net cost to business.

The changing social context

High inequality within societies, including New Zealand, has been recognised as a problem and climate change policies should aim to reduce inequality, not increase it. Some climate policies can tackle fundamental drivers of inequality, and those solutions should be supported. For example, policies to improve access to public transport, walking and cycling can be beneficial in terms of improved mobility for low income communities as well as reducing New Zealand's transport emissions. Similarly, solar power advances create the potential for lower cost electricity, but low income citizens, particularly those in rented houses, will find it difficult to make the upfront investments without government interventions.

Modelling the Impact and the Government Consultation

The modelling exercises by Infometrics and Landcare were given a central position in the government's consultation paper. As useful as they may be in answering strictly economic issues, Computerised General Equilibrium models have severe limitations when applied to the analysis of externalities that are not represented in the monetised economy. The models rely on restrictive assumptions that largely ignore the changing contexts outlined above.

The models ignore sequestration from the forestry sector and emissions from the agricultural sector, which together are the major drivers of New Zealand's net greenhouse gas emissions. The only changes in emissions are assumed to come from other sectors, and all non-market policies that might represent the most effective means of reducing emissions (eg. regulation of vehicle emissions or investment in public transport) are ignored.

CGE models are based on historical relationships between variables (Input-Output tables from 2006/7) and fail to capture the dramatic changes in solar power cost reductions now and in the future, advances in storage batteries, major shifts in transport use in urban areas. Nor do the models take into account opportunities for business from action on climate change (as shown in the Vivid Economics report for Pure Advantage).

The costs in the modelling ignore the costs of climate change (the world's largest ever market failure according to Sir Nicholas Stern), both economic and non-economic. Economic costs should include economic costs such as the likely damage from climate change related natural disasters, loss of tourism revenue related to loss of New Zealand's biological diversity and scenic value, and the likely costs from loss of New Zealand's international reputation from continued inaction on climate

change. The costs of greenhouse gas emissions are difficult to estimate, but policy should be made on best estimates, rather than no estimates at all. It is better to be approximately right than exactly wrong.

The costs should also include explicit recognition of non-economic costs. These may include the loss of social, spiritual and cultural value associated with biodiversity loss, the suffering of vulnerable people overseas who are likely to bear the brunt of climate change, and the loss of our natural heritage and unique environment for future generations of New Zealanders.

The Inter-governmental Panel on Climate Change Fifth Assessment Report Working Group on Impacts, Adaptation and Vulnerability adopted a narrow interpretation of economic costs and estimated that global warming might cost from 0.2 percent to 2 percent of economic output, if temperatures rise 2.5 degrees Celsius from pre-industrial levels. From New Zealand's emissions reductions it appears that the likely temperature rise will be above this level, so the costs should be included at a level higher than that IPCC-estimated range.

In conclusion, the costings that are the centrepiece of the government's consultation paper are inaccurate and misleading. Even so, it is interesting that the Infometrics CGE modelling estimates the loss of output to New Zealand at 0.1% GDP (a drop from 2.2% to 2.1%), even when there is a 40% reduction from 1990 levels.

A broader analysis of the costs and benefits of climate change would argue for far stronger action to reduce New Zealand's emissions. Once a full costing is undertaken, it is likely that strong action on climate change becomes the preferred economic option, as well as the best option for a range of other reasons. If policies are designed to increase the co-benefits (such as health benefits from warm homes and more walking and cycling) and to support businesses in taking advantage of the opportunities, it is likely that strong action on climate change would result in net benefits to New Zealand society, rather than the net costs shown in the modelling.

Our Fair Share

There are two dimensions to New Zealand's Climate Change Contribution (our 'target'). Firstly the domestic emissions reductions that we need to achieve to contribute towards global action. New Zealand's greenhouse gas emissions are amongst the highest in the OECD at around 17 tonnes per person. Secondly the financial contribution that we are able to make to developing nations to accelerate their transition to a low emissions economy.

Possibly the best current model for allocating responsibility for emissions cuts amongst countries in order to have an acceptable level of confidence of staying within an average global temperature rise of 2°C is the Greenhouse Development Rights Framework (http://www.gdrights.org/calculator/). Depending on the assumptions used in the model, NZ needs to achieve somewhere around 125% reduction from 1990 levels by 2030 (ie. net sequestration of 25% of 1990 emissions level).

The target for New Zealand emissions should be sufficient to meet the aim of achieving zero net emissions by 2050, in line with a growing international agreement to that target for OECD countries. An intermediate target of 40% below 1990 levels by 2030 is consistent with that longer term aim.

Given that our NZ net emissions are around 42% above 1990 levels at present, a domestic target will not be able to achieve the level of emissions reductions required. There needs to also be a commitment in the New Zealand government policy to support and fund a credible mechanism for

emissions reductions by developing countries. The current mechanisms for purchasing overseas credits (Clean Development Mechanism and Joint Implementation) are not credible, given the revelations of a lack of integrity and additionality in the credits. The establishment of a Green Climate Fund is likely to have more integrity in terms of the effective use of climate finance. Whatever the mechanism, New Zealand should be prepared to commit new and additional funds (over and above the level of New Zealand overseas aid).

New Zealand's Mitigation Potential

The following section represents an overview of more detailed analysis of the mitigation potential in the key sectors. The detailed data and projections for each of the sectors has not been published by the government, so the following represents estimates based on research and publicly available data.

Much of the consultation paper, particularly the foreword by the Minister for Climate Change, argues that New Zealand's exceptional circumstances mean that we should adopt a target that is less ambitious than otherwise indicated by a fair share analysis. However, the case can also be made that our circumstances are favourable in terms of achieving zero net emissions by 2050 – for example, the high proportion of renewables in our electricity generating sector is an opportunity to achieve complete decarbonisation well in advance of countries that have high investment in coal-fired power.

There are opportunities in key sectors for New Zealand to substantially reduce emissions and reach a target of 40% reduction for domestic emissions below 1990 levels by 2030. This would mean a reduction in gross emissions from the current level of around 82 Mt to 48 Mt by 2030. Increased sequestration of 15 Mt per annum would mean New Zealand could achieve a net reduction of 40% from 1990 levels by 2030.

The major opportunities for emissions reductions are as follows:

Electricity: Renewable energy is now close to cost competitive with fossil fuel generation for many applications, and forecasts project continuing reductions in the costs of photovoltaic solar power accompanied by reduced costs of power storage at the household or neighbourhood level. The development of smarter grid systems is essential to provide for decentralised power generation. With such investments, it would be feasible for New Zealand to achieve 100% renewable electricity generation by 2030, irrespective of the decision on the closure of the Tiwai Point smelter. This would eliminate emissions of around 5 Mt per annum.

Transport: Ministry of Transport data shows road transport volumes are virtually unchanged in 2009-2013. For projections going forward, improved policy could reduce emissions by four significant drivers of change:

- A price on carbon would stimulate increased sales of fuel efficient vehicles, hybrids and electric vehicles, thereby reducing emissions
- Investment in public transport and walking/cycling infrastructure enabling a modal shift away from road transport
- Future regulations on fuel economy and vehicle emissions, especially the older and larger vehicles, can reduce emissions
- Development of biofuels from wood waste and other cellulose-based sources

Government policies to support an adequate price on carbon, infrastructure for the introduction in electric vehicles, an acceleration of the growth in public transport, walking and cycling and in the reduced emissions from road vehicles all have the potential to significantly reduce the use of fossil fuels for transport. Savings of around 25% by 2030 have been projected as feasible for this analysis, saving around 4 Mt per annum (30% reduction).

Industry, Waste, Other: Drivers of future emissions trends are likely to be the emissions price, substitution of fossil fuels by clean energy, technology improvements improving efficiencies, new business models that provide services to meet consumer needs rather than products, and waste reduction opportunities in the context of progress towards a circular economy. Savings of around 6 Mt have been projected for this analysis (25% reduction).

Agriculture: New Zealand's farmers are amongst the most efficient and adaptable in the world. But our ability to access agricultural markets in future will increasingly depend on their performance on sustainability criteria, not only cost. Retailers in our major markets (most notably the EU) are establishing standards and targets for a range of factors, including emissions, reflecting increasing consumer concern over the impact of the food system on the environment. Higher standards create threats if the farming sector is unwilling to change but huge opportunities for New Zealand to strengthen our leading role if we step up to the challenge of low emissions farming.

Research into agricultural emissions is likely to create significant opportunities for emissions reductions without massive disruptions to farming practices. For example, in April 2015 researchers at the New Zealand Agricultural Greenhouse Gas Mitigation Conference announced that they had identified several promising compounds which could cut livestock emissions in sheep by 30-90%. The safety and efficacy of such methane inhibitors is yet to be proven, but the potential is established. Other changes in the agricultural practices also have the potential to reduce emissions (recent research by Dairy NZ argues for reduced intensification http://theglobaldairy.com/noticias/new-zealand-dairy-success-comes-at-a-price-42297/).

There is no guarantee that methane and nitrous oxide inhibitors will become available within a decade, but the New Zealand INDC should reflect our best estimate of the level of emissions reductions we can achieve, not the level that we can definitely achieve on the basis of currently available technology. There is a high likelihood of significant reductions in agricultural emissions from the use of new technologies over the forthcoming 15 years, and their impact on emissions should be included as part of New Zealand's INDC. Savings of 18 Mt are projected for this analysis (45%).

Forests: The forest sector has a crucial role to play in sequestering carbon. The collapse of the carbon price under the ETS has significantly damaged confidence in carbon pricing as an incentive for retaining land in forests and new afforestation. Current incentives of around $5/tonne amount to less than 2% of forest returns. Long term predictability in returns is crucially important for the forestry sector.

A planting rate of around 100,000 hectares per year has been achieved in the past and, with sufficient incentives, significant planting could be achieved. There are potential co-benefits for the environment from planting of land prone to erosion, and from planting of indigenous forests (although the annual sequestration rate is lower). Such a planting rate would double the rate of sequestration (an additional 15 Mt per annum).

Conclusion: This analysis argues that significant reductions in New Zealand's emissions are possible with the right policy framework. This would mean a sharp departure from policy in recent years that

has weakened the Emissions Trading Scheme so that credits were worth a few cents, allowed net conversion of forest land to other uses, prioritised road building over public transport, continued to promote the use of coal and fossil fuels and called for a doubling of dairy production.

With those policies in place, it is not surprising that Infometrics modelling projected New Zealand's domestic emissions at 24% above 1990 levels by 2030, and any reductions to be bought as credits from overseas. This is unlikely to be acceptable to the international community and should not be acceptable to New Zealanders. We cannot delay the transition to a low emissions pathway any longer.

A Supportive Policy Framework

Deep reductions in emissions will not be possible using a 'business as usual' approach. Improvements in government policy settings will be crucial. The main areas for change are recommended as follows:

- The establishment of a credible and independent Climate Commission (along the lines of the UK structure), able to provide objective information on progress against New Zealand's aims and targets and build cross-Party agreement over a stable policy regime to meet the aim of zero net emissions by 2050
- Legislation to legally establish New Zealand's aim of zero net emissions by 2050 and to ensure that future governments are accountable for progress towards this target
- A stable, sufficient price on emissions to internalise the costs of externalities and drive strategic investment and operational decisions by business. This would best be achieved by replacing the ETS with a simple and transparent carbon charge, but a much improved pricing mechanism could also be achieved through substantial reform of the ETS, for example by the creation of a minimum (rather than maximum) price on emissions
- A stable and sufficient incentive for afforestation
- Public policies to support the transition to a low emissions economy including investment in public transport, electric vehicles, solar power generation and urban infrastructure; public education and support for community and individual action; phasing out of subsidies for coal (through Solid Energy) and oil and gas exploration; and additional support for R&D in low emissions technologies
- Establishment of a collaborative relationship between government, business and key stakeholders to develop a zero net emissions plan
- Commitment to support finance for developing countries to accelerate their emissions reductions, and budgetary allocations

Response to specific questions posed:

1. **Objectives for New Zealand's contribution?**
    - A fair contribution in the light of our current level of emissions and our historical emissions, compared to the average level of emissions globally
    - An ambitious contribution, representing our share of the effort required to maintain global temperature rise below 2°C
    - A contribution that reflects the likely costs to the economy, but also:

- Including likely future costs (including lower rainfall and drought, flooding, storms, disruption to agricultural productions, horticulture, fisheries and other primary production)
- including indirect economic benefits from climate action, such as opportunities for business in a low emissions economy and the enhanced value of our international reputation
- including co-benefits from climate action to reduce emissions (such as improved quality of life from investments in public transport, walking and cycling)
- the non-monetary benefits (such as pride in our international responsibility, avoidance of humanitarian disasters and suffering, and avoidance of the loss of biodiversity)

NB. Difficulties in quantifying the above factors does not mean they should be excluded.

- A contribution that is consistent with a reduction of emissions to achieve net zero emissions by 2050
- A contribution that establishes clear and predictable signals to investors and consumers to guide their investments and actions for the future

2. The nature of our emissions and economy, and our target?

Every country has a long list of factors that makes their emissions profile exceptional. This is not an excuse for inaction or a rationale to submit a lower INDC.

- The level of emissions per person should be the most important factor – New Zealand is one of the highest emitters of GHG per person, and should be at the forefront of deep reductions
- The level of income needs to be taken into account – a higher income is an indicator of a country's capacity to reduce emissions, and a low income indicates that poverty reduction priorities may constrain emissions reductions
- The figures in mitigation costs are questionable, particularly given the partial and static approach to modelling, and should not be accepted as a basis for deriving a target. For example, research that enhances the viability of methane inhibitors for ruminant animals changes the cost of mitigation dramatically.

3. What level of cost is appropriate for New Zealand?

This question is answerable only when the definition of cost is clarified (ie. whether narrowly defined monetary cost or full cost including externalities).

4. What opportunities for New Zealand?

See above.

5. How New Zealand should take uncertainties into account?

See above.