

Submission to the Ministry for the Environment on the consultation on setting New Zealand's post-2020 climate change target

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Summary

- Considering the importance of the issue, the consultation process has been unnecessarily brief and poorly resourced.
- The discussion document is biased. It is clearly aiming to persuade the reader that emissions reduction in New Zealand is too expensive, too difficult, and more costly compared with other parts of the world. Credible evidence to support these assertions is not provided. No attempt is made to seriously assess the emissions reduction potential in different sectors.
- WWF-New Zealand urges the government to set ambitious emissions reduction targets that are consistent with the latest science on what needs to be done to keep global warming as far below 2 degrees as possible.
- The target to be submitted to the UNFCCC should be at least a 40% reduction of net emissions below 1990 gross emissions levels by 2030. The government should also signal an intention to achieve a very high proportion of this target through domestic emissions reduction as this is consistent with a longer term reduction trajectory and the need for all countries to act.
- Any target should be subjected to more in-depth and evidence-based scrutiny on whether and how emissions reductions could be achieved, along with the potential costs and benefits, and revised upwards or downwards accordingly.
- The government should be transparent about the accounting methodology it wants to see used so that discussion over targets is better informed.
- Whatever target the New Zealand government proposes and whatever methodology is used to account for emissions, the critical issue is to create a long term plan and immediately start implementing meaningful and effective policies that will set New Zealand's emissions on a downward trajectory and enhance carbon sinks.

1. Introduction

WWF-New Zealand thanks the Ministry for the Environment for the opportunity to make a submission on the post-2020 climate change target.

WWF-New Zealand is part of the WWF International Network, the world's largest and most experienced independent conservation organisation. It has close to five million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which people live in harmony with nature. This is achieved by working on the ground with local communities, and in partnership with government and industry, using the best possible science to advocate change and effective conservation policy.

WWF-New Zealand advocates action to reduce greenhouse gas emissions in line with what the best available science tells us is necessary. The most comprehensive assessment of climate change science to date was completed by the Intergovernmental Panel on Climate Change (IPCC) in 2013.¹ This Fifth Assessment Report (AR5) drew the strongest conclusions yet on the high probability that human actions are causing climate change, on the catastrophic consequences for people and nature of run-away climate change and consequently on the need for action to mitigate, and adapt to, climate change.

It is important to bear in mind that the '2 degree' warming level that has been deemed relatively safe by some governments still entails potentially catastrophic impacts including biodiversity loss, significant Arctic sea ice loss, a high risk of mass coral bleaching, a high likelihood of over 1m sea level rise in the long term, high risks from the increased incidence and severity of extreme weather events and a high risk for crop production.²

The IPCC 5th Assessment Report usefully set out a carbon budget that humanity needs to stay within in order to have a reasonable chance of keeping below a 'relatively safe' level (i.e. 2 degrees) of average warming. Even if annual global emissions remain constant, rather than continuing to increase, this budget will be exceeded in 2035. The imperative to take significant action urgently could hardly be clearer. In this context, New Zealand, as part of an international effort, needs to play its part in reducing emissions as much as possible as soon as possible with the aim of reaching zero carbon dioxide emissions by 2070 at the latest.

2. WWF Response to the Consultation

The consultation process is badly flawed in terms of the time and money that have been devoted to it and the length of the consultation period (only 18 working days). By comparison, the consultation and referendum on the new flag is estimated to cost \$26 million³ and is taking over a year. The consultation process on the climate change target should have started in January or February 2015, which would have allowed time for more

¹ See: <https://www.ipcc.ch/report/ar5/syr/>

² UNFCCC (2015). Report on the structured expert dialogue on the 2013–2015 review. FCCC/SB/2015/INF.1. 4 May 2015. <http://unfccc.int/resource/docs/2015/sb/eng/inf01.pdf>

³ See: <http://tvnz.co.nz/national-news/bid-change-nz-flag-cost-millions-6118590>

engagement than the currently scheduled 12 meetings in 11 towns/cities sandwiched into a period of 12 days with only one week's notice before the meetings commenced.

The discussion document is biased. It is clearly aiming to persuade the reader that emissions reduction in New Zealand is too expensive, too difficult, and more costly compared with other parts of the world. It implies that New Zealand should therefore take on a minimal emissions reduction target. After receiving a formal request, the government agreed to release the economic modelling on which some of these assertions are based but has so far refused to release the analysis that lies behind the claim that emissions reductions in New Zealand are more costly compared to other countries. This suggests that the argument is weak and lacking in robust supporting evidence.

The economic modelling that has been released is based on several assumptions that bias the results and are a significant abstraction from reality. Both agriculture and forestry are excluded from the model and it is assumed that there is no technological development in response to a significant price on carbon.⁴ Not surprisingly with such assumptions the model concludes that only a quarter of the emissions reductions occur in New Zealand and the rest occur through the purchase of carbon credits on the international market.

The economic modelling is also biased due to the baseline that has been chosen. New Zealand has already committed to reducing emissions 5% below 1990 levels by 2020 and the current negotiations are based on an implicit agreement that there will be no 'backsliding' from existing commitments. This 5% target effectively sets a new baseline from which New Zealand will be expected to take further action. In contrast, the modelling assumes a baseline where New Zealand has no reduction commitment and takes no action. This is politically untenable and is therefore an unrealistic assumption that creates an impression that income foregone is greater than it otherwise would be. The 'real world baseline' is in fact a 5% reduction commitment by 2020.

Despite such flaws, the model quoted in the discussion paper still finds that New Zealand could achieve a 40% emissions reduction target while raising average household incomes from \$73,000 today to \$83,200 by 2027 (based on a \$50 per tonne carbon price). With a 40% target, the increase in average annual household income is only \$530 lower than it would be with the 'real world baseline' - a 5% target (\$83,730).⁵ So, according to the government's own modelling, the average household will forego just \$10.20 per week in additional income to achieve a 40% target compared with the 'real world baseline'.

However, it is important to remember that three quarters of this target is achieved, in the model, by purchasing credits on the international carbon market rather than reducing emissions or sequestering carbon in New Zealand. This would be a short-sighted way of addressing the challenge. Ultimately, no country has the option of doing nothing - every country will need to pursue a low carbon future and achieve zero net CO₂ emissions by 2070 at the latest. Buying carbon credits while allowing emissions to increase in New Zealand is simply creating an even greater problem for New Zealanders to address in the future.

⁴ Infometrics (2015). A General Equilibrium Analysis of Options for New Zealand's post-2020 Climate Change Contribution. A report for the Ministry for the Environment. 13 April 2015.
http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/general-equilibrium-analysis_0.pdf

⁵ See Page 14 of New Zealand's Climate Change Target: Discussion Document.
<http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/climate-change-consultation-document.pdf>

The 'carbon credits' approach also ignores the significant potential to reduce emissions and sequester carbon in New Zealand at a reasonable carbon price, particularly if the costs of inaction and the potential co-benefits of taking action are taken into account.

The discussion document presents no analysis of the costs to New Zealand of climate change. In the absence of concerted action to reduce emissions globally, the cost to the economy of the increased incidence of extreme weather events is likely to run into billions of dollars, not mention the cost to peoples' lives.⁶ Similarly, in the absence of concerted global action to reduce emissions, the cost of adapting to sea level rise is likely to be significant. While New Zealand's emissions are a very small contribution to the global problem, if a country like New Zealand is unwilling to take significant action and is perceived to be doing as little as possible, it reduces the chances of a meaningful global deal. If we want to avoid these costs, we need to increase the likelihood of significant action by major emitters, which means committing to take significant action ourselves.

The discussion document makes no attempt to assess the co-benefits of taking action to reduce emissions, such as improved health arising from increased walking and cycling or reduced water pollution from more riparian tree planting. Studies already exist on the estimated costs of air pollution in New Zealand,⁷ the economic costs of congestion,⁸ the costs to the economy of physical inactivity,⁹ the potential economic benefits of more active transport modes,¹⁰ and the potential economic benefits of riparian planting.¹¹ WWF believes that the failure of the Ministry for the Environment to incorporate this kind of analysis into its discussion of New Zealand's emissions reduction target is disappointingly inept, or worse, deliberately negligent and misleading.

The discussion document also makes no attempt to seriously assess or present the opportunities for shifting to a more efficient low carbon economy. There is a growing body of evidence pointing to the potential wider economic benefits of low carbon economic development, clean technology and 'greener economies'.^{12,13,14,15} It seems as though

⁶ For example, the 2008 drought is estimated to have cost the economy \$2.8 billion. See: <http://www.beehive.govt.nz/release/drought-costs-nz-28-billion>

⁷ For example, the work of the Health Research Council of New Zealand. See: http://www.hapinz.org.nz/HAPINZ%20Update_Vol%201%20Summary%20Report.pdf

⁸ Congestion is estimated to cost the NZ economy around \$1 billion per year. See: <http://www.nzta.govt.nz/resources/travel-planning-toolkit/docs/resource-1-facts-and-figures.pdf>

⁹ See, for example, work done by several regional councils on the cost to the country of physical inactivity: <http://www.gw.govt.nz/assets/About-GW-the-region/News-and-media-releases/Physical-inactivity-costs-report.pdf>

¹⁰ See, for example the work of Auckland University researchers in 2008: Valuing the health benefits of active transport modes. <http://www.nzta.govt.nz/resources/research/reports/359/docs/359.pdf>

¹¹ See recent Landcare Research work on ecosystem services:

<http://www.landcareresearch.co.nz/publications/newsletters/soil/issue-23/riparian-zones>

¹² See, for example, Pure Advantage. (2012). Green growth: opportunities for New Zealand. Report prepared for the New Zealand Green Growth Research Trust. <http://pureadvantage.org/wp-content/uploads/2015/04/PURE-Advantage-the-full-report.pdf>

¹³ See for example, PriceWaterhouseCoopers. (2009). A Clean Economy Vision for New Zealand in 2025. A report for New Zealand Trade and Enterprise.

¹⁴ See for example, Greenpeace. (2013). The Future is Here: New Jobs, New Prosperity and a Clean Economy <http://www.greenpeace.org/new-zealand/Global/new-zealand/P3/publications/climate/2013/TheFutureisHereGREENPEACEreport.pdf>

¹⁵ See for example, UNEP. (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication - A Synthesis for Policy Makers*, Nairobi, United Nations Environment Programme. www.unep.org/greeneconomy

none of this evidence has been considered in the government's thinking on the post-2020 climate target.

There is no attempt in the discussion document to seriously assess the existing emissions reduction potential in the energy sector and the agricultural sector as well as the sequestration potential of forestry. Instead, assertions are made, with no supporting evidence, that emissions reduction in New Zealand is too difficult and more costly than in other countries. What follows are some of these assertions accompanied by a brief analysis.

“Our low population density has contributed to a high per capita use of road transport.”

New Zealand is not unique in having a comparatively low average population density. Other developed countries with a lower average population density than New Zealand include Finland, Norway, and Iceland. Sweden has only a slightly higher population density than New Zealand.¹⁶ To date, these Nordic countries do not seem to have used their low population densities as an excuse for doing less than other countries to reduce emissions.

The low average population density statistic is also a little misleading because almost three quarters (73%) of New Zealand's population live in 17 urban areas.¹⁷ The concentration of population in urban areas coupled with the fact that almost half of all car journeys are less than 6km¹⁸ creates significant potential for replacing car journeys with public transport, walking and cycling.

However, this is unlikely to happen with the current lack of investment in public transport, walking and cycling infrastructure. The government's land transport funding policy statement shows that, during the 2012 - 2022 period, 96% of spending on new infrastructure will go towards roads and only 4% towards public transport, walking and cycling.¹⁹ This massive ongoing bias in new infrastructure spending is likely to be a significant contributing factor in high per capita use of road transport but is not mentioned in the discussion document.

“There are currently few viable options for reducing agricultural emissions in the short term.”

Technologies and methods already exist for reducing agricultural emissions of both methane²⁰ and nitrous oxide²¹ to some extent. Switching land use from livestock to other

¹⁶ Figures taken from UN Department of Economic and Social Affairs population database:

http://esa.un.org/wpp/unpp/panel_population.htm

¹⁷ Figures taken from: Statistics New Zealand. (2014). Sub-National Population Estimates as at 30 June 2014.

http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationEstimates_HOTP30Jun10.aspx and Statistics New Zealand infoshare database.

¹⁸ See: <http://www.nzta.govt.nz/resources/travel-planning-toolkit/docs/resource-1-facts-and-figures.pdf>

¹⁹ MoT. (2011). *Government Policy Statement on Land Transport Funding 2012/13 – 2021/22*. July 2011. Wellington, Ministry of Transport.

<http://www.transport.govt.nz/ourwork/KeyStrategiesandPlans/Documents/GPS-July-2011.pdf>

²⁰ e.g. biogas digesters

²¹ e.g. nitrification inhibitors. See, for example, Bertram G & Terry, S. (2010). *The Carbon Challenge: New Zealand's Emissions Trading Scheme*. Bridget Williams Books.

forms of agriculture or to forestry obviously has much greater potential to reduce emissions. In fact the abatement options for a producer of milk are potentially greater than the abatement options for a producer of oil (see Table 1), yet liquid fuel emissions are part of New Zealand's emissions trading scheme and are part of the government's consideration for a post 2020 target while agricultural emissions are not - based on the argument that abatement options don't exist for agriculture.

Table 1: Comparison of emissions abatement options for petrol and meat/dairy

Consumer product	Petrol	Meat/Dairy
Producer	Oil company	Livestock farmer
Consumer service	Mobility	Food
Consumer abatement options in response to higher carbon price (only likely if the price rises above demand elasticity threshold)	Use less through: driving differently, car-pooling, more fuel efficient cars, biofuels, trains, buses, bicycles, walking etc	Use less through: eating other cheaper and less-polluting foodstuffs, of which there are many.
Impact on the producer	Sell less product	Sell less product
Producer abatement options to mitigate this impact	Maybe some very modest abatement possibilities in the drilling and refining process but can't get over the major problem – burning petrol in cars releases CO2	Some potential to reduce nitrous oxide, modest potential to reduce methane from livestock waste and emerging potential to reduce methane from enteric fermentation by altering feeding regimes
Other possible producer responses	Change the nature of the business – refine oil to produce other products beyond liquid fuel and/or become an alternative energy provider.	Change the nature of the business - different farming mixes involving fewer animals and/or more tree planting or a different land use entirely.

“Reducing emissions in [the agricultural] sector is challenging given that the world needs more food.”

In discussions about feeding a growing world population it is important to put New Zealand food production in perspective. New Zealand contributes just 0.3% of global production of the top 20 food commodities and likely an even lower proportion of total food production.²²

The link made in the document between the world needing more food and New Zealand's agricultural emissions is deliberately misleading. If 'quantity of food' was the primary consideration, New Zealand could produce more food on the same amount of land with lower carbon emissions by switching to different forms of food production.

New Zealand could therefore reduce agricultural emissions while at the same time increasing the total amount of food that the country contributes to the 'global food basket'. The real issue is that New Zealand will struggle to reduce emissions if dairy farming continues to expand, which is not fundamentally about providing the world with more food.

²² Figures calculated from Food And Agriculture Organisation database, FAOstat: <http://faostat.fao.org/site/339/default.aspx>

“Overall, due to our national circumstances, New Zealand has fewer low-cost options to reduce our domestic emissions compared with other developed countries.”

Without providing some kind of evidence it is impossible to subject this claim to any scrutiny. However, on point of principle, all countries are going to need to reduce net carbon dioxide emissions to zero by the second half of this century so all countries will need to get beyond just picking off the ‘lowest cost options’. The sooner this transition is started the easier and cheaper it will be.

3. WWF-New Zealand Recommendations

Set an ambitious emissions reduction target

New Zealand will be expected to submit an economy-wide emissions reduction target to the UNFCCC. It is also important to bear in mind that using gross-net accounting (i.e. comparing net emissions during the commitment period to a 1990 gross emissions baseline) has a significant impact on the target (see Table 2). The ‘gross-net’ approach is the way that New Zealand’s emissions reduction commitments have been accounted for to date so will likely be used for the post-2020 target.

Table 2: Implications of different target accounting methods for New Zealand’s emissions reduction commitment (all figures in millions tonnes carbon dioxide equivalent)

	Gross-Gross	Net-Net	Gross-Net
1990 baseline	66.7	38.1	66.7
40% reduction target by 2030	40	28.9	40
2013 emissions	80.96	54.2	54.2
Reduction required from now	40.96	25.3	14.2

Note: This table uses the 2013 Greenhouse Gas Inventory²³ and is for illustrative purposes only. The accounting rules that could be used in any new agreement may alter these numbers.

The most critical issue for all countries is to reduce carbon dioxide emissions because CO₂ has the greatest impact on global warming (both because of the scale of emissions and because CO₂ persists in the atmosphere for hundreds of years). Whatever target New Zealand sets needs to entail getting gross CO₂ emissions on a downward trajectory and result in significant reductions.

Based on the latest IPCC report, New Zealand should set its own target of reducing net carbon dioxide emissions to zero by 2070 at the latest, and should set its own targets for reducing nitrous oxide (a relatively long-lived greenhouse gas—persisting in the atmosphere for over 100 years), stabilising and then reducing methane (a relatively short lived greenhouse gas—persisting in the atmosphere for about 12 years) and reducing other greenhouse gases.

Regarding the economy-wide target that needs to be submitted to the UNFCCC, it is not easy for submitters in this process to make an informed choice because the government

²³ Ministry for the Environment. (2015). New Zealand’s Greenhouse Gas Inventory 1990-2013. <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/ghg-inventory-1990-2013.pdf>

has not been transparent about its preferred accounting method. In WWF-New Zealand's view, if the New Zealand government is using the 1990 base year and gross-net accounting, the target should be at least a 40% reduction of net emissions below 1990 gross emissions levels by 2030. The government should also be signalling an intention to achieve a very high proportion of this target through domestic emissions reduction as this is consistent with a longer term reduction trajectory and the need for all countries to act.

The table below gives an idea of the scale of emissions reduction such a target might entail compared to the most recent national greenhouse gas inventory.

Table 3: Example of the scale of emissions reductions of different gases required from 2013 to achieve a 40% reduction target (based on gross-net accounting. All figures in millions tonnes carbon dioxide equivalent)

	2013	2030
Carbon dioxide	34.6	20
Methane	35.6	30
Nitrous Oxide	9	4.5
Others	1.6	1.5
Gross total (excluding carbon sequestration)	80.8	56
Carbon sequestration ('negative emissions')	26.8	16
Net Emissions Total	54	40

Note: This table uses the 2013 Greenhouse Gas Inventory and is for illustrative purposes only. The accounting rules that could be used in any new agreement may alter these numbers.

A significant reduction in carbon dioxide emissions in the next 15 years would be a huge challenge requiring 100% renewable electricity, a major cut in transport emissions and ensuring that forestry remained a carbon sink during the 2020s (a time when large areas of plantation forest are due to be harvested). However, it is not beyond New Zealand's capability if we act quickly and decisively.

There are obviously many different permutations to the way the target could be achieved than is set out in the table above. It is therefore important that the 2030 target define a reduction trajectory by leading towards a 2070 zero carbon dioxide target and longer term targets for other gases. The table above is just a very rough outline to illustrate, very broadly, how a 40% reduction target might be achieved. It is disappointing that the government has not undertaken much more detailed work to assess emissions reduction pathways in different sectors as this would have been very helpful in informing this consultation process. Ideally, a target like the one WWF has proposed needs to be subjected to more detailed scrutiny.

It also needs to be borne in mind that the proposal above is based on the critical caveat or assumption that concerted action to reduce emissions and sequester carbon starts now. Despite the significant projected increase in New Zealand's net emissions during the 2020s due to large areas of trees being harvested and steadily rising emissions from transport and agriculture, the current government has no plan to address this and existing policy will result in little or no emissions reduction or sequestration over the next few years. If this situation persists and significant action is not taken now, the proposed target above is not likely to be achievable.

Create a low carbon development plan

There is no point in setting targets unless a plan—with milestones—is set in place to achieve them. This will ensure progress towards the targets can be tracked and policies that can be implemented and changed if milestones are not reached. In 2010, developed countries agreed to create low carbon development plans,²⁴ yet New Zealand has failed to meet this commitment. In contrast, other countries including Brazil, Germany, Mexico, Scotland, South Africa and the UK have moved ahead in developing their strategies and plans for achieving low carbon economies.²⁵

The government needs to create a low carbon development plan that demonstrates, sector by sector, how emissions reduction will be achieved over time.

Set in place policies to kick start the transition

Turning the low carbon plan into action

Critical in kick starting the transition towards a low carbon economy will be facilitating a 'whole of government' approach. While challenging to implement, it will be essential to ensure the various arms of government are pulling in the same direction.

There is also a need for transparency in reporting back to parliament and the public on whether we are on-track to meet emissions reduction targets. The UK's Climate Change Act 2008²⁶ is an example of a piece of legislation that not only sets a target but also creates a transparency mechanism to enable public scrutiny of progress. The legislation requires carbon budgets to be set that create a downward trajectory towards the target. Government must report back to parliament on whether the UK is on track with its carbon budgets and an independent climate change committee has been established to monitor progress and make suggestions on how to achieve the carbon budgets.

Important steps in the low carbon transition are therefore:

- Creating a mechanism for cross-departmental coordination and oversight. This oversight and coordination would have to start at the very top of government.
- Enacting 'climate transparency' legislation similar to the UK Climate Change Act.

A meaningful price on carbon

The current Emissions Trading Scheme (ETS) is an expensive, complicated and bureaucratic way of achieving very little. It needs an overhaul so that the price on carbon creates a meaningful incentive for emissions reduction. For example, it has been reported

²⁴ Paragraph 45 of the UNFCCC Cancun Decision states that "[the conference of the Parties] *Further decides* that developed countries should develop low-carbon development strategies or plans."

²⁵ WWF. (2012). Planning Development in a Carbon Constrained World. <http://www.worldwildlife.org/climate/Publications/WWFBinaryitem25183.pdf>

²⁶ For the text of the UK Climate Change Act 2008, see: http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf

that the carbon price needs to be over \$15 per tonne in order to stimulate tree planting²⁷ and it would likely need to be significantly more to stimulate the substitution of high carbon for low carbon technologies.

The ETS could be changed so that it acts more like a tax, with revenue for government that could be used for low carbon incentives, or it could be turned into something much closer to a 'cap and trade' scheme that places a steadily decreasing limit on the number of carbon credits available. Either way, it is critical that the ETS is clearly linked to achieving emissions reduction targets.

A critical step in reducing emissions in New Zealand is therefore:

- Overhauling the Emissions Trading Scheme (ETS) to create a meaningful price on carbon that is clearly linked to achieving the government's emissions reduction targets.

Expanding renewable electricity

Renewable electricity will be critical in moving towards a cleaner economy. New Zealand has the potential to create a 100% renewable electricity system.²⁸ This will be achieved by a mixture of reducing demand, facilitating the expansion of household and community 'distributed' generation, phasing out fossil fuel ('thermal') generation, and expanding renewable supply in a strategic way in order to make best use of New Zealand's existing and potential renewable electricity generation resources. The government could help this process by:

- Ensuring electricity lines companies are able to encourage their customers to reduce electricity use, replacing generator/retailers (who have an incentive for increased demand) in leading demand reduction.
- Encouraging greater use of the existing ripple control system for managing electricity demand for hot water.
- Providing or facilitating direction for the electricity industry on a 100% renewable electricity strategy.
- Redefining the mandate of the Electricity Authority so it is consistent with a strategy to reduce demand and expand the proportion of renewable generation to 100%.

²⁷ Watson, P. (2012). Carbon benefits going up in smoke? Nelson Mail, 20/11/2012.

<http://www.stuff.co.nz/nelson-mail/lifestyle-entertainment/primary-focus/7973648/Carbon-benefits-going-up-in-smoke>

²⁸ See, for example, Greenpeace (2013). The Future is Here: New Jobs, New Prosperity and a New Clean Economy. <http://viewer.zmags.com/publication/9c3e8878#/9c3e8878/1> and Mason, I et al. (2013).

Transitioning to a 100% renewable electricity generation system for New Zealand: technical issues and policy challenges. http://www.theenergyconference.org.nz/uploads/98897/files/Presentations/lan_Mason.pdf

- Implementing a ban on new thermal base-load electricity generation to send a clear signal to the industry that fossil fuel electricity generation may only be used for 'peaking' in the medium term.
- Requiring all retailers to provide secure multi-year contracts and fair prices for those feeding-in electricity with grid-connected renewable generation.

Greening New Zealand's transport system

Cleaner transport represents a major challenge for New Zealand. A heavily car-based economy, an inefficient car fleet by OECD standards,²⁹ geographical isolation and a significant rural economy all make low carbon transport potentially difficult. However, the problems are surmountable and the solutions present New Zealand with a range of opportunities and co-benefits.

With the right combination of public transport, walking, cycling, electric vehicles, rail and sea freight, biodiesel for road freight (and agricultural/forestry vehicles) and bio-jet fuel for aircraft, New Zealand can kick the oil habit, continue to produce and export (possibly even increasing the value of export products), improve energy security, improve health and create more pleasant towns and cities. Policies that will take New Zealand in this direction include:

- Implementing vehicle fuel economy measures. The policy that could best benefit New Zealand (because we import all our cars) is a 'feebate' type of system where an additional charge is placed on less fuel efficient vehicles and the revenue is used to lower the cost of the most fuel efficient vehicles.³⁰
- Increasing investment in public transport, walking and cycling and reducing expenditure on new roads.
- Enabling the uptake of electric vehicles (EVs) in New Zealand: the 'feebate' policy suggested previously might be an appropriate way to fund an EV grant scheme.
- Creating a biofuels strategy to facilitate sustainable biodiesel production in New Zealand, to provide a sustainable fuel for road freight and machinery which cannot become electric.
- Implementing specific biofuels policies that could help the fledgling industry develop, such as: a sales obligation and/or grant scheme to stimulate domestic biofuel production, support for specific demonstration projects, support for research and development and incentives for tree planting.

²⁹ MoT. (2008). Improving the fuel economy of vehicles entering the New Zealand fleet: A Discussion Paper For Public Comment. January 2008, Wellington, Ministry of Transport.

³⁰ For more on fuel economy policies, see: IEA. (2012). Improving the fuel economy of road vehicles: a policy package. <http://www.iea.org/publications/freepublications/publication/name,31268,en.html> and Eads, G. (2011). 50 by 50: Prospects and Progress. Global Fuel Economy Initiative. http://www.fiafoundation.org/publications/Documents/prospects_and_progress_lr.pdf

Promoting cleaner industry

Creating the right regulatory environment for New Zealand's heavier industries is very challenging. It is difficult for any government to strike the right regulatory and tax balance and to be able to differentiate between self-interested lobbying and the real possibility that a company will have to shut down its operations due to increased costs. On the one hand, nobody wants to see well run and important industries leave New Zealand. On the other hand, it's essential to create signals that stimulate innovation and pollution reduction. Policies that could help in this regard include:

- Offer tax breaks which offset (at least partially) the increased cost resulting from a higher carbon price for the most energy intensive companies. The incentive to reduce pollution (a cost on emissions) will remain but the overall impact of the carbon price on a company's competitiveness would be reduced or nullified.
- Providing research and development incentives for the creation and adoption of cleaner technologies in key industries such as steel, aluminium and cement and providing support for pilot projects of clean technology use in key industries.

Discouraging fossil fuel extraction

All economies need to start shifting away from extracting and using fossil fuels and towards using renewable technologies. However, transitioning away from our dependence on oil cannot happen overnight. It must be achieved gradually but it is critical that steps are taken now to kick start the process. A useful first step would be:

- Ending tax breaks and support for oil and gas exploration (in 2012 amounting to more than \$40 million per year) and instead spending the money on installing insulation and/or solar PV in Housing New Zealand's rental stock in order to create warmer, healthier homes for New Zealand's poorest people and reduce power bills. This investment could also result in reduced healthcare costs.³¹

Expanding forests and use of forest products

Beyond the price on carbon, there may be a need for further afforestation incentives both to establish permanent forests of native trees, which will have biodiversity co-benefits, and expand the plantation forest estate. In a low-carbon future it is likely that demand for wood products will increase so the establishment of more plantation forest managed according to best practice (i.e. Forest Stewardship Council certification) is relatively low-risk for the New Zealand economy.

³¹ Telfar-Barnard, L. Preval, N & Howden-Chapman P. (2011). The impact of retrofitted insulation and new heaters on health services utilisation and costs, pharmaceutical costs and mortality: Evaluation of Warm Up New Zealand: Heat Smart. Wellington. Ministry for Economic Development.

The government could also look at ways to stimulate value-added wood processing in New Zealand and make the most of New Zealand's considerable expertise in the wood products industry.

Useful steps could therefore be:

- Creating further incentives, in addition to the carbon price, for establishing permanent native forests as well as plantation forests.
- Creating further incentives, in addition to the carbon price, for wood processing and using wood products such as engineered construction timber.

Defining a better measure of growth

The pursuit of GDP growth as a proxy for improved well being and as the central and defining objective of government economic policy is problematic for a range of reasons that are well argued and well understood in economic literature.³² However, the use of GDP as a measure of success is so ingrained it is difficult for any government to simply stop using it. A transition towards different quality of life indicators and different measures of social and economic success is necessary to help shift thinking on economic policy. An important starting point would be:

- Adopting an indicator, such as the Index of Sustainable Economic Welfare (ISEW) or the Genuine Progress Indicator (GPI), that sits alongside, and is given equal weight to, GDP in government reporting on economic and social progress.

Setting a green economic development agenda

Sustainable, low carbon development must become the driving force behind economic development strategy. Attempting to simply add-on a 'green growth' veneer to existing, conventional economic policy and strategy will likely result in only a modest deviation from business as usual. This will almost inevitably mean ongoing environmental degradation. A key step in setting the framework for the whole range of business, innovation, fiscal and economic related policies would be:

- Creating a 'sustainable, low carbon economic development agenda' that provides a framework for, and influences all, government economic policy decisions.

³² For a useful summary of the critique regarding GDP as a measure of quality of life, see pages 6 – 16 of a report written for the UK Institute and Faculty of Actuaries entitled, Resource constraints: sharing a finite world – Implications of Limits to Growth for the Actuarial Profession. The evidence and scenarios for the future. <http://www.actuaries.org.uk/research-and-resources/documents/resource-constraints-sharing-finite-world-evidence-and-scenarios-fu>

Making money work for the planet

The finance industry has a critical role to play in the transition towards a more sustainable economy. For example, over the next decade there needs to be a shift of finance away from fossil fuels as well as more finance into clean, renewable energy and other clean technologies that are not reliant on fossil coal, oil and gas. The business case for this shift is also strengthening, with increasing focus on the potential for fossil fuel assets to lose some or most of their value as emissions reduction policies are increasingly implemented.³³ The New Zealand government could play a useful role in signalling this shift by:

- Introducing a bill that could enable or encourage state-owned investors like the NZ SuperFund and ACC to start the transition away from fossil fuel investments.

Ensuring regulatory flexibility:

It is impossible to predict the kinds of taxes, regulations or other policies future governments might need to use in order to achieve a low carbon economy. It is therefore essential to maintain flexibility in the use of different policy options. Negotiation of regional trade deals that include restrictive investor-state dispute settlement clauses, such as the Trans-Pacific Partnership Agreement, create the potential for companies to challenge new measures that impose additional costs (e.g. resource or pollution taxes) on the grounds of de-facto 'expropriation' by the state of their investment. The creation of these new legal rights for companies to challenge government regulations is clearly not an essential precursor to attracting foreign direct investment.³⁴ There is some evidence to suggest however that it can have a chilling effect on government regulation as well as result in regulatory reversals.³⁵ One important way, therefore, of maintaining policy flexibility to pursue low carbon development is through:

³³ See, for example, Standard and Poor's. (2013). What a carbon-constrained future could mean for oil companies creditworthiness. March 1 2013, London, Standard and Poor's. http://www.carbontracker.org/wp-content/uploads/downloads/2013/03/SnPCT-report-on-oil-sector-carbon-constraints_Mar0420133.pdf

³⁴ A review of relevant literature suggests that the most important factors in attracting FDI are market size and potential for growth. Other factors include the labour market, property rights, and resource availability (depending on the type of investment). A stable and transparent regulatory regime regarding investment, and obviously the level of openness to investment, are also factors in attracting FDI. However, there seems to be little or no evidence to suggest that the existence of investor-state dispute settlement is either a necessary or significant factor. Marc Proksch, Head of the Private Sector and Development Trade and Investment Division of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), points out in a presentation on the issue, "Investment protection is important but existence of RTAs/BITs [is] not [a] major consideration for FDI." (See: <http://www.unescap.org/tid/projects/fdi2011-mp1.pdf>). There are many useful research papers on the issue, one of which is: Hallward-Driemeier, M. (2003). Do Bilateral Investment Treaties Attract FDI? Only a bit...and they could bite. World Bank, DECRG. June 2003. http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2003/09/23/000094946_03091104060047/additional/105505322_20041117160010.pdf

³⁵ Two examples of regulatory chill resulting from the investor-state provisions in the North American Free Trade agreement (NAFTA) are provided by Kelsey and Wallach (2012). "Investor-State" Disputes in Trade Pacts Threaten Fundamental Principles of National Judicial Systems. <http://tpplegal.files.wordpress.com/2012/05/isds-domestic-legal-process-background-brief.pdf> This briefing also provides examples of regulatory reversals due to investor-state challenges.

- Ensuring any new bilateral, regional or multilateral trade deals do not include investor-state dispute settlement clauses.

4. Conclusion

This consultation process should have been an attempt to properly assess the challenges and opportunities for emissions reduction in New Zealand. The framing of the consultation should have been that all countries will ultimately need to decarbonise so the question is not whether, but how we can achieve this and how the 2030 target is a stepping stone towards it.

Instead, the discussion document paints a picture of a government that sees addressing climate change as optional for New Zealand and trying to justify doing as little as possible. There is no ambition. There is no vision. There is no commitment. There is in fact a complete lack of belief in the ability of New Zealanders to create a low carbon economy.

In its place, there is an attempt to persuade New Zealanders to support a 'do the minimum we can get away with' approach. The narrative is distorted, the evidence is either highly questionable or completely lacking and the questions are loaded.

This is not a good basis for considering New Zealand's contribution to addressing possibly the greatest challenge facing humankind.

In this context, it is difficult to properly engage in an evidence-based discussion about New Zealand's emissions reduction options. It would have been preferable for the government to come forward with detailed analysis of mitigation potential in different sectors under different policy scenarios including the potential costs and benefits. It is not as if the problem has not been around long enough for this work to have been done. It would also have been preferable for the government to be transparent about the implications of different accounting methodologies and how these might affect New Zealand's emissions 'liability' in a new agreement, although they would not change the real world impact of New Zealand's emissions.

In the absence of such analysis and transparency, WWF-New Zealand has tried firstly to provide a robust critique of the weak arguments and weak evidence presented in the discussion paper and secondly to propose an ambitious but, we think, achievable target (but using only simple accounting assumptions), and suggest policies that could be used to set New Zealand on the path to emissions reduction. Ideally, such a proposal should be subjected to more in-depth and evidence-based scrutiny on whether and how emissions reductions could be achieved, along with the potential costs and benefits, and revised upwards or downwards accordingly.

Ultimately, whatever target the New Zealand government proposes and whatever methodology is used to account for emissions, the critical issue as we have been arguing for many years is to create a long term plan and start implementing meaningful and effective policies as soon as possible that will set New Zealand's emissions on a downward trajectory and enhance carbon sinks. This is based on two straightforward and, we believe, unarguable principles:

1. All countries will have to de-carbonise.
2. The sooner we start, the longer we have got to transition and the easier and cheaper it will be.

WWF-New Zealand urges the government to stop seeing emissions reduction solely as a threat that must be avoided and instead grasp the many opportunities that exist for New Zealand and New Zealanders to prosper and thrive in a world that is going to change.