

Submission on New Zealand's climate change target

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Overview

The New Zealand Government's climate change discussion document casts climate change mitigation through emissions reduction/offsetting as a cost to be borne by the taxpayer. We submit that this is an overly restrictive view in that it does not take into account the cost of doing nothing, and the opportunities that the transition to a low-carbon economy would provide. As a result, it encourages us to set the *least ambitious* targets we think will be acceptable politically. In contrast, by taking into account the potential benefits of transitioning to a low-carbon economy the Government is more likely to identify opportunities for actually *increasing* our economic wealth through climate change actions, allowing us to set more meaningful targets that are informed by the science.

The remainder of this submission explores this argument with reference to the five questions in the discussion document.

1. Do you agree with the objectives for contribution and what is important to you?

We DO NOT agree with the objectives as stated, because they place too much emphasis on cost containment and on political acceptability, rather than on what the science tells us is necessary.

New Zealand needs to make a contribution at a level that is supported by the science as being *at least* the necessary minimum globally to contain global warming to within 2 degrees. Our small size is immaterial: climate change is a global problem requiring global action. Whilst it can be argued that action on the part of small countries is meaningless if larger ones such as the USA, Australia and China don't act similarly, the competing argument is that if countries such as ours (with a history of "doing the right thing" even when it exposes us to risk) aren't motivated to act, why should anyone else? Unless New Zealand commits to meaningful targets, they will have no influence whatsoever on the actions of others.

The "small size" argument is further undermined in that New Zealand's *per capita* emissions are amongst the highest in the world. Separating agricultural emissions from those caused by individual consumption is similarly unhelpful: agriculture forms a large part of our economy, on which we all rely to provide for our consumption, and therefore it is part of every New Zealander's overall footprint. Once overall per-capita emissions of our entire economy are considered we have the same part to play as any US or Australian citizen.

What is important to us is that we all do our part to tackle what is potentially mankind's greatest threat. We would be ashamed to live in a country that dodges its obligations. On a recent business trip to Europe I was staggered at the difference in outlook of countries such as Germany and the UK, in terms of both public awareness of the issue and more tangible outcomes such as 21st century integrated public transport facilities and the large uptake of renewable energy, particularly wind power. We want to live in a society that harnesses its best and brightest to tackle the issue head-on and takes advantage of the opportunities this provides, rather than one that tries to skirt the issue.

New Zealand's emissions target needs to be set according to what the science informs us is necessary to limit climate change to manageable levels, NOT one that is simply judged to be politically palatable. A 2030 target of 30-40% below 1990 levels is more appropriate (Australian academy of Sciences 2015).

2. What do you think the nature of NZ's emissions and economy means for the level of target we set?

I believe the difficulties New Zealand faces are being overplayed. One of the fastest rising emitting activities in New Zealand is transport, of which a large part is road freight. In the past few decades New Zealand freight has transitioned from a mixture of predominantly rail, road and coastal shipping to today's mix which is dominated by road freight, and which now includes a significant air freight component. Rail produces less than one quarter the emissions created by road freight per Tkm (0.026 kg CO₂e per tkm versus 0.114 for heavy good vehicles – DEFRA factors 2015) and just *one percent* of air freight's emissions per tkm (DEFRA factors 2015) and yet, *despite New Zealand's rail network being state owned*, we have not seized this opportunity to reduce our emissions. If some of the capital spent on roads was diverted to rail, the reduction in truck numbers on our roads would have multiple benefits including emission reductions, reduced congestion and less road wear and tear. Fewer trucks on roads would mean increased traveller safety and an enhanced experience for tourists.

The discussion document makes the following statements:

“Our carbon dioxide emissions (ie, not including methane or other gases) per capita are lower than other developed countries, particularly in comparison with Australia and the United States. This is important given that the Intergovernmental Panel on Climate Change (IPCC) notes that carbon dioxide is the main driver of global temperature rise over the long term”.

This view is misleading. The reason CO₂ is so important is because it the gas being emitted in the highest quantity. To the climate there is absolutely no difference between CO₂ and methane (when converted to CO₂ equivalent emissions). If New Zealand chose to earn the same amount of income via industries that emit an equivalent (CO₂e) quantity of CO₂ rather than methane, the effect on global climate would be exactly the same. Further, it is New Zealand's choice (via policy settings and planning regulations) that the economy is dominated by a high-emitting industry. Similarly, we have the choice to change our policy settings to instead encourage high-value, low-emitting industries including emerging markets in renewable energy, clean transport, and other transformational technologies such as smart power networks and innovations in ICT that drive a more productive economy.

New Zealand is no more or less uniquely challenged than any other country. The Government needs to work towards broadening our economy into less emission-intensive activities, and encouraging innovation in new energy solutions, rather than trying to protect our current economic mix at any cost.

3. What level of cost is appropriate for NZ to reduce its GHG emissions? For example, what would be a reasonable reduction in household consumption?

This section does not justify the numbers being asked about or provide a range of options. If New Zealand chooses to offset its emissions rather than reduce them, the outcome will be purely a cost on New Zealand, with little, if any, effect on emissions. On the other hand, if we embrace emerging markets in clean, renewable energy, we could potentially *grow* our economy, while at the same time reducing emissions. Further, a transition to clean energy would have many other indirect cost savings resulting from the improvement in our environment, including lower road maintenance; lower storm water maintenance because of fewer hydrocarbons being washed off our roads; lower healthcare costs arising from respiratory and other pollution-related illnesses; lower energy costs (i.e. increased productivity) arising from making energy savings.

Also, if the government used a carbon tax, and made it fiscally neutral by offsetting it with mechanisms such as fee-and-dividend or reductions in income tax, the New Zealand private sector and consumer market could produce emission reductions with *no governmental cost at all*, by changing consumer behaviour on the demand side and investor returns for emitting versus non-emitting investments on the supply side.

It is the wrong approach to consider climate change action as a cost; the government needs to treat the problem as one of economic management and to look for opportunities to reduce emissions that actually benefit the economy and New Zealand society.

4. Which opportunities do you think are the most likely to occur, or be most important to NZ?

As described in the discussion document, New Zealand is well-placed to move to electric vehicles as this technology matures. New Zealand has one of the highest wind energy yields in the world, along with large areas of remote, marginal or unproductive land, giving wind power the potential to play a large part in our electricity mix. Many parts of New Zealand are also well-placed for solar generation. Although the intermittency of these technologies present challenges, in practice it is probably true to say that (in the daytime) somewhere in New Zealand either the sun is shining or it is windy, and so the daytime supply could be made fairly steady if the addition of both wind and solar was planned to be complementary. More importantly however, an incremental conversion to electric vehicles would add substantial storage capacity to the grid at the same time that renewable generation is increasing.

In the long run electric vehicles are likely to become the norm over the internal combustion engine because of the huge benefits they offer in noise and pollution reduction and lower maintenance costs. Biofuel (from waste products only) is likely to play a niche role in areas where electrification is less feasible or more expensive, such as aeroplanes and, potentially, shipping. New Zealand would be well-placed for a rapid uptake of electric vehicles with very little infrastructure cost if the Tiwai Point aluminium smelter was to close, freeing up a large volume of clean electricity. The Government should weigh the downstream benefits of this “re-purposing” of the energy resource against the loss of jobs and revenue the smelter closing would bring, taking into account the likelihood that the smelter will close anyway within the next few years because of the changing aluminium market.

New Zealand’s public transport infrastructure lags well behind the state-of-the-art, a fact I recently witnessed personally in countries such as Germany and the UK, where walking, biking and public

transport are all seamlessly joined: In Edinburgh the central rail station has cycle parking for over 180 bikes (filled to capacity when I observed it); Stuttgart has covered passenger and cycle areas at many of its rail stops, and has a “one ticket” system for using all of its public transport networks with free transfers between them. In contrast, the bus system in Christchurch is poorly connected to the cycling network, with minimal covered bike parking and many key stops now in poorly accessible places. New Zealand could achieve significant reductions by improving its public transport network.

All of the technologies identified apply to New Zealand, with the electrification of our transport system (using renewable technology to grow supply as required) and improved public transport being the most obvious short-term opportunities.

5. How should NZ take into account the future uncertainties of technologies and costs when setting its targets?

There are plenty of opportunities available to the Government today for reducing (rather than offsetting) emissions where the level of uncertainty is low. Electric vehicles have matured to the point where they are already practical for town use, with vehicle manufacturers indicating that the next crop of vehicles (scheduled for 2016/17) will have comparable range to current internal combustion engines. In the meantime, the latest ICE motor vehicles deliver impressive fuel efficiency; policies that encourage the purchase of fuel-efficient vehicles could be implemented quickly and cheaply as a bridging step.

Wind power is another mature technology that can simply be implemented now: there is no need for further research (although investing in wind generation research may pay off in the longer run). On-grid solar is in a similar position.

Reducing New Zealand’s reliance on road freight is another low-uncertainty opportunity that could be implemented quickly. The Government needs to take an impartial look at the amount that road freight is subsidised by sharing the road network with passenger vehicles, compared to rail which must stand alone. Given that trucks are the main cause of road surface degradation, reducing the number of trucks on the road would free up significant capital to be invested in the rail network, so an initial investment in the rail system would be offset by later reductions in road maintenance costs, not to mention the potential indirect savings as identified earlier. Electrification of the rail network is also a low-uncertainty option.

It is acknowledged that trying to directly tackle emissions for our current dairy-dominated agricultural export business will be hard. Instead we need to look at the mix of commodities we produce and ask whether current policy settings are appropriate for enabling the most efficient and competitive production. For example, New Zealand arable farmers continue to break world records for crop yield per hectare of grains, while our relative competitiveness in the dairy industry is falling as countries such as China and USA ramp up massively bigger operations with greater economies of scale. New Zealand’s agricultural emissions would fall significantly if we moved from dairying to less emission-intensive agriculture such as arable farming. At the same time, moving to a more mixed agricultural model would smooth out the volatility in the agriculture sector, with flow-on effects of stabilisation of land values and increased food security.

New Zealand lags behind many OECD countries in energy efficiency. With many other countries passing energy efficiency measures into law (e.g. the UK’s ESOS legislation), New Zealand has an opportunity to review its use of energy with a goal of reducing the energy intensity of our economy.

Saving energy saves money, and would increase the efficiency and productivity of our economy. Failing to act risks New Zealand's competitiveness being eroded as other countries out-perform us.

In contrast, attempting to offset emissions is a crystal ball-gazing exercise with only one certainty: that the overall price of carbon must rise if it is to have any tangible effect on emissions. Pursuing an offsetting-only policy guarantees a cost to the taxpayer, with zero benefits for our economy and society, and questionable efficacy in reducing global emissions.

To reduce uncertainties the government should focus in the first instance on mature/maturing technologies that will have a material impact on our emissions, and on reducing the energy intensity of our economy through policies that encourage energy efficiency. Policy settings that encourage diversification of the agricultural economy into lower-emitting products should also be explored. Purchasing offsets should be seen as a risky last resort only.

Conclusion

The New Zealand Government's climate change discussion document casts climate change mitigation through emissions reduction/offsetting as a cost to be borne by the taxpayer. This submission has argued that this does not take into account the cost of doing nothing, and the opportunities that the transition to a low-carbon economy would provide. Treating emission reduction as an obligation to be paid for ignores the many opportunities and benefits that a transition to a low-emissions economy would provide. Opportunities and technologies for meaningful emission reductions exist today through a mixture of electrification of our transport fleet, improved public transport, greater use of our rail network, a focus on energy efficiency, and diversification of the agricultural sector into low-carbon products. These opportunities should be explored in order for New Zealand to pursue a more meaningful target of 30-40% below 1990 levels by 2030 without imposing an overly onerous burden on the taxpayer.