

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

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1. New Zealand's contribution should be determined, in general, by the internationally-agreed target of limiting global warming to 2°C. This requires stabilising GHG emissions globally at, at most, 2 tCO₂e per person, assuming a stable population. (Some estimates are even lower.) New Zealand's emissions were 18 tCO₂e per person in 1990 (17 tCO₂e in 2012, but 32% more people) indicating that **we must eventually make very substantial reductions of 80%–90% compared to 1990 levels.**
2. This is no surprise as the same considerations led the UK, for example, to increase their target from a 60% reduction to an 80% reduction on 1990 levels by 2050. Indeed, all western European countries have developed or are developing plans to reduce their (CO₂ and/or GHG) emissions 80–100% by 2050.
3. In addition, the following factors should be taken into account in setting our contribution. Taken together, these push it towards the high end:
 - (a) New Zealand's emissions have been relatively high for some time, with an economy based on coal, oil, and ruminants throughout the 20th century. Our cumulative emissions per capita, and hence our cumulative responsibility for climate change, are high.
 - (b) New Zealand is expected to be somewhat protected (by the Southern Ocean) from the worst direct impacts of climate change. Such countries should take the lead lest negotiations turn into a battle of winners vs. losers.
 - (c) New Zealand is a rich country. Again, such countries should take the lead.
 - (d) New Zealand has exceptionally abundant resources of renewable energy per capita, with resources of sun, wind, hydro, geothermal, and wave/tides all being outstanding. Such countries should take the lead.

- (e) New Zealand is a net energy importer and is exposed to future changes in fossil fuel prices. Energy independence will reduce future economic risks.
 - (f) New Zealand's actions and decisions since 1990 have led to rapid emissions increases. While this makes it a bit harder to reduce them now, we should accept responsibility for what we have done so recently.
4. In fact, all countries are faced with the question of how best to deal with the uncertainty over the extent and impacts of future climate change. Most New Zealand authorities plan to protect against 1-in-500-year floods. This suggests that we are comfortable with at most a 20% risk of severe local damage and avoidable deaths occurring once in a century. What level of risk are we comfortable with when the impacts are nation- and world-wide? I suggest that pushing for no more than a 20% chance of warming topping 2°C is prudent and still practical. There are many uncertainties, but factors to be considered include:
- (a) Sea level rise – up to 1m by 2100 is the most likely, but studies of Antarctica in 2014–15 suggest that 2–4m is possible: the risk is low, but – judging from surveys of active Antarctic scientists – still in the 1% – 10% range. Even if we decide to plan for an 80% likelihood, there is still increased sea level rise beyond 2100 to consider. Action now will both reduce and slow this down.
 - (b) Methane may be emitted from the Arctic. Again the risk is low but unknown.
 - (c) Climate change may change local weather patterns suddenly. Some studies argue that this has already happened as the melting of the north pole sea ice changed the dynamics of the jetstream. Weakening of the gulf stream is another example.
 - (d) Despite intensive research there is still considerable uncertainty over the value of climate sensitivity. It unavoidably has a fat tail on the high end. If we are lucky and climate sensitivity turns out to be 2°C, we get a few decades of delay; if it's 5°C, we are in trouble.
5. There are many opportunities for emissions reductions and efficiency gains in New Zealand. Increasing our renewable electricity generation from 80% to 100% is just as useful, and as easy, as some other country going from 20% to 40%. This could easily be done in 5–10 years using wind, geothermal, and a small amount of home solar. There are many obvious steps that can be taken that are wins for energy producers, energy consumers, the local environment, and the global environment simultaneously. Unfortunately, since 1990 and even since 2008 we have been taking many steps in the wrong direction. This should be a cause for action.
6. To come up with specifics one need only look at countries like the UK, Denmark, the Netherlands, and Sweden, that have had detailed mitigation goals and mechanisms in

place for many years. This part is not difficult. In fact in all areas but one (methane) New Zealand has significant advantages compared to all of these countries.

7. Methane is clearly difficult. Before 2000 we were already large emitters of methane, and since then we have rapidly increased our emissions. It is not true that dairy production is privileged in any way over any other food or economic activity: we went into it because it was profitable, and its externalities were not priced, not because we wanted to provide the world with calories. Imagine a hypothetical situation in which NZ farmers could switch to another product that provided more calories, but less profit, per hectare – would they take it? Even though methane is a flow pollutant, and not a stock pollutant like CO₂, its flow both within NZ and worldwide is increasing, as are atmospheric methane levels.
8. It would be very dangerous for New Zealand and for the negotiations in general if NZ were to attempt to plead that our methane emissions were a special case in some way. We should admit that we have chosen to get into a profitable, high-emission industry, and deal with it. Perhaps in the end we will decide that we want to give meat and dairy an advantage over other industries; that might involve cutting CO₂ emissions to below zero, to allow continued methane emissions.
9. We should focus on actually reducing emissions within New Zealand, and forget about dubious international trading schemes. They only make us look like we are attempting to dodge our responsibilities and may prejudice the negotiations.
10. I am 51 and well remember the days of ‘Think Big’. 30% of GDP was borrowed and spent in about 3 years in response to the oil shocks. Economists are still divided as to whether any of the projects were financially sound. The shifting of resources within our economy in order to reduce our emissions is likely to be much less than 10% of GDP a year – I would be surprised if it were as much as 1% a year – and this is not a cost, it’s a rearrangement, with many benefits all round.
11. A straight-line reduction of 80% by 2050 would mean a reduction of 40% by 2030. Unfortunately, because of our post-1990 increases, our lack of preparation, and our methane emissions, achieving this is probably too difficult for us. My submission is therefore that our contribution should be
 - (a) **a reduction of internal GHG emissions of 20% from 1990 levels by 2030.**

This should be combined with

- (b) **firm mechanisms to ensure that internal emissions reduction targets are met** (e.g. each 4 years, as is done in the UK) and with
- (c) **a much more ambitious target for 2050.**