REPORT ON NEW ZEALAND'S RECENT CLIMATE POLICY DEVELOPMENTS

Prof. Dave Frame

Professor of Climate Change
School of Geography, Environment and Earth Sciences
Victoria University, Wellington
New Zealand

NEW ZEALAND'S INSTITUTIONAL CONTEXT

1. Climate change responsibilities are devolved across a range of Ministeries, with significant roles for the Ministry for the Environment (MfE), Ministry for Business, Innovation and Employment (MBIE), Ministry for Primary Industries (MPI), and Ministry of Foreign Affairs and Trade (MFAT). In addition, government think tanks like the Productivity Commission and the Parliamentary Commissioner for the Environment (PCE) have contributed to policy debates.
2. The present Government established an Interim Climate Change Committee (ICCC) in 2018.[1] It was charged with "begin[ning] work on key areas of climate change, while the Government consultation on the Zero Carbon Bill takes place". It was also charged with delivering reports on "How surrender obligations could best be arranged if agricultural methane and nitrous oxide emissions enter into the New Zealand Emissions Trading Scheme" and "Planning for the transition to 100% renewable electricity by 2035".[2]
3. The Government is currently forming a more permanent Climate Change Commission (CCC), and expectations are that it will probably be very similar to the ICCC. There is a temptation for any Government to stack "independent" organisations with friendly faces, and the test of its independence – and hence its credibility – will be when the current Opposition are in power. The UK's CCC seems to have worked very well.[3] Attempts to create a similar organisation in Australia failed. Either outcome is possible here.
4. In future, the New Zealand CCC will be tasked with setting carbon budgets. The Government could instruct them to retain the current distinction between long-lived climate forcers (LLCFs) and short-lived climate forcers (SLCFs), or it could instruct them to ignore it, or it could leave the issue to the CCC to decide. At present the legislation preserves the distinction, so it would take a conscious choice to move away from that as a default.
5. Though the CCC will play the central role in assessing and recommending carbon budgets, its recommendations will not be binding. The Zero Carbon Act[4] (ZCA) stipulates that the CCC will be able to recommend carbon budgets to the Minister but that that the CCC does not have the ability to actually set these budgets in a binding way (Section 5J). Furthermore, it is required to consider a range of factors, such as: current scientific knowledge; existing technology and anticipated technological developments; likely economic effects; social, cultural, environmental,

[1] https://www.iccc.mfe.govt.nz/
[2] https://www.iccc.mfe.govt.nz/who-we-are/terms-of-reference/
[3] See, for instance, http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/10/The-role-and-influence-of-the-UKs-Committee-on-Climate-Change_policy-brief.pdf
[4] http://www.legislation.govt.nz/bill/government/2019/0136/latest/LMS183736.html?search=ts_act%40bill%40regulation%40deemedreg_Climate+Change+Response+(Zero+Carbon)+Amendment+Bill_resel_25_a&p=1

and ecological circumstances, including differences between sectors and regions; the distribution of benefits, costs, and risks between generations; and the Crown-Māori relationship. This implies wide consultation and the active involvement of multiple public, private, and civil society actors.

6. A range of actors have contributed thus far to the development of the ZCA, including target-setting and the development of institutions and norms. Perspectives from a range of Ministries have played key roles within the public sector. Sectoral voices and other members of civil society have also played constructive roles. The ICCC played an important, and central, but not obviously determinative role in the development of the targets and the ZCA.
7. In spite of long-standing critiques[5], the ICCC provided a traditional, Kyoto-era perspective on the important issue of gas comparison. This conflicted with and much of the expert advice in this area[6], and with the policy recommendations of the Productivity Commission and PCE.
8. Two major policy reports were prepared by publicly-funded, but independent, think tanks: the Productivity Commission and the PCE. The Productivity Commission were tasked with developing suggestions about how to transition to a Low Emissions Economy,[7] while the PCE looked more at land sector transformations, and how these fitted with climate policy.[8] On the issue of biogenic methane, both recommended splitting out the gases in the formation of targets, and both recommended some form of two-basket approach. (See links for details.)
9. Upon the passing of the ZCA, Minister of Climate Change, James Shaw, made the point that he thought contestable advice was extremely important. A possible implication is that the target-setting process needs to be flexible enough to accommodate expertise from outside the agencies charged with budget-setting.

Genesis of the Zero Carbon Act

10. The youth-led group Generation Zero were prime movers of the phrase and the spirit behind the ZCA. The Government adopted the idea and it was developed by a range of agencies, led by MfE.
11. Initial ZCA discussions seemed to be scientifically naïve, relying without reflection on the customary notion of "all gases" in CO2-equivalent form. Early discussions of how biogenic methane should be treated tended to be binary: either (Option 1) it is left out entirely, or (Option 3) it must decline to net zero.
12. As the distinction between LLCFs and SLCFs became more widely understood among policymakers, and eventually among the public after the publication of and publicity around[9] Allen *et al* 2018, a scientifically-defensible perspective in the middle gained traction among

---

[5] Shine, K. P. (2009) The global warming potential—the need for an interdisciplinary retrial : an editorial comment. *Climatic Change*, 96 (4). pp. 467-472. doi: https://doi.org/10.1007/s10584-009-9647-6

[6] e.g. Allen, M., Fuglestvedt, J., Shine, K. et al. New use of global warming potentials to compare cumulative and short-lived climate pollutants. *Nature Climate Change* 6, 773–776 (2016) doi:10.1038/nclimate2998 and Lauder, A. R. et al. Offsetting methane emissions—an alternative to emission equivalence metrics. *Int. J. Greenh. Gas Contr*. 12, 419–429 (2013).

[7] https://www.productivity.govt.nz/assets/Documents/4e01d69a83/Productivity-Commission_Low-emissions-economy_Final-Report.pdf

[8] https://www.pce.parliament.nz/publications/farms-forests-and-fossil-fuels-the-next-great-landscape-transformation

[9] e.g. https://www.rnz.co.nz/national/programmes/ninetonoon/audio/2018648399/methane-less-of-problem-than-c02-for-the-climate and https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12064270 and, later, after the debate moved into policy as well as science, https://www.nzherald.co.nz/opinion/news/article.cfm?c_id=466&objectid=12228595.

policymakers, and the MfE consultation document on the Zero Carbon Act added an intermediate possibility: Option 2: to achieve net zero LLCF and to stabilise emissions of SLCFs.

13. Option 2 probably acted as a proxy for more sophisticated strategies of suggesting some level of biogenic methane emissions reduction in the range 0-100%. Many submissions from scientists fitted with Option 2, or with some compromise between Options 2 and Option 3.
14. The political conversation shifted to the Option 2-Option 3 space, particularly with the publication of the Productivity Commission and PCE reports which argued for two-basket approaches to emissions in New Zealand. In addition, well-aligned submissions on the ZCA from Crown Research Institutes like NIWA[10], GNS Science[11], and SCION[12], and from climate science experts[13], helped create a conversation about reductions in biogenic methane, but not to zero, and this idea became quite well socialised among the policy community.
15. While the reluctance to embrace Option 3 generated considerable pushback from some activists and others who had not caught up with the long-short distinction, the emergence of the zone between Options 2 and 3 created a space for political negotiation between Government, Opposition, environmentalists, policy thinkers, and sector representatives.
16. Because climate policy is long-term issue requiring active policy choices from a sequence of Governments over many decades, bipartisanship is a crucial quality. The Government advertised this as a bipartisan issue and the Opposition endorsed this view, in spite of occasional stage whispers to voters about the cost of it all, and the final reading of the Zero Carbon Act passed 119-0, with one abstention.
17. Leader of the Opposition, Simon Bridges, said of the ZCA that "The framework is right. Certainty and stability around these things is right. And we would not change most of it - really just around the methane targets and food production."[14] They have made it clear they would like those targets softened and referred to the CCC. Even though they have signalled they will address this in future, it is safe to conclude that the unopposed passing of the ZCA was possible in part because of the political space opened up by a more sophisticated treatment of biogenic methane. It is virtually certain that this bipartisanship would not have held if biogenic methane had been assigned a net zero target.

POLICY-TARGET INTERACTIONS

18. The New Zealand approach of comparing the fit between national targets and global targets as a prime (perhaps sole) test of target adequacy is a hostage to fortune: if global emissions do not reduce at the level suggested by the (e.g. 1.5°C or 2°C) global target, then the country using this as a benchmark is, in effect, committing to an ever-reducing carbon budget irrespective of whether they themselves are reducing emissions at a fast rate. Because the target is likely to become ever more stringent even if a country is "on course" with its emissions reductions, this is unlikely to become a popular way of setting targets.

---

[10] https://www.mfe.govt.nz/sites/default/files/Organisations_3/12567_NIWA_Redacted.pdf
[11] https://www.mfe.govt.nz/sites/default/files/Organisations_3/12698_GNS_Science.pdf
[12] https://www.mfe.govt.nz/sites/default/files/Organisations_3/12518_Scion.pdf
[13] https://www.mfe.govt.nz/sites/default/files/media/Consultations/13001_Myles_Allen%2C_Michelle_Cain%2C_David_Frame_and_Adrian_Macey.pdf and https://www.mfe.govt.nz/sites/default/files/media/Consultations/02090_James_Arthur_Renwick_Redacted.pdf and https://www.mfe.govt.nz/sites/default/files/media/Consultations/12013_Dave_Frame_and_Adrian_Macey.pdf
[14] https://www.stuff.co.nz/national/politics/117244331/national-will-support-climate-change-zero-carbon-bill

19. The UK framed its targets around halting the UK's contribution to further warming by 2050 or before.[15] Many different approaches are possible. A small range is outlined in the table below. In general, the more a national target is derived from the global situation, the less it will take account of national circumstances, and vice versa.
20. In particular, setting targets and then expecting policies to fall into line ignores domestic (and probably international) political economy considerations; and expecting policies to inform targets absent of international mitigation contexts is potentially blind to emissions gaps (or warming gaps, if the targets are expressed and then aggregated in warming).
21. It is unlikely that countries will, in general, converge on a single approach; and it is also perhaps unlikely that countries will in general use numerical algorithms to set targets. In general we should expect a sort of dialogue between targets, policies, and national circumstances and capabilities, rather than for any one of these to act as a master over the other two.

TARGET SETTING

22. The Government explicitly linked the emissions reductions target to the 1.5°C aim in Article 2 of the Paris Agreement. The split-gas target was designed with this in mind, and in announcing the Act, the Minister of Climate Change, James Shaw, linked them: "*This bill outlines an emissions reduction target for New Zealand, in line with keeping global warming to under 1.5 degrees. The target has two components: it will seek to reduce our emissions of all greenhouse gases, expect biogenic methane, to net zero by 2050. It will also seek to reduce our gross emissions of biogenic methane within the range of 24 to 47 percent below 2017 levels by 2050*".[16]
23. This approach – linking emissions reduction goals with global temperature goals – was based on asking "if the whole world adopted our targets, and achieved them, would we stay under 1.5C°?"
24. This was a new approach. New Zealand's initial NDC to 2030 (set under the previous National Government) had been consistent with the 2°C target, though this does not appear to have been a consequence of a formalised process constructed with this outcome in mind.
25. While the 1.5°C-compatible target was the intention of the Government, they acknowledged that they had not organised the climate science-facing policy shops around that question. As the Prime Minister, Jacinda Ardern, acknowledged that the Government had relied on the Intergovernmental Panel on Climate Change (IPCC) for the -24-47% range, noting that in the future, budgeting questions would be handled by the Climate Change Commission.

OPTIONS FOR FRAMING NET ZERO TARGETS

26. There are many ways climate targets could be set. The could be set by starting with climate considerations such as warming, and then mapping warming aspirations back to policy settings, or they could begin with policy and map out to a projected or implied warming.
27. Many countries have developed NDCs around emissions. Recently this has included NDCs that specify "net zero" emissions targets, and in New Zealand and in the UK these have been mapped across to climate (warming) implications.[17] The UK announced the intention to "set and vigorously pursue an ambitious target to reduce greenhouse gas emissions (GHGs) to 'net-zero' by 2050, ending the UK's contribution to global warming within 30 years." New Zealand's ZCA targets would, if met, halt warming at around 2025 levels.

[15] See pages 49-51 of the report at https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/
[16] https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansD_20190521_20190521
[17] See A. Reisinger, S. Leahy, 2019, Scientific aspects of New Zealand's 2050 emission targets.

28. Emissions or warming targets – which can be equivalent if appropriate metrics are chosen[18] – can be set by reference to global emissions, by reference to a subset of countries' emissions, or unilaterally. Targets could also be set with consideration of two or more of these at once.
29. One way of setting targets is to use global requirements for the satisfaction of the Paris Agreement. Article 2 of the PA expresses a collective aim to halt warming within a band of between 1.5°C and 2°C above pre-industrial levels. Countries can then ask if their settings, applied globally, would be consistent with halting warming somewhere in this range; consistent, presumably, with the country's interpretation of PA Article 2.
30. While still setting emissions targets, the country could choose a unilateral warming or net zero target, either by reference to date (e.g. net zero in 2050) or warming (e.g. net zero by 1.5°C) or by reference to cumulative emissions (e.g. net zero by the time the world has emitted 1.2TtC). Note that only the first of these is truly unilateral: because the behaviour of others determines the date at which warming reaches 1.5°C or cumulative emissions reach 1.2TtC, the target is, in a sense, coupled with global emissions progress.
31. Alternatively, targets could be set with reference to the targets of others. This may be attractive if countries are attempting to keep in step with the efforts of other leading countries. So a country could choose to set its target pegged against another: or it could aim to halt its warming at the same time as its main trading partners. This logic could also be used, and is possibly more attractive, to peg prices or border adjustments or policies to those of other leading players.[19]
32. The table shows some possibilities, intended to stimulate debate and the development of further options. The framing in the left-hand column and the target variable in the columns determine the degree to which the target is unilateral, coupled to global or regional progress.

	Halt Warming	Net Zero
By date (e.g. 2050)	Unilateral†	Unilateral†
By reference group performance	Coupled-subset	Coupled-subset
By time warming reaches a given level (e.g. 1.5°C)	Coupled-global	Coupled-global
By time global emissions reach specified level (e.g. net zero)	Coupled-global	Coupled-global
By consistency of national targets with global target (e.g. 1.5°C)	Global	Global*

33. The cell with the asterisk approximates New Zealand's target, and the cells with daggers approximate the UK's aim. Many intermediate options are available. Because it is unilateral, the UK's approach is relatively insensitive to the choices of other countries. Because remaining carbon budgets are almost entirely dependent on the choices of others, New Zealand's target is largely determined by the actions of others.
34. Many other options are possible, including hybrids. Furthermore, the details of targets are sensitive to choices around the details of "net zero" targets: a net zero GWP100 target has different warming implications, and different carbon budget implications, than a more sophisticated target which takes account of the different dynamics of LLCFs and SLCFs.
35. Whatever choices are arrived at, it seems important to be fully aware of the options and the consequences of committing to a given way of constructing the target, and that the underlying

[18] Cain, M., Lynch, J., Allen, M.R. et al. Improved calculation of warming-equivalent emissions for short-lived climate pollutants. *npj Clim Atmos Sci* **2**, 29 (2019) doi:10.1038/s41612-019-0086-4
[19] The literature on climate clubs is an example of this (e.g. Nordhaus, William. 2015. "Climate Clubs: Overcoming Free-Riding in International Climate Policy." American Economic Review, 105 (4): 1339-70. doi: 10.1257/aer.15000001).

assumptions and implications of the approach adopted are revisited periodically, since these could potentially be a source of unintended consequences.