KEI MUA I TE AROARO O TE RŌPŪ WHAKAMANA I TE TIRITI O WAITANGI	**WAI 3325**
	WAI 2607
BEFORE THE WAITANGI TRIBUNAL	

IN THE MATTER OF	The Treaty of Waitangi Act 1975
AND	
IN THE MATTER OF	The Climate Change Priority Inquiry
AND	
IN THE MATTER OF	A claim by Tane Cook on behalf of himself and Mataatua District Māori Council (Wai 2607)

SPEAKING NOTES FOR IVO GEOFFREY BERTRAM

18 November 2025

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INTRODUCTION

1. My name is Ivo Geoffrey Bertram. I refer to myself as Geoff.

2. The first of my ancestors to settle in Aotearoa New Zealand arrived in Wellington from Scotland in January 1840. All the rest, from Scotland and England, were here by the mid-1880s. I live in Wellington/Te Whanganui-a-Tara.

3. I am an academic economist. I hold degrees from Victoria University of Wellington and Oxford University, including a DPhil from the latter. I taught Economics at Victoria from 1976 until 2009, then held a position in the Institute for Governance and Policy Studies until 2023. I am currently Visiting Scholar at the School of History, Philosophy, Political Science and International Relations.

4. I have carried out extensive research on the economics of climate change, starting in 1989 with a report on policy options commissioned by the Ministry for the Environment.

    a. In 1992 I published one of the first peer-reviewed international academic journal articles on the design of a global cap-and-trade system for greenhouse gases.

    b. In 1993 I co-authored a general-equilibrium modelling study of the potential impact of carbon taxes on the New Zealand economy, in which we found that the effects on GDP could be positive or negative depending on how the policy was designed and how the revenues from a carbon tax were spent by Government. To prevent strong em0issions-reducing policies from reducing GDP it is essential to accompany them with equally strong measures driving positively the transition to a low-carbon economy. This remains the case today, and I shall return later to the issue of good policy design, with reference to impacts on both GDP and Māori.

    c. Following introduction of the New Zealand Emissions Trading Scheme, in 2010 I co-authored (with Simon Terry) *The Carbon Challenge*, a book that critically analysed the NZETS in detail and foreshadowed the problems that have since rendered it virtually ineffective in its ostensible goal of reducing carbon emissions.

d. I have maintained a research interest both in the evolution of climate policy and in the statistical record of emissions, which is the central topic of my evidence.

e. I have also, since 1980, carried out research and published extensively on the structure and operation of the New Zealand electricity industry, another area on which I shall comment later.

5. I have provided for this inquiry an affidavit dated 24 August 2024 (#A5) and a further updating affidavit dated 28 April 2025 (#A5(a)).

6. My evidence first addresses (2024 affidavit sections 4 and 5) the question of what the spirit and letter of the Paris Agreement of 2016 require of the New Zealand Government. I consider that (in common with numerous other countries) this country has failed to live up to its promises.

7. I then review (2024 affidavit sections 6-8) the statistical record of emissions to show how the New Zealand Government has used complex accounting procedures to conceal the basic truth that there has to date been no really serious effort to shift the dial on this country's gross carbon emissions.

8. I then analyse the various emissions targets and budgets set by the Government.

9. I shall then reply to the evidence of Dr Kieran Murrray provided on behalf of the Government. I shall also make reference at various stages of my presentation to the evidence of Hemi Smiler, Kate Harrison and Helen Plume also provided on behalf of the Government.

10. At the outset a clear distinction has to be drawn between mitigation and adaptation. Adaptation, which currently dominates most policy discussion in this country, is a matter of domestic arrangements to cope with the impact of climate change and is not the central concern of either the Kyoto Protocol or the Paris Agreement though it is included in both. Mitigation – the actual reduction of each nation's carbon footprint – is the subject of my evidence.

Inadequate ambition and commitment

11. The Paris Agreement requires that each party's Nationally Determined Contribution must "reflect its highest possible ambition". Advice to the New Zealand Government in a Cabinet Paper released in 2018 translated this as each Party "contributing to the maximum extent they can". Given the recognised urgency of reducing global emissions, these words imply an unequivocal commitment of resources and policy leverage to the task of mitigating emissions.

12. My evidence (paragraph [4.5]) sets out three tests of genuine policy commitment:

    a. Are the full resources of the nation engaged, with active direction and leadership from Government? I cite the example of the 2020 lockdown that kept Aotearoa-New Zealand COVID free for the first year of the global pandemic.

    b. Is there certainty for the private sector regarding policy consistency, sustainability and enforcement over time? I cite here the role of the Reserve Bank of New Zealand in setting monetary policy.

    c. Is the policy legally binding on the ministers and officials responsible for implementing it? My evidence cited the principles of Te Tiriti o Waitangi.

13. My evidence is that this country's climate-change action to date fails on all three of these tests. Government leadership and direction has been half-hearted at best and absent at worst. The central policy instrument – the NZETS – has been ineffective, undermined from the start by rent-seeking, special-interest favours, unpredictable changes in the rules, and the absence of any binding cap on emissions. The Zero Carbon legislation, contrary to the claims of its promoters, has been shown in successive court judgments to be aspirational, not binding. The only period when the New Zealand Government has entered into any legally binding international obligation to cap emissions was Commitment Period 1 (CP1) of the Kyoto Protocol, from 2008 to 2012. Since then, the New Zealand Government has steadfastly refused to be legally bound to anything except statistical reporting of its emissions inventory, as described in the evidence of Helen Plume at paragraphs [4] and [16].

14. New Zealand consistently scores poorly in global rankings of climate policy. Typical verdicts are "highly insufficient" (Global Action Tracker), and "low" performing (Germanwatch). These judgments pre-date much of the recent weakening of policy effort by the current Government. I note that the 2024 Germanwatch Climate Change Performance Index (shown in paragraph [5.8] of my August 2024 affidavit) ranked New Zealand at 34th of 67 countries, but in the 2025 edition of the Index New Zealand has dropped to 41st of 67[1].

15. Mr Hemi Smiler in his evidence at paragraph [39] says "Determining New Zealand's highest possible ambition is a political judgement in balancing acceptability, feasibility and affordability." I disagree. The central consideration is feasibility: what can this country do if it seriously commits? "Acceptability" is an amorphous, subjective concept that is heavily affected by the quality and strength of political leadership – it is not an objective, exogenous constraint on what can be done, as Mr Smiler appears to suggest. Nor is "affordability". To present "highest ambition" and "maximum contribution" as a balancing exercise is to confuse ambition with compromise.

Misleading use of obscure emissions accounting

16. It is common in Government presentations on this country's greenhouse gas emissions for the term "net emissions" to be used in two completely different ways, generally without clear explanation when shifting from one to the other. For example, in the evidence of Hemi Smiler, numbers for the internationally-standard definitions of gross and net emissions are set out in his paragraphs [15]-[22], but then in paragraph [34] he introduces - without explanation – New Zealand's emissions-reduction targets as "net targets" designed to "reduce net emissions cost-effectively".

17. From that point on Mr Smiler's evidence uses the term "net emissions" to refer to a measure that is no longer the same as the one described in paragraphs [15]-[22]. On the contrary, the New Zealand Government's targets are specified in terms of "target-accounted net emissions", which is a bespoke locally-created measure that differs both

[1] Ccpi.org/wp-content/uploads/CCPI-2025-Results-1.pdf accessed 3 November 2025 p.7.

in magnitude and in trend from the internationally-standard net-emissions measure described in Mr Smiler's paragraphs [15]-[22]. This juxtaposition of two quite different measures under the same label is standard practice in our Government's official communications and has the effect of producing confusion in the public record. (One example is paragraphs [74] and [77] in the evidence of Helen Plume, which uses the term "reduction of net greenhouse gas emissions" to refer to a target which does not in fact involve any reduction in net emissions, but rather a comparison between a gross-emissions starting point and a target-accounted-net-emissions endpoint.)

18. Paragraph [6.14] of my evidence provides a graphical presentation of those three statistical measures of emissions: actual gross and net emissions under the standard internationally-recognised definitions, and the New Zealand Government's target-accounting measure which in my evidence has been labelled TAN (target-accounted-net) emissions. In the chart below I have updated the gross and actual-net numbers to 2023 using the latest Inventory published in April 2025. The target-net series is again drawn from the Second Emission Reduction Plan tables, based on earlier inventory numbers, which accounts for some of the mis-match between the gross and TAN series in the early years.

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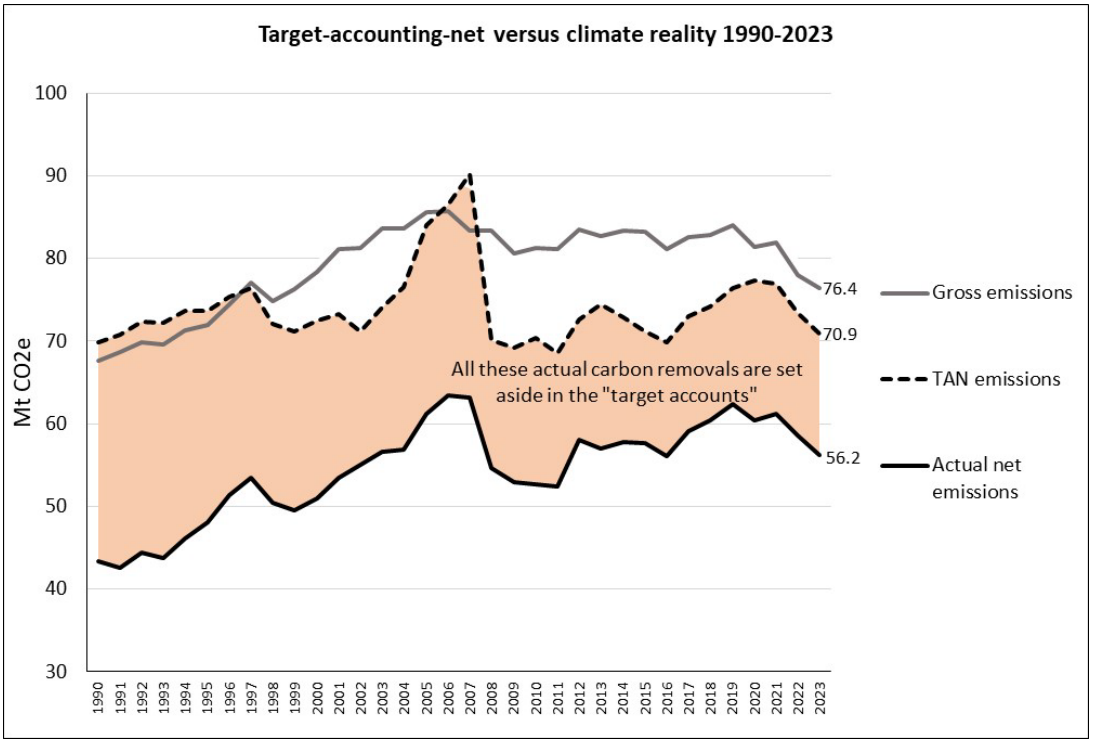

19. This chart, to my knowledge, has never appeared in any of the New Zealand Government's publications, although all three statistical series are readily available. Typically (as in the evidence of Mr Smiler), a chart is presented with actual gross and net emissions, and then TAN emissions are shown separately, a procedure which has the effect of taking those TAN emissions numbers out of context. My chart is an attempt to remedy this.

20. The New Zealand Government's TAN calculation produces a series for so-called "net emissions" that differs in both its level and its trend from the actual net emissions that "the atmosphere sees". This TAN series is then used for the purpose of claiming compliance with successive New Zealand commitments under the UNFCCC. The difference between the two versions of "net emissions" is shaded in my chart.

21. Comparing 2023 with 1990, gross emissions were 12% higher (from 68 to 76 Mt). Net emissions, using the standard international definition, were 30% higher (from 43 to 56Mt). But TAN emissions as calculated by the New Zealand Government were less than 2% higher (from 89.8 to 70.9Mt). What was in fact a large increase in New Zealand's impact on the global atmosphere has been made to disappear from the statistical picture by opportunistic deployment of an accounting device.

22. As my chart shows, the TAN accounting procedure consists of setting aside a large (but diminishing over time) volume of carbon absorption by growing forests, by excluding all forest planted before 1990. This is allowed under the Kyoto Protocol rules, for the formal process of reporting on compliance with commitments but has the effect of misrepresenting "what the atmosphere sees" and has enabled the New Zealand Government to loudly proclaim achievements that were in fact empty of genuine ambition.

23. All New Zealand emission targets to date have been set as "gross-net" targets, starting from gross emissions in a base year and targeting TAN emissions in some later period. This is a radical departure from the common practice under which other countries specify targets in terms of reduction of actual gross emissions, or reduction of actual net emissions, using the international definitions. New Zealand's practice of taking a particular base-year gross-emissions number and then targeting a lower TAN number

has been described by Climate Action Tracker as “misleading” and I agree with this description (my evidence, paragraph [6.16]).

24. In the evidence of Helen Joan Plume, there is an extensive defence of the accounting procedures used by New Zealand in both setting and then reporting on its targets under various international agreements. In particular her paragraphs [118]-[135] make sweeping statements to the effect that New Zealand has complied with all the technical requirements set out in those agreements, and throughout her evidence (especially paragraphs [40]-[43] in relation to the 2013-2020 target) she lays heavy stress on the fact that official reviewers have accepted that the New Zealand Government’s emission accounts are compliant with the letter of the agreements. Such compliance with the letter of the law has to be distinguished from compliance with the spirit of the various agreements and equally has to be distinguished from genuine ambition to achieve emission reductions. Ms Plume’s evidence in general I consider typically reflects the public stance of the New Zealand Government in that: superficially-impressive general claims, vast amounts of technical detail, and declarations of compliance with specific provisions in the international documents, are presented as though this suffices to justify the actual decisions and commitments chosen.

25. I take issue with Ms Plume when she says at paragraph [125]: “Given that gross-net accounting was mandatory for Parties that had targets under the Kyoto Protocol New Zealand had no choice but to apply the gross-net accounting approach to its CP1 target which covered the period 2008 to 2012.” In fact gross-net accounting was not mandatory under the Kyoto Protocol for countries that did not adopt a gross-net target for CP1, and New Zealand would have been free to adopt a gross-gross or net-net target for CP1 as many other countries did.

26. As Ms Plume notes (paragraphs [32]-[33] of her evidence) New Zealand’s adoption of gross-net accounting in its UNFCCC target for Kyoto Commitment Period 2 (CP2) was entirely voluntary, not mandatory at all. The same applies to our Nationally Determined Contribution under the Paris Accord.

27. A key point here is that adoption of a gross-net target did not foreclose the option of aiming to meet the target purely or primarily through gross emission reductions, leaving

the credits gained through forest growth available to be sold internationally for a net gain. In fact, in the late 1990s (as described in Chapter 3 of our 2010 book *The Carbon Challenge*) New Zealand initially pledged not to use forestry credits to meet its CP1 target – a pledge that was abandoned once it became apparent that gross emissions would be barely nudged down by the very limited policy initiatives actually adopted between 1997 and 2008.

28. In contrast to Ms Plume's sanguine account of official acceptance of the New Zealand Government's accounting within the UNFCCC and IPCC reviewing procedures, the evidence of Ms Kay Margaret Harrison at paragraphs [26]-[34] describes the public consultation in 2015 during preparation of New Zealand's first Nationally Determined Contribution, and notes (paragraph [29]) that "[t]he majority of participants thought the proposed targets inadequate and lacking sufficient ambition", and that "[m]any participants … felt the Government was not interested in their views, especially since Ministers did not attend any of the hui". As one of those attending, and speaking at, the Wellington meeting mentioned by Ms Harrison, I can confirm that this is an accurate account, and that (as indicated in Ms Harrison's paragraphs [33] and [34]) the Government made no changes in response to the consultation feedback.

29. Returning to the chart in my paragraph [18] above, for the Kyoto First Commitment Period of Kyoto, 2008-2012, the New Zealand commitment was that TAN emissions should be no greater than gross emissions in 1990. This was easily achieved with no need for policy intervention, even though gross emissions were up by 20%, and actual net emissions by 23%, because of the growth of forests planted from 1990 on combined with exclusion from the accounts of the growth of pre-1990 forests. (I should note here that the target-accounting procedure used to record compliance with the CP1 commitment was different from the one underpinning the series plotted in my chart, but the result was the same: the target was met without reducing gross emissions.)

30. For the Second Commitment Period 2013-2020, the New Zealand commitment was stated as "reduce gross emissions to 5 percent below 1990 levels over the period 1 January 2013 to 31 December 2020" (paragraph [6.20] of my evidence), but this was stated to be subject to "applying the Kyoto Protocol framework of rules", and turned

out to mean no reduction at all in gross emissions. Average annual gross emissions 2013-2020[2] were 22% higher than the 1990 level, yet the target was stated to have been met, because instead of actually reducing gross emissions, the target was redefined as keeping TAN emissions 5% below 1990 gross emissions. In my view the clear and unequivocal meaning of the words "reduce gross emissions" was flatly incompatible with adoption of a gross-net target, and the "commitment" was thus laid out in terms that were seriously misleading.

31. In the event, TAN emissions 2013-2020 turned out higher than the 1990 benchmark, but the commitment target was declared to have been met by using up surplus emission credits from CP1 (another application of the "Kyoto framework of rules"). As section 7 of my evidence describes, that surplus of credits had been achieved by opening the New Zealand market to imports of "hot air" credits from Russia and Ukraine – credits that lacked integrity and were rejected by most other Parties to the Kyoto Protocol.

32. For the years since 2020, two sets of targets apply. The first of these is New Zealand's Nationally Determined Contribution (NDC) under the Paris Accord. The second is the sequence of five-year[3] emission budgets produced under the Climate Change Response (Zero Carbon) Amendment Act 2019.

33. The NDC target was, as usual, obscurely stated (paragraph [9.6] of my evidence), but is most easily envisaged as a promise to restrict total TAN emissions over the ten years 2021-2030 to 571 million tonnes, with no firm prescription for the year-by-year path that emissions should follow. In paragraph [9.11] of my evidence, I have shown the NDC budget as a straight-line declining emissions track starting at 68.9 million tonnes in 2021 and ending at 43.3 million tonnes in 2030. With this NDC budget inserted into my chart of historic and projected emissions, it is clear that under even the most optimistic TAN projections there is no chance whatever of meeting this target without again (as in Commitment Period 2) relying on imported carbon credits (resorting, in other words, to

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3 Four years in the case of the first budget, 2022-2025, because of time elapsed between the legislation and its implementation.

the Kyoto rules). Estimates of the likely extent of the shortfall range between 80 and 114 million tonnes.

34. As paragraph [7.14] of my evidence notes, Treasury in 2023 estimated the cost of importing offshore carbon credits on this scale as between $3 billion and $24 billion. The same numbers appear in paragraph [38] of Mr Smiler's evidence. This potential cost of fulfilling the NDC commitment has not to date appeared as a contingent liability in the Crown accounts because, as paragraph [7.15] of my evidence explains, the NDC is not legally binding and can be changed or abandoned at any time by the New Zealand Government. Thus, although the NDC target is ambitious on the face of it, it lacks the teeth to incentivise really serious policy on reducing gross emissions. Because the fiscal consequences of failing to meet the NDC target by domestic emission reductions are large enough to make the target itself vulnerable to opportunistic redefinition or abandonment by Government, the target itself has lost most of its credibility as a driver of economic adjustment

35. Turning to the three domestic emission budgets produced to date under the 2019 Zero Carbon legislation, these are set out in paragraph [10.1] of my evidence. They are specified in terms of total TAN emissions for each period, with no targets for actual gross or net emissions. The TAN totals are 290 million tonnes 2022-25, 305 million tonnes 2026-30, and 240 million tonnes 2031-35.

36. These domestic emission budgets, set in 2022, are less ambitious than the NDC but are subject to slightly greater accountability for the responsible Minister, who must account to Parliament for any failure (but is not legally bound to actually achieve the targets). In terms of annual average emissions, the NDC target equates to an annual average of 57.1 million tonnes (paragraph [9.8] of my evidence) while the first two domestic budgets are for an annual average of 66.1 million tonnes (a total of 595 million tonnes over nine years (paragraph [10.1] of my evidence, with the correction given in my supplementary evidence dated 28 April 2025,#A5(a), paragraph [6.1]). Thus, the domestic budgets are 66.1 – 57.1 = 9 million tonnes per year looser than the NDC target, which means that while projected TAN emissions are expected to fall short of the NDC

budget by up to 100 million tonnes, the first two domestic budgets are expected to be met, albeit mostly by forest growth rather than gross-emissions reduction.

37. As the projections in the Second Emissions Reduction Plan show (see the chart in paragraph [10.11] of my evidence), the dominant means of meeting the three domestic emission budgets is intended to be carbon absorption by forests rather than any dramatic reduction of gross emissions. Gross emissions by 2050 are projected to be not even 20% lower than they were in 1990. The zero-carbon goal is to be pursued by means of forestry, and if necessary, importing offshore carbon credits – not by addressing the task of transitioning the economy off fossil fuels and high-emissions agriculture.

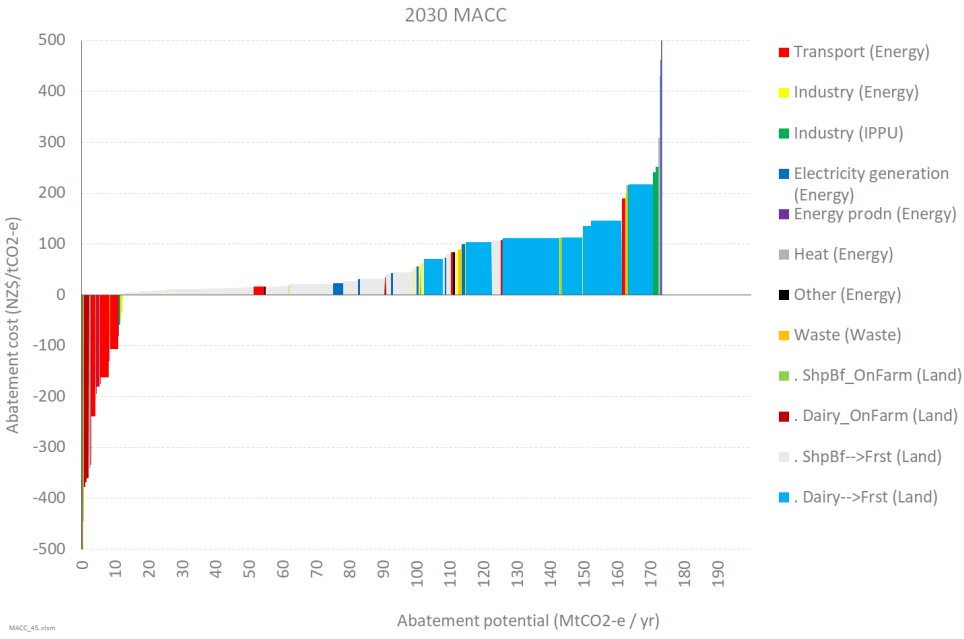
38. It is true, as Hemi Smiler emphasises in his evidence (paragraphs [17] and [18]) that since 2021 all emission series have been trending down, and it is quite likely that this reflects, to some extent at least, the impact on private-sector expectations and behaviour of the Zero Carbon Act and the rhetorical commitment of the 2017-2023 Labour-led Government. But this should not be mistaken for actual policy ambition. The projected track of gross emissions is clear evidence of the lack of genuine ambition in the Government's climate policy, even before the recent decision to leave agriculture out of the NZETS and cut back on incentives to decarbonize other sectors.

39. As one indication of the degree to which there is low-hanging fruit in the field of gross emission reduction, I reproduce here a chart from the Ministry for the Environment's 2020 report on Marginal Abatement cost[4], showing the estimated cost per tonne of reducing gross emissions in different industries. As is typical for exercises of this kind, the chart shows substantial scope for emissions to be reduced at negative cost, with between 10 and 15 million tonnes per year of such win-win abatement estimated in dairying, heating, transport and industry. In dairy farming, for example, reduced stocking rates combined with low-nitrogen feed supplements and reduced use of nitrogen fertilizer were estimated to enable a reduction of more than 2 million tonnes

[4] https://environment.govt.nz/assets/Publications/Files/marginal-abatement-cost-curves-analysis_0.pdf accessed 3 November 2025.

of emissions while lowering the cost of production[5]. In road transport, electrifying the light and medium vehicle fleet could cut gross emissions by up to 12 million tonnes while reducing vehicle owners' costs.

Figure 5: Summary MACC for all sectors in 2030



Source: Ministry for the Environment *Marginal abatement cost curves analysis for New Zealand: Potential Greenhouse Gas Mitigation Options and their Costs* January 2020 p.12.

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40. A further 80 million tonnes per year of estimated abatement was costed at less than the current cost of units in the NZETS. Insofar as these cost estimates are realistic, the theoretical implication is that a carbon price of $50 or more under the NZETS should, if sustained, provide sufficient incentive for private-sector business to adopt the relevant technological changes, because doing so would be cheaper than purchasing emission units.

41. Results of this kind need to be treated with caution, because they typically underestimate the short-run transaction costs and implementation costs of the modelled technologies. This, however, points not to ignoring the existence of economically attractive abatement, but rather towards an important role for determined Government action, via tools such as subsidies and regulations, to promote and accelerate private action to bring gross emissions down.

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5 Ibid. pp.13-18.

42. Mr Smiler at paragraph [24] notes that "New Zealand's gross emissions have increased since 1990, whereas in many other developed countries, emissions are now below 1990 levels" and then states that "[t]he difference can be explained by the different emission profiles". I disagree. In my opinion the difference is due primarily to the absence of serious emissions-reducing policy in this country.

Thinking about alternative policies

43. This brings me to the evidence of Dr Kieran Murray which I have read.[6] In particular, I take issue with his assertions that:

    a. "none of the statements of evidence (listed in paragraph [10] above) provide evidence or analysis that climate outcomes for Māori would be better, or access to international markets improved, were the government to take the actions the authors advocate" (Murray paragraph [34]); and

    b. "the experts identified in paragraph [10] pay little attention to the economic costs of the actions they seek" (Murray paragraph [43]).

44. As one of the experts he identified, I feel bound to respond to these statements. It may well be true, as Dr Murray argues at his paragraphs [34] and [37], that the stronger action to reduce New Zealand emissions advocated in the evidence of myself and the other experts listed in Dr Murray's paragraph [10] would not materially improve *climate* outcomes for the Māori (or anyone else), given that New Zealand is only a marginal contributor to the global climate-change outcome and that successful climate-change mitigation on the global scale requires a collective effort by the nations of the world, of which New Zealand can be only a minor part. It is definitely not true, however, that stronger climate policy must necessarily be "detrimental for the Māori economy and for Māori in the economy", as Dr Murray suggests.

45. These two entirely separate issues are rolled together in Dr Murray's paragraph [37], despite his recognition (in the heading above his paragraph [32]) that they need to be clearly distinguished. The impact of New Zealand policy on "climate outcomes" is

[6] Wai 3325, #A127, Brief of Evidence of Kieran Murray, dated 30 September 2025.

inevitably slight. The domestic impact of policy choices is large. When turning to the latter - the impact of the New Zealand Government's policy choices on groups within the New Zealand economy - it is unfortunate that Dr Murray has framed his discussion entirely in terms of the possible negative impacts of bad policy choices, rather than addressing the ways in which properly-designed climate policy could have positive rather than negative impacts on Māori and other groups within the economy.

46. Focusing on the reference to "international markets" in Dr Murray's paragraph [34], in my affidavit dated 26 August 2024, #A5:

    a. I referred (at my paragraph [14.2]) to a 2018 Vivid Economics study which indicated that the cost of reducing gross carbon emissions in the New Zealand economy was likely to be lower than the global carbon price under the Paris Agreement out to 2050;

    b. I described (my paragraphs [7.1]-[7.7]) how, when the New Zealand market for carbon credits was fully opened to the international market price during the Kyoto First Commitment Period 2008-2012, the effect was to drive the local carbon price down;

    c. I cited (footnote 45 to paragraph [7.14]) a Climate Change Commission estimate of the global price for carbon-removal units of $140 per tonne, roughly three times the NZETS price, which implied that opening the New Zealand market to the world now would drive the local carbon price up rather than down;

    d. I noted (paragraph [10.18]) that "Internationally there will be strong pressures at work to drive up the price of carbon emissions and carbon-absorption credits, and insulating the domestic NZETS price paid to forestry owners from this international market trend will be difficult. Only by barring New Zealand forest owners from participating in the international market for carbon credits will it be possible to prevent the local price from rising to the export value of carbon offsets."

47. The fact that the international carbon price is now higher than the NZETS price means that the effect of opening up access to international markets today would be not to

reduce, but to raise substantially, the value of emission reductions of the sort provided by forestry operations in New Zealand, including Māori forestry. Current Government policy seems to envisage paying the international price for units purchased from offshore to cover a shortfall on New Zealand's NDC target but not rewarding domestic forestry carbon absorption at the same price.

48. Blocking New Zealand forestry owners, including Māori, from selling their carbon absorption at the world market price, and forcing them to accept only the capped NZETS price, would involve expropriation of potential export earnings – sums that could be earned by forest owners if their sequestration services were sold to overseas buyers paying world prices. The Government's expectation in ERP2 of an NZETS price falling to around $50 per tonne and remaining there until 2050 (referenced in paragraph [10.12] of my evidence) implies a widening gap between the NZETS reward to forest owners and the value of their sequestration on the world market. As paragraph [2.6] of my supplementary affidavit dated 28 April 2025 pointed out, "th[e] idea of a steadily falling domestic carbon price as world carbon markets tighten does not make economic sense". The implicit expropriation of forest-owners' potential incomes, for the benefit of local polluters paying only the NZETS price for their emissions, can be calculated as the difference between the world price and the NZETS price multiplied by the volume of carbon absorption by forestry.

49. A climate-policy package incorporating vigorous action to reduce gross emissions, as advocated in my previous evidence, could easily – and arguably should – include pricing forestry credits at parity with the international price at which Government is able to purchase carbon credits internationally, or else allowing forest owners themselves to trade on the international carbon market. Mr Ballingall's modelling (enthusiastically adopted by Dr Murray at his paragraphs [44]-[45]) of scenarios in which the carbon price to foresters is driven down relative to the NZETS price, predictably produces substantial negative impacts on the Māori economy. The same modelling procedure, applied to a situation where a world price above the current NZETS price is paid for forestry absorption, would naturally produce substantial gains.

50. Dr Murray in his paragraph [41] acknowledges my argument against reliance on forestry as the primary means of meeting New Zealand's carbon-abatement targets. In his paragraph [43] he then accuses me and other experts of paying "little attention to the economic costs of the actions they seek", and specifically of not "consider[ing] how the stronger action they advocate would impact outcomes for Māori." He then goes on (his paragraphs [44]-[45]) to cite calculations of the cost to Māori "if NZ ETS settings are changed to exclude or materially reduce exotic forests". It is clear from the context that Dr Murray has assumed that removal of exotic forestry from the NZETS would not open the way to exporting forestry credits to earn the world market price. This assumption seems extreme and not clearly warranted. Far from "paying little attention to the costs" of actions that I recommend, I focus rather on the foregone export earnings in global carbon markets that are the inevitable consequence of failure by policymakers to tackle the urgent task of bringing local gross emissions down, and thereby freeing-up forestry carbon credits to be sold offshore.

51. I find it surprising that Dr Murray has not attempted, in his evidence, to specify a set of rigorous carbon-mitigation policies that might be implemented in Aotearoa/New Zealand without the alleged damaging consequences for Māori that lie at the centre of his argument. Policy design, after all, is a matter of balancing priorities and interests, and a New Zealand Government that was committed both to reducing gross carbon emissions and promoting Māori economic development should have no difficulty in designing policy to achieve both ends simultaneously.

52. In the evidence of Dr Cole, for example, at paragraph [24] he states that "the Crown has failed to respond to known climate change risks at a time and in a way that evidenced its Treaty/Te Tiriti responsibilities to do everything possible to protect the Māori Treaty/Te Tiriti partner from **harm** caused by (i) the consequences of climate change and (ii) unwanted socio-economic impacts of a national climate change response".[7] This captures precisely the idea that a national climate-change response can simultaneously pursue the two objectives of mitigating climate change while avoiding harm to Māori. This would fit into conventional economic analysis of policy using cost-

[7] Wai 3325, #A84, Brief of Evidence of Mr Anthony Owen Cole me onā Tīpuna, dated 6 May 2025.

benefit techniques to include external costs and benefits in pursuit of socially optimal outcomes.

53. The supposed conflict between ambitious carbon abatement policy and Māori economic interests that Dr Murray presents is entirely constructed by him on the basis of a hypothesised policy mix that (whether deliberately or unintentionally) loads the costs of failure to abate gross emissions onto Māori while large swathes of the corporate, predominantly pakeha economy are less impacted and indeed insulated from the social costs of their emissions.

54. I therefore strongly disagree that section 3 of Dr Murray's evidence actually captures, as the heading claims, the impact of the "advocated policy shift" put forward my myself and other experts. Dr Murray has constructed a fictional, straw-man policy shift, designed to produce the negative consequences he then predicts.

55. This point extends to Dr Murray's criticisms of Dr Every-Palmer's evidence. In his paragraphs [60] and [61], Dr Murray says "The practical impact of Dr Every-Palmer's proposal to reserve forestry offsets for hard-to-abate emissions would be to lower the economic cost for the owners of hard-to-abate emissions. The cost to owners of these activities would be lower because (under Dr Every-Palmer's proposal) forestry carbon offsets would be reserved for them, rather than available to the highest bidder." He further states that the outcome would involve "a transfer of wealth and jobs away from sectors disproportionately Māori to the owners of hard-to-abate emissions". Dr Murray does not explain who he means by "the highest bidder", nor does he develop any explanation of why withholding forestry offsets from easier-to-abate emissions should necessarily (again note his use of the unequivocal "would") lower the return on forestry offsets, nor does he demonstrate any necessity for the proposed policy shift to involve a transfer of wealth and jobs from Māori to polluters.

56. As already noted, it would be perfectly feasible to ensure that forestry offsets are priced at their international value while banning their use to underwrite easier-to-abate emissions, thereby sustaining high returns to forestry sequestration while halting the use of forestry credits to offset easy-to-abate emissions. Dr Murray has simply imposed

upon Dr Every-Palmer's suggestion an artificially-constructed story of collateral harm from the proposed policy that could readily be avoided by more sensible policy design.

57. In summary, I consider that Dr Murray entirely fails to demonstrate his conclusion in paragraph [49] that "the Māori economy would bear a disproportionate share of the economic costs of the more stringent actions advocated by Dr Bertram, Dr Cole, Dr Every-Palmer, and Professor Noy". Insofar as some sacrifice of GDP in pursuit of climate goals may be required, the costs of that sacrifice ought to be borne by those best able to bear it – not loaded onto Māori. Insofar as more ambitious and sensible climate policy might actually go together with a gain in GDP, the benefits could flow to all, including Māori

Dr Murray's criticism of Dr Cole

58. I have read the evidence of Dr Anthony Cole and agree with him that GDP on its own is an inadequate measure of wellbeing, which implies that trading-off of GDP against other goals such as emissions reduction can be justifiable. I was therefore surprised that in his section 5 Dr Murray devoted so much of his evidence to an attack on the evidence of Dr Cole which he claims to be "ill-conceived economically" (Murray paragraph [93]).

59. After an extensive recitation of basic facts about GDP (paragraphs [94]-[98]) Dr Murray correctly notes that it is "a measurement construct, not a policy tool" and "not a lever government can pull to achieve its desired outcomes". From this he proceeds to claim that "Dr Cole ascribes powers to GDP that do not exist". I am unable to locate in Dr Cole's evidence any such attribution of "powers" to GDP. On the contrary, Dr Cole's critique of standard national accounting simply seems to me to make the well-established points that (i) many socially-important things are missing from this particular measurement construct, and (ii) some socially harmful things are accounted for positively rather than negatively. Dr Murray's attribution to Dr Cole of the view that GDP is "a lever that Government can pull" seems to me entirely unfounded.

60. Dr Murray then presents (paragraphs [100] –[110]) a further lengthy discourse on the partial "decoupling" of GDP from GHG emissions, which bears no obvious relevance to the issues at stake and leaves untouched Dr Cole's point that there is a positive

relationship between GDP and GHG emissions. I can find in Dr Cole's evidence no sign that he anywhere denies that the precise parameters of that positive relationship can change over time (the "loosening of the GDP-GHG emissions relationship" referred to in Dr Murray's paragraph [110]), nor does Dr Murray present any evidence that the relationship does not exist.

61. Dr Murray then turns to what he describes (paragraph [111]) as "[t]he inference by Dr Cole that government policy in relation to climate change and GHG emissions is dictated by the need to grow GDP" and against this argues (paragraphs [111]-[114]) that in fact cost-benefit analysis is a more important guide to policy. This seems to misrepresent the substance of Dr Cole's evidence, which nowhere says that policy is "dictated" by growing GDP. (Dr Cole argues only that GDP is an inadequate measure of economic success and that other measures are needed.) I note, however, that in his paragraph [126], Dr Murray states as his reading of New Zealand economic history that "economic growth (as measured by a rise in GDP) was at the forefront of government policy aims and direction", which comes close to suggesting greater emphasis on GDP than on cost-benefit analysis.

62. Dr Murray, in my view, further misrepresents Dr Cole's evidence in subsequent passages:

    a. "Dr Cole argues the market economy within which government decisions are made is fundamentally flawed" (Murray, paragraph [116], citing Cole paras [117], [128] – [136]);
    b. "Dr Cole seeks to pit the current economic system, what he calls a mixed-market economy, against a system that is focussed more on well-being" and "advocates for a shift away from the 'mixed market economy' (with a focus on GDP accounting) towards a system focussed on societal progress" (Murray paragraph [117] citing Cole paragraph [128]);
    c. Dr Cole claims "that GDP and a market economy are inextricably linked" (Murray paragraph [122], no citation to Cole);

d. With reference to the period 1984-1993 Dr Cole "infers that this so-called 'more market' approach made GDP growth a priority when it had previously not been" (Murray paragraph [123], citing Cole paragraphs [133] and [136]).

I have been unable to match these claimed statements or arguments attributed to Dr Cole to the actual content of the cited paragraphs of Dr Cole's evidence. They appear to be figments of Dr Murray's imagination.

Concluding note

63. In short, since 1990 New Zealand policymakers have turned away from the option of developing Kyoto forestry sequestration as an export industry that might supplement overseas earnings from pastoral agriculture, horticulture, education and tourism, while directly acting to bring gross greenhouse gas emissions down over time at minimal cost to GDP. They have instead seized on the chance to "cover" untouched gross emissions with accounting credits created by opportunistic exploitation of the Kyoto rules around land use, land-use change and forestry (LULUCF). Forestry has thereby been rendered captive to the NZETS, diverting its supply of internationally-valuable carbon credits to protecting the position of high-emitting rent-seeking corporate interests within the New Zealand economy, whose capture of climate policy has left the economy at large carrying the deadweight burden of their un-abated gross emissions.

64. An alternative policy strategy would assure forest owners of the full international value of their services while forcing gross emitters to bear the international cost of covering their emissions with offshore credits. Such a reversal of the current incentive structure would involve a transfer of wealth and income from emitters to foresters, which arguably would work to the benefit of Māori.

65. Dr Murray in his evidence (paragraph [48]) notes that "80 per cent of Māori land is classified as Land Use Capability 6, 7 or 8. Hence Māori farmland is mostly used for forestry and sheep and beef farming." From this he deduces that greenhouse-gas mitigation policies must necessarily reduce the economic return on that land. Entirely absent from his discussion is the fact that much of this iwi-owned land is in regions, and has topography, suited to the installation of solar arrays and windfarms, which could play a key role in achieving transition of New Zealand electricity supply to fully-

renewable while providing Māori communities with increased self-sufficiency in energy and opportunities to earn substantial sums from export of electricity to the national grid.

66. Such large-scale installation of renewable electricity generation in the hands of local businesses and communities could clearly have a central role in rapid decarbonisation of the economy of Aotearoa/New Zealand, and Māori ought to be encouraged and enabled to play a central role in that development programme. The future for the Māori economy under ambitious climate policy, in other words, can be bright if the policy is well designed as well as ambitious.