IN THE WAITANGI TRIBUNAL **WAI 2607**

IN THE MATTER OF The Treaty of Waitangi Act 1975

AND IN THE MATTER OF A claim by **Cletus Maanu Paul**, **David Potter** and **Andre Paterson** on behalf of the **Mataatua District Māori Council** that the Crown is acting in breach of Treaty of Waitangi obligations towards Maori as a result of the New Zealand Government failing to implement adequate policies to address the threats posed by global climate change.

AFFIDAVIT OF IVO GEOFFREY BERTRAM

Dated 07 NOVEMBER **2019**

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1. Introduction

1.1. My full name is Ivo Geoffrey Bertram. I am a Senior Associate at the Institute for Governance and Policy Studies at Victoria University of Wellington. I was previously (until 2009) a Senior Lecturer in the School of Economics and Finance at that university. I graduated with a BA Honours degree from Victoria University in 1966, and completed a D.Phil degree in economics at the University of Oxford in 1974.

1.2. I have conducted extensive research, modelling, and consultancy work on the economics of climate change policy. In 1989 I and two co-authors produced a report for the Ministry for the Environment on policy options that could be pursued in international negotiations[1]. A paper based on this report appeared in a peer-reviewed international journal in 1992[2].

1.3. In 1993, in collaboration with two other researchers, I carried out computable-general-equilibrium (CGE) modelling of the economic impacts of introducing a carbon tax into the New Zealand economy[3], finding that the economy-wide effect of a carbon tax could be positive provided that the revenue raised was appropriately recycled back via reductions in other taxes. These results were subsequently peer-reviewed and published, suggesting that "New Zealand could impose a unilateral carbon tax without causing any clear-cut damage to either its international competitiveness or the level of GDP, provided that the overall fiscal package is appropriately structured"[4].

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1 Geoffrey Bertram, Bob Stephens, and Cath Wallace, *The Relevance of Economic Instruments for Tackling the Greenhouse Effect*, Technical report, New Zealand Ministry for the Environment, 1989, online at http://www.geoffbertram.com/fileadmin/publications/Bertram%20Stephens%20Wallace%201989.pdf . This paper was later published as *Economic Instruments and the Greenhouse Effect*, Working Paper 3/90, Graduate School of Business and Government Management, Victoria University of Wellington, May 1990.

2 Geoffrey Bertram. Tradeable Emission Permits and the Control of Greenhouse Gases. *Journal of Development Studies*, 28(3):423-446, April 1992, online at http://www.geoffbertram.com/fileadmin/publications/Tradeable_Emission_Permits_and_the_Control_of_Greenhouse_Gases.pdf .

3 Geoff Bertram, Adolf Stroombergen and Simon Terry, *Energy and Carbon Taxes: Reform Options and Impacts*, Simon Terry Associates report to Ministry for the Environment, Wellington, October 1993.

4 Geoff Bertram, "Modelling the Effects on the New Zealand Economy of the Use of Economic Instruments to Reduce Carbon Emissions", in W.J. Bouma, C.I. Pearman, and M.R. Manning (eds), *Greenhouse: Coping with Climate Change*, pages 586-606. CSIRO, 1996, online at http://www.geoffbertram.com/fileadmin/publications/Bouma%201996.pdf .

1.4. The range of carbon taxes modelled in our 1993 work ran from $33.60 up to $100 per tonne of CO2. Translated to 2018 dollars using the consumer price index, these correspond to present-day values of $55.70 and $166 per tonne. (As an indication of the very low degree of ambition in present-day New Zealand policy, I note that the New Zealand Emissions Trading Scheme (NZETS) currently – as of October 2019 - operates below a $25 per tonne price cap.)

1.5. In 2010, following the introduction of the NZETS, I co-authored with Simon Terry a book analysing in detail the design flaws and complete lack of ambition that were inherent in the NZETS, both as originally introduced by the Labour Government in 2008, and as watered down by the subsequent National Government in 2009[5]. Key areas of weakness identified in that book, which have since 2009 rendered the NZETS almost entirely ineffective in checking emissions, were

1.5.1. the absence of any quantitative cap on total emissions (which meant that the scheme never matched the economist's textbook concept of a "cap and trade" arrangement);

1.5.2. the fact that the local market for emission-trading credits was fully exposed to the price of internationally-sourced units including Emission Reduction Units (ERUs), which meant that the implicit carbon tax represented by the price of New Zealand Units (NZUs) could be driven down to very low levels if the overseas market were to be flooded with low-quality units, as proved the case in practice;

1.5.3. the extremely generous exemptions granted to agriculture, and free issue of emission permits to the most heavily-polluting sectors of heavy industry; and

1.5.4. the lack of certainty for forestry investors arising from the lack of long-term credibility of policy commitments regarding the future value of NZU credits and the consequences of voluntary non-participation.

[5] Geoff Bertram and Simon Terry, *The Carbon Challenge: New Zealand's Emissions Trading Scheme* (Wellington: Bridget Williams Books, 2010).

1.6. In addition to the published work outlined above I have participated in, and presented papers at, numerous conferences, seminars, and round-table discussions of climate change policy, both in New Zealand and overseas, over the past three decades.

1.7. I have acted as an expert economic witness in non-climate-related cases before the Waitangi Tribunal, the Planning Tribunal, the High Court and the Commerce Commission, and in energy-related arbitration proceedings. From 1990 until 1996 I was a member of the Minister of Energy's Energy Advisory Group. Since 1992 I have been a director of the consultancy firm Simon Terry Associates, which over the years has had a wide-ranging practice in the fields of energy, regulatory economics, and environmental economics.

1.8. I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses (31 March 2005). This evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2. Scope of evidence

2.1. I have been asked by Counsel for the claimants to comment on the adequacy of the New Zealand Government's policies to address climate change. Those policies encompass two general areas of action: policies applied within the New Zealand economy to reduce this country's carbon emissions, and the positions taken by New Zealand as a participant in the ongoing international negotiations and arrangements under the UNFCC and related processes.

2.2. The focus of this affidavit is on the first of these, although some reference will be made to the second. The central contention will be that serious policies have not yet been credibly applied within the New Zealand economy to cut its carbon emissions.

2.3. The lack of credible policy action to date is especially striking given New Zealand's ranking as one of the highest per-capita carbon emitting countries in the developed world.

2.4. Relative to the amount of time and effort that has gone into policy debate, research and consultation over the past three decades, the payoff in terms of solid actual policy to cut emissions has been small. In my opinion the very slow pace of progress is evidence of a lack of strong political will, in the face of obstruction from powerful vested interests within the private sector of the economy.

3. Setting a benchmark

3.1. In evaluating the adequacy of policy, some benchmark is required. For the purposes of this affidavit I adopt the benchmark clearly stated in paragraph 15 of the Cabinet Paper POL-386-1174, entitled "International climate change negotiations: New Zealand's approach to COP24", namely that "the success of the [Paris] Agreement rests on Parties each contributing to the maximum extent they can" [emphasis added]. This criterion of contributing to the "maximum extent" is consistent with the urgency of accelerated action to achieve decarbonisation of both the New Zealand and the global economy, emphasised by the Intergovernmental Panel on Climate Change in its latest report.

3.2. Article 4.3 of the Paris Agreement[6] states that "each Party's successive national determined contribution will … reflect its highest possible ambition…" [emphasis added]. This captures the proposition that New Zealand's required degree of effort must systematically maximise the extent of action to reduce emissions, subject only to the constraint of what is "possible".

3.3. Therefore, in evaluating both past and future policies adopted by the New Zealand Government, the appropriate question to ask is not whether New Zealand has contributed (or is contributing) to an extent that is consistent with the narrowly-interpreted letter of its international obligations[7], but rather whether New Zealand's contribution represents the maximum effort of which this nation is capable – in other words, whether policy effort matches the spirit of the global accords to which the New Zealand Government has signed up.

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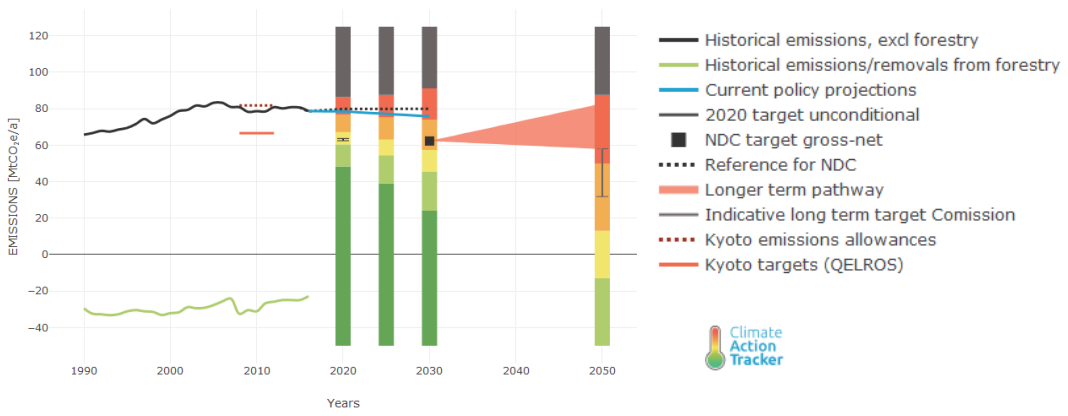
6 Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

7 In *Thomson v Minister for Climate Change*, [2017] NZHC 733, the Court made clear that New Zealand's Nationally Determined Contribution under the Paris Agreement, however inadequate it may appear, is consistent with the letter of this country's obligations.

3.4. In my opinion, the answer to this question when it is posed in relation to past policy is manifestly "no". Governments to date, of all political stripes, have opted to limit their policies to measures that do not encroach seriously on the profitability of key sectors of the economy. They have therefore avoided facing the intense lobbying and political upheaval that would have resulted from a genuine programme of measures seriously aimed at early decarbonisation.

3.5. A number of organisations undertake detailed monitoring of the performance of individual countries under the United Nations Framework Convention on Climate Change (UNFCCC). New Zealand consistently scores poorly in the international rankings produced by these organisations.

3.6. One such organisation is Climate Action Tracker (website at https://climateactiontracker.org/) which "quantifies and evaluates climate change mitigation commitments, and assesses whether countries are on track to meeting those." Its analysis covers countries with 70% of global population and 80% of global greenhouse gas emissions. The latest Climate Tracker scoring exercise for New Zealand, updated 19 September 2019, is at https://climateactiontracker.org/countries/new-zealand/ [8]. The summary chart is reproduced below:



8 Accessed 1 November 2019. I note that Climate Tracker has here taken at face value New Zealand's description of its targets as "emission reductions". As I describe in sections 5 and 7 of this affidavit, New Zealand's opportunistic use of UN accounting conventions means that the targets are specified in such a way as not to require any emission reductions so long as "offsets" are available.

3.7. The blue line showing projected emissions under current policy, as estimated by Climate Tracker, runs well above both the 2020 unconditional target and the Nationally Determined Contribution target for 2030 under the Paris Agreement. Neither of these targets represents a genuine assessment of what could be accomplished under maximum ambition; yet both lie well below the emissions track under policy to date. The chart shows also the degree to which actual emissions ran above the country's target for the Kyoto First Commitment Period (the gap being filled by externally-sourced emission allowances).

3.8. The vertical bars in the chart address the issue of whether New Zealand is meeting a "fair share" of global effort towards targets of 2 degrees and 1.5 degrees of global warming. The scoring system used to construct the chart is shown below[9]:

3.9. Comparison with the September 2019 assessment in the chart above (paragraph 3. 8) shows New Zealand tracking consistently on the boundary between "highly insufficient" and "insufficient" effort.

[9] https://climateactiontracker.org/countries/rating-system/ accessed 1 November 2019.

3.10. A second organisation ranking countries according to their performance under the UNFCCC is Germanwatch (website at https://www.germanwatch.org/en) which produces an annual "Climate Change Performance Index". In the 2019 release of this index[10] New Zealand has dropped from 33rd to 44th out of 60 countries in the overall performance ranking, with a score in the "low performance" range[11]. In the table ranking countries' climate change policies New Zealand was ranked 31st out of the 60 countries, right on the boundary between "medium" and "low", even after taking into account recent policy announcements.[12]

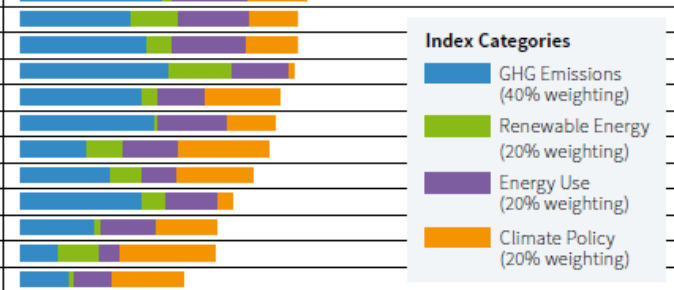
3.11. The chart below is reproduced from the *Climate Change Performance Index 2019*. It clearly shows how the positive effect on the index score of New Zealand's high renewables share (mainly in electricity generation) is offset by this country's extremely poor performance on greenhouse gas mitigation.

10 *The Climate Change Performance Index 2019* , http://www.germanwatch.org/sites/germanwatch.org/files/CCPI-2019-Results-190614-WEB%20A3.pdf accessed 1 November 2019..

11 *Climate Change Performance Index 2019* chart on p.7.

12 *Climate Change Performance Index 2019* table on p.15.

Rank		Country	Score**
1.*		–	–
2.		–	–
3.		–	–
4.	–	Sweden	76.28
5.	▲	Morocco	70.48
6.	▼	Lithuania	70.47
7.	▲	Latvia	68.31
8.	–	United Kingdom	65.92
9.	▲	Switzerland	65.42
10.	▲	Malta	65.06
11.	▲	India	62.93
12.	▼	Norway	62.80
13.	▼	Finland	62.61
14.	▼	Croatia	62.39
15.	▲	Denmark	61.96
16.	▲	European Union (28)	60.65
17.	▲	Portugal	60.54
18.	▲	Ukraine	60.09
19.	▲	Luxembourg	59.92
20.	▲	Romania	59.42
21.	▼	France	59.30
22.	▼	Brazil	59.29
23.	▼	Italy	58.69
24.	▲	Egypt	57.49
25.	▲	Mexico	56.82
26.	▼	Slovak Republic	56.61
27.	▼	Germany	55.18
28.	▲	Netherlands	54.11
29.	▼	Belarus	53.31
30.	▲	Greece	50.86
31.	▲	Belgium	50.63
32.	▲	Czech Republic	49.73
33.	▲	China	49.60
34.	▲	Argentina	49.01
35.	▲	Spain	48.97
36.	▼	Austria	48.78
37.	▼	Thailand	48.71
38.	▼	Indonesia	48.68
39.	▲	South Africa	48.25
40.	▲	Bulgaria	48.11
41.	▼	Poland	47.59
42.	▲	Hungary	46.79
43.	▼	Slovenia	44.90
44.	▼	New Zealand	44.61
45.	▼	Estonia	44.37
46.	▼	Cyprus	44.34
47.	▼	Algeria	42.10
48.	▲	Ireland	40.84
49.	▲	Japan	40.63
50.	▼	Turkey	40.22
51.	▲	Malaysia	38.08
52.	▲	Russian Federation	37.59
53.	▲	Kazakhstan	36.47
54.	▼	Canada	34.26
55.	▲	Australia	31.27
56.	▼	Chinese Taipei	28.80
57.	▲	Republic of Korea	28.53
58.	▲	Islamic Republic of Iran	23.94
59.	▼	United States	18.82
60.	–	Saudi Arabia	8.82



*None of the countries achieved positions one to three. No country is doing enough to prevent dangerous climate change. **rounded

3.12. In a report published in March 2018, the Parliamentary Commissioner for the Environment, Simon Upton, noted that "New Zealand … has not previously developed comprehensive sectorally based policies to mobilise opportunities. Indeed, a very low carbon price within an uncapped NZETS, along with reliai

on forestry sequestration and the purchase of offshore credits, has meant little sustained attention has been paid to domestic emissions reductions."[13] This is in my opinion an accurate summary of the extent of policy effort over the past three decades. It falls well short of any notion of "maximum effort", and accounts for New Zealand's very weak rating in comparison with other developed countries.

3.13. The international climate-change rating agencies in the reports cited above acknowledge that policy changes have been foreshadowed by the current Government, in the form of the Zero Carbon Bill and the appointment of an interim Climate Change Commission to produce a carbon budget and recommendations for corresponding policy measures. I comment on these recent policy changes in sections 8 and 9 of this affidavit.

4. Sectoral impact of failure to maximise policy effort

4.1. There have been major consequences of the failure to impose effective incentives and restraints on the New Zealand economy to reduce its carbon emissions. The sectors that make the largest contributions to those emissions – heavy industry, internal-combustion transport, and pastoral agriculture – have been spared the costs of adjusting to a new reality.

4.2. Other sectors, that would have benefited from a genuinely-effective emissions trading scheme or carbon tax, have missed out on the profits and investment opportunities that such a scheme would have opened up. This is true in particular of forestry – both commercial plantation forestry, and permanent carbon-sequestration forestry – which is a sector where iwi involvement and potential involvement are significant.

5. Accounting practices that disguise policy ineffectiveness

5.1. The United Nations has approved several accounting conventions for the recording of carbon emission and sequestration, and the New Zealand Government's reporting of New Zealand's emissions profile has taken full advantage of two of those conventions. The first is that when constructing each

[13] Parliamentary Commission for the Environment, *A Zero Carbon Act for New Zealand: Revisiting Stepping stones to Paris and beyond*, March 2018, https://www.pce.parliament.nz/media/196427/zero-carbon-act-for-nz-web.pdf page 11.

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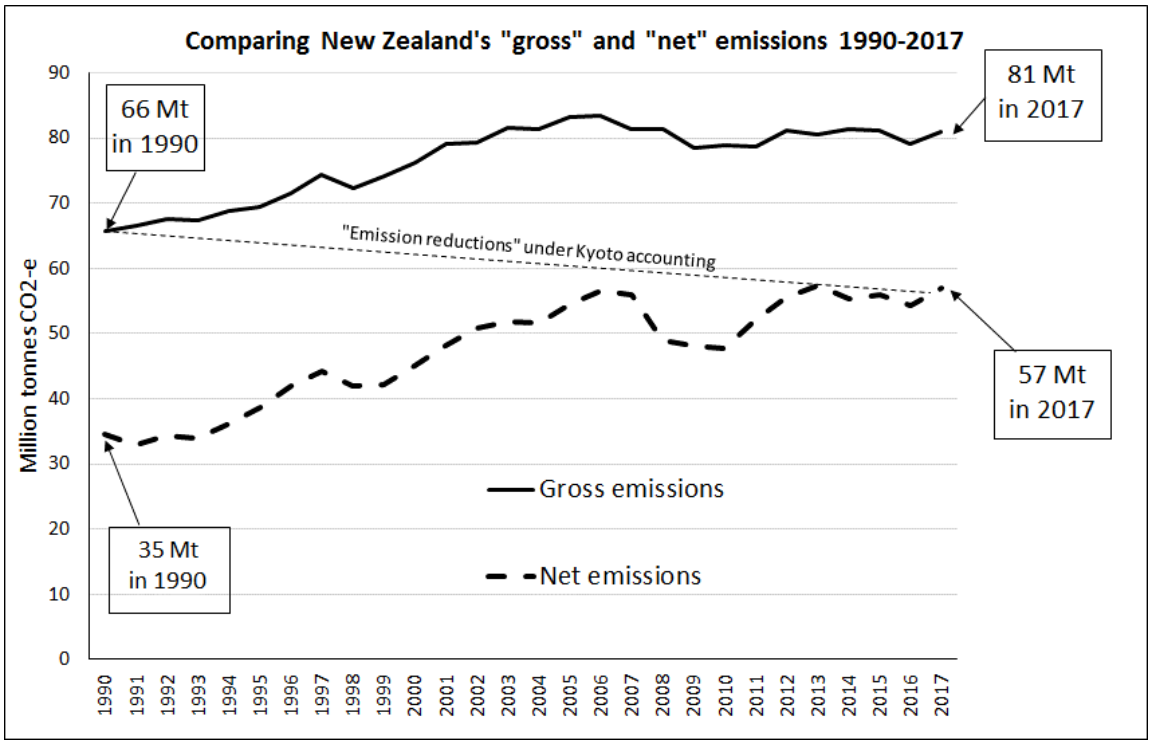
country's emissions inventory, all greenhouse gas sources and sinks are treated as interchangeable on the basis of a single metric (carbon dioxide equivalent, or CO2e). The second is that it is legitimate to apply what is known as a "gross-net" accounting framework when reporting on New Zealand's emissions trajectory over time. The effect of the Government's use of these two conventions in its emissions accounting has been to understate the severity of the problem confronting policymakers, while providing those same policymakers with the opportunity to construct formal accounts that conceal the absence of meaningful action.

5.2. The practice of treating all greenhouse gas sources and sinks as substitutable, one for another, without limit, has been central to the New Zealand Government's past approach to greenhouse gas mitigation. The lack of genuine policy action to directly reduce emissions of carbon dioxide from New Zealand's industrial, transport, commercial and household sectors has been concealed behind "offsets" secured by growing forests and by buying-in carbon credits from offshore.

5.3. Forestry must play an important transitional role in limiting New Zealand's contribution to climate change. But treating forestry sinks as a long-term offset to long-lived carbon dioxide emissions has to be qualified by recognition both that (due to the risks of fire, disease and pests) the permanence of forestry sinks is less secure than that of carbon dioxide in the atmosphere; and that land for permanent forest planting is not in unlimited supply. Ultimately, a genuine reduction of carbon dioxide emissions themselves is necessary, with forest sinks playing only a transitional role in bringing net emissions, as measured under UN accounting, down.

5.4. Gross-net accounting is the practice of comparing ongoing emissions, measured net of carbon absorbed into land-use and other sinks, to a baseline of "gross" emissions – that is, a measure that excludes those sinks. To show the implications, I have constructed the chart below using the latest available data from the website of the United Nations Framework Convention on Climate Change[14].

[14] https://di.unfccc.int/ghg_profiles/annexOne/NZL/NZL_ghg_profile.xlsx downloaded 31 October 2019



5.5. The solid black line shows the path of “gross emissions” (that is, all GHG emissions measured in the UNFCCC’s carbon-dioxide-equivalent terms, with no offset from forestry and other land-use changes). The heavy dotted line shows the path of “net emissions” (that is, all GHGs in CO2-equivalents, minus all GHGs absorbed by forestry and other land-use changes). It can be seen that both gross and net emissions rose over the 27 years from 1990 to 2017. Gross emissions rose by 15 million tonnes (a 23% increase). Net emissions rose by 22 million tonnes (a 65% increase). The New Zealand Government’s official calculation method, however, compares the 2017 net emissions of 57Mt with the 1990 gross emissions of 66 Mt and reports that emissions fell by 9Mt, or 13%.

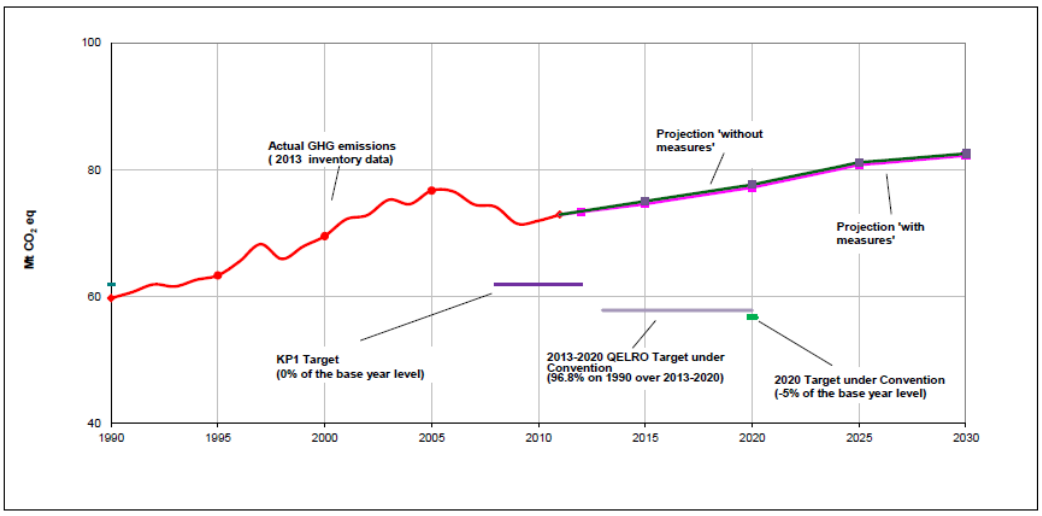
5.6. The result of this accounting procedure is to create a false impression of emission reductions when in fact there have been no such reductions, creating the equally false impression of greater progress towards emission reductions than has in fact been the case.

5.7. Under the UNFCCC the New Zealand Government submits regular “National Communications”. Among other information, these documents set out estimates and projections of gross emissions that explicitly show how much effect all the policies in place are expected to have on emissions. The

Communications are reviewed and critiqued by other parties to the UNFCC and an agreed Review is published.

5.8. In its Sixth National Communication in late 2013 as the Kyoto Protocol First Commitment Period was coming to an end, the New Zealand Government projected that all relevant policies then in place, including the NZETS, would reduce gross emissions by just 0.6% in 2020 and just 0.4% in 2030, relative to a no-policy benchmark[15]. The UNFCCC technical review plotted this information in the chart below, showing that the projected impact of policy measures on the path of gross emissions was negligible[16].

Greenhouse gas emission projections



5.9. New Zealand's most recent Communication (the seventh, in December 2017)[17] projected the effect of all policy measures then in place (with the NZETS only one among fourteen separate policies including vehicle labelling, freshwater management, and afforestation grants[18]) to be a 2.1% reduction in gross

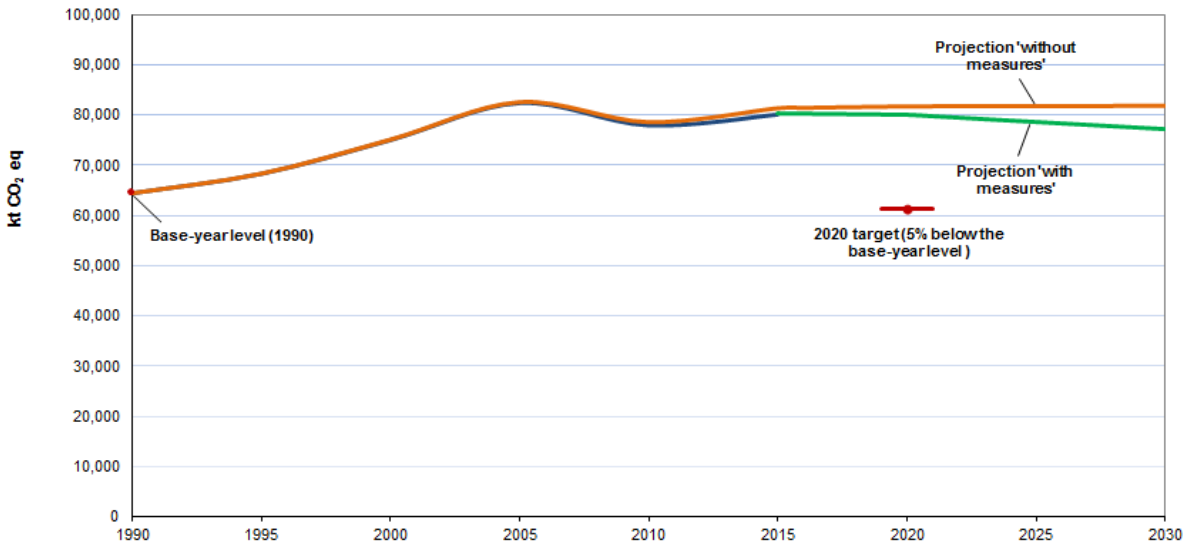
15 *New Zealand's Sixth National Communication under the United Nations Framework Convention on Climate Change*, December 2013, https://unfccc.int/documents/198407, accessed 6 November 2019, Tables 5.15 and 5.16, pages 125 and 126.

16 *Report of the technical review of the sixth national communication of New Zealand*, UN document FCCC/IDR.6/NZL, https://unfccc.int/sites/default/files/resource/docs/2014/idr/nzl06.pdf , accessed 6 November 2019, p.26.

17 *New Zealand's Seventh National Communication under the United Nations Framework Convention on Climate Change*, December 2017, https://unfccc.int/documents/198280 , accessed 6 November 2019.

18 *Seventh National Communication* p.138 Table 5.13.

emissions by 2020, and a 5.6% reduction by 2030[19]. The UNFCCC chart again showed the very small projected policy impact[20]:



6. Reliance on imported "credits"

6.1. The purchase from offshore sources of "carbon credits" created as a result of emission reduction activities in other countries is defensible in theory but runs into very severe problems around quality assurance. New Zealand has been one of very few countries relying extensively on these purchases as a way of offsetting ongoing gross emissions. The record to date has been dogged by scandal, and the outlook is for continual problems with the availability and quality of these offshore credits.

6.2. A major 2016 report from the Morgan Foundation[21] analysed the use of imported carbon credits by the New Zealand Government to meet the letter of

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19 *Seventh National Communication* p.138 and Table 5.14 p.139. The 2020 projection was for 81,682 ktCO2-e without measures, and 79,958 ktCO2-e with measures. The corresponding figures for 2030 were 81,792 and 77,238. On page 138 the projected policy-induced changes were inflated to 2.2% and 5.9% by measuring them as increases from the with-measures level, rather than reductions from the without-measures level. In the text above I have shown the projected percentage reductions for consistency with the Sixth Communication.

20 *Report of the technical review of the seventh national communication of New Zealand* UN document FCCC/IDR.7/NZL, https://unfccc.int/documents/196159 , accessed 6 November 2019, p.23.

21 Geoff Simmons and Paul Young, *Climate Cheats: how New Zealand is cheating on our climate change commitments, and what we can do to set it right*, Morgan Foundation, April 2016, online at http://morganfoundation.org.nz/wp-content/uploads/2016/04/ClimateCheat_Report8.pdf (accessed 27 March 2019).

its obligations under the First Commitment Period of the Kyoto Protocol, while directly subverting the spirit of those obligations.

6.3. The foreward by Dr Gareth Morgan summarised the findings thus: "our Government has stealthily but steadfastly circumvented the intent of the agreements it has entered, not just by diluting the mechanisms for adjustment (like our Emissions Trading Scheme), but by trading in the products of organised crime in Ukraine and Russia."[22] I agree with this characterisation.

6.4. Under the Kyoto Protocol, participating developed nations committed to reduce their emissions of greenhouse gases below some specified baseline. In New Zealand's case, average annual net emissions 2008-2012 were to be held below 1990 gross emissions, with the proviso that this could be achieved in part by purchasing emission reductions in other countries, as represented by UN-approved Kyoto credits such as Emission Reduction Units (ERUs).

6.5. It quickly became apparent that Russia and Ukraine had large excess holdings of Assigned Amount Units (AAUs), as a result of the collapse of their industrial sectors, which had brought their gross emissions down dramatically relative to the 1990 baseline. Known as "hot air", these AAUs were excluded from international trading in an attempt to maintain the integrity of the basic Kyoto trading architecture. Converted to ERUs by often-fraudulent means, these excess units were unloaded into the market, but rejected by most of the Kyoto partners. Until mid-2015, however, New Zealand allowed unlimited importing by local emitters, who could then meet their obligations under the NZETS by surrendering these units that lacked environmental integrity. The price of New Zealand Units issued under the NZETS was thus driven down to minimal levels, disadvantaging those New Zealand firms (including forest owners) who had acted in good faith, while enriching those that took opportunistic advantage of the windfall of cheap units.

6.6. Looking forward to 2050, the stated intention of the New Zealand Government is to remain open to the use of imported units to meet its non-binding commitments under the Paris Agreement. Consistent with this intention, New

[22] Ibid., p.iii.

Zealand has taken a leading role in international meetings pushing for the establishment and expansion of international carbon-credit trading.

7. Gross-net accounting and emission reduction targets

7.1. The following passage comes from New Zealand's most recent official report under the UNFCCC[23]:

> Since the *Sixth National Communication* New Zealand has announced its Nationally Determined Contribution to reduce emissions to 30 per cent below 2005 levels by 2030 as part of the Paris Agreement, which New Zealand ratified in October 2016. This Agreement entered into force on 4 November 2016. This is the fourth national target the Government has set for reducing New Zealand's greenhouse gas emissions. The four targets are:
>
> - a target under the Kyoto Protocol's first commitment period of reducing greenhouse gas emissions to 1990 levels between 2008 and 2012. New Zealand met this target in 2016 when its 'True-up Report' was reviewed by the United Nations Framework Convention on Climate Change (UNFCCC)[1]
> - an unconditional target under the UNFCCC of reaching 5 per cent below our 1990 greenhouse gas emissions levels by 2020. Domestically New Zealand reports progress towards this target in the Net Position report.[2] New Zealand is on track to meet this target
> - a Nationally Determined Contribution under the Paris Agreement of reaching 30 per cent below our 2005 greenhouse gas emissions levels by 2030 (this target is equivalent to 11 per cent below 1990 levels by 2030)
> - a gazetted long-term target of 50 per cent below our 1990 greenhouse gas emissions levels by 2050.

7.2. Until the Climate Change Response (Zero Carbon) Amendment Bill comes into force, the last three of these remain the official targets of the New Zealand Government[24]. All were specified, and their achievement measured, in terms of the gross-net accounting procedure described in paragraphs 5.7-5.9 above. Official documents almost invariably present them without qualification as

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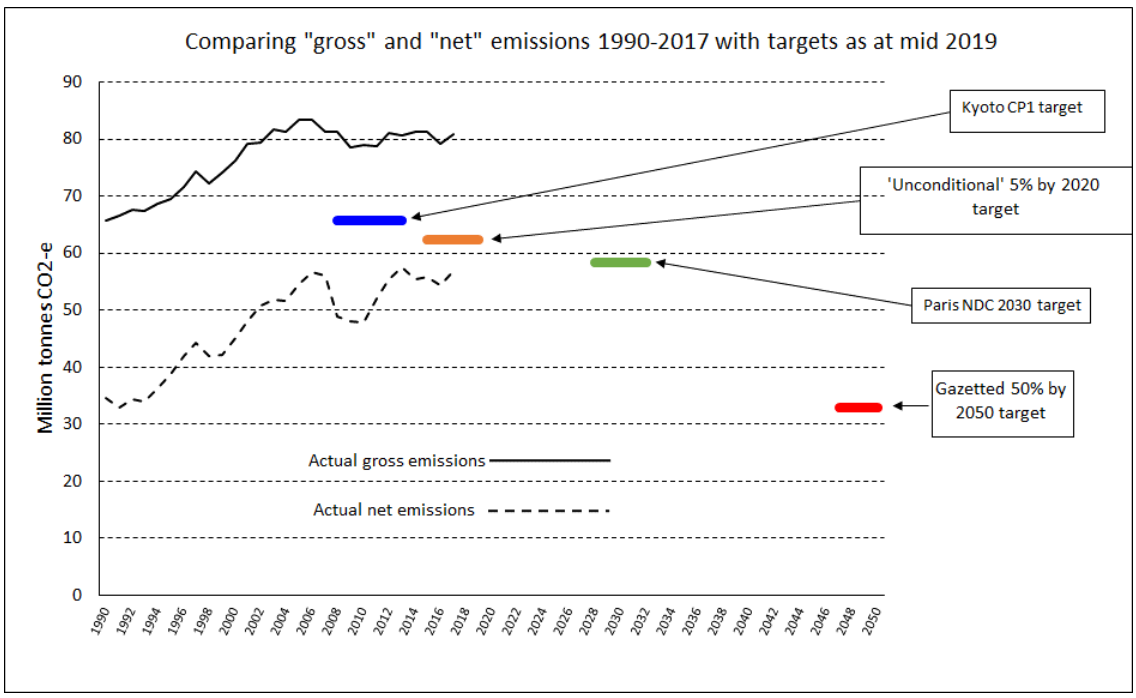
23 Ministry for the Environment, *New Zealand's Seventh National Communication Fulfilling Reporting Requirements under the United Nations Framework Convention on Climate Change and the Kyoto Protocol* December 2017, https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/21-12-17%20Web%20FINAL%20-%20Seventh%20National%20Communication%202017.pdf last accessed 31 October 2019, p.20.

24 For descriptions of their origins see *New Zealand's Third Biennial Report Under the United Nations Framework Convention on Climate Change*, December 2017, pp.17-20.https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Final%20-Third%20Biennial%20Report.pdf accessed 1 November 2019. Also Ministry for the Environment, *About New Zealand's Emission Reduction Targets*, http://www.mfe.govt.nz/climate-change/climate-change-and-government/emissions-reduction-targets/about-our-emissions , last accessed 1 November 2019.

"emissions reductions", with no mention of the vital gross-net calculation on which they rest[25].

7.3. This is especially discreditable in the case of the Nationally Determined Contribution (NDC) target which should have been clearly specified as "net emissions in 2030 to be 30% below gross emissions in 2005". Reference to the chart in paragraph 7.4 below shows that the chosen base year of 2005 was the peak year for gross emissions, a choice that cynically maximised the apparent ambition of the target.

7.4. Again using the latest available data from the website of the United Nations Framework Convention on Climate Change[26], the chart below shows the four listed targets compared with officially-reported actual gross and net emissions up to 2017:



7.5. Taking first the First Commitment Period of the Kyoto Protocol, it is clear that even without the massive impact on emissions of the Global Financial Crisis of 2008-2010, New Zealand could have easily met that target without any change

[25] The Cabinet Paper on the Nationally Determined Contribution at https://www.mfe.govt.nz/more/cabinet-papers-and-related-material-search/cabinet-papers/new-zealands-intended-contribution (accessed 1 November 2019) similarly provided Cabinet ministers with no mention of the gross-net distinction, using simply the unqualified expression "emission reductions".

[26] https://di.unfccc.int/ghg_profiles/annexOne/NZL/NZL_ghg_profile.xlsx downloaded 31 October 2019.

to its pre-existing emissions growth trajectory. Under the gross-net accounting procedure, New Zealand was credited with 123.7 million "surplus units" which it is currently claiming as credit to cover its ongoing emissions growth over the period 2013-2020[27].

7.6. Turning next to the "unconditional" 2020 target of net emissions 5% below 1990 gross emissions, this target never represented any sort of serious constraint on business-as-usual emissions growth.

7.7. Similarly, the NDC target for 2030 leaves room for net emissions to increase, albeit at a reduced rate. The very low level of ambition in this target is concealed by the gross-net accounting procedure.

7.8. In addition it must be noted that the 2030 target is not necessarily to be met by actually changing projected emission levels at all, relative to "business as usual". According to the Ministry for the Environment, "New Zealand will meet its emissions budget for the period 2021–2030 through a combination of:

- domestic emission reductions
- removal of carbon dioxide by forests
- participation in international carbon markets."[28]

7.9. The use of a gross 1990 baseline for the 2030 target is not, it should be noted, explicitly acknowledged in the *Third Biennial Report*. It is necessary to turn to the UNFCCC website to secure an explicit statement: "New Zealand's existing activity start year of 1990 will continue to apply, ensuring continuity of action with previous commitments".[29] To the casual reader this obscure wording could easily be mistakenly mis-read as implying a net-net commitment, and the public-relations work of the Government in presenting this Commitment to the wider public has done nothing to dispel such an impression.

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27 See "Latest update on New Zealand's 2020 net position" at https://www.mfe.govt.nz/climate-change/climate-change-and-government/emissions-reduction-targets/reporting-our-targets-0 accessed 1 November 2019.

28 *Third Biennial Report* p.20.

29 *New Zealand Submission under the Paris Agreement: New Zealand's Nationally Determined Contribution* , at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/New%20Zealand%20First/New%20Zealand%20first%20NDC.pdf , p.2 under "Methodologies".

7.10. That leaves the 2050 target, which lies so far into the future - relative to the New Zealand electoral cycle and policy process - that its value is no more than symbolic, as a burden kicked down the road for future governments to bear. Announced in the *NZ Gazette* in March 2011, this target was again set in gross-net terms: "The 1990 level is based on New Zealand's gross greenhouse gas emissions as per the agreed accounting rules of the Kyoto Protocol under the UNFCCC. The 2050 target is based on New Zealand's net greenhouse gas emissions and will take into account any removals or emissions arising from afforestation or deforestation since 1990 consistent with the Kyoto Protocol under the United Nations Convention Framework on Climate Change."[30]

7.11. The emissions targets set prior to 2019 by the New Zealand Government have thus been so weak as to be meaningless, in addition to which they are non-binding under the Paris Agreement. New Zealand's withdrawal from Commitment Period Two of the Kyoto Protocol signalled to the rest of the world New Zealand's lack of serious commitment to joint action, while releasing New Zealand from the prospect of being subject to legally binding obligations under the Protocol.

8. The Zero Carbon Bill

8.1. On 8 May 2019 the Climate Change Response (Zero Carbon) Amendment Bill was introduced to Parliament.

8.2. The Bill contains a number of symbolically-important steps:

- It adopts a two-basket approach to greenhouse gases, separating biogenic methane from the other gases, and setting separate targets: net emissions of GHGs other than methane to be zero by 2050, and gross emissions of methane to be reduced 10% by 2030 and 24-47% by 2050.
- It requires the Minister to set emissions budgets for three periods into the future, and makes him or her politically accountable for achieving them.

[30] "Climate Change Response (2050 emissions target) Notice 2011", *New Zealand Gazette* 31 March 2011, p.987, online at https://www.dia.govt.nz//Pubforms.nsf/NZGZT/NZGazette41Mar11.pdf/$file/NZGazette41Mar11.pdf#page=28 (accessed 27 March 2019).

- It establishes a Climate Change Commission to conduct research, review and monitor the emissions budgets, advise the Minister, and recommend required changes.
- It requires the Government to prepare risk assessments and a national adaptation plan.

8.3. Substantively, however, the Bill does no more than set up a general framework for the next round of policy formation, without resolving any of the critical issues. It has several provisions that leave the future radically uncertain:

- Neither the long term targets nor the emissions budgets are legally binding - "no remedy or relief is available for failure" (5ZJ(i))

- Banking provisions allow unused credits to be carried forwards without restriction (5ZC) which means that lower emissions in one period translate to less binding budgets in later periods.

- Offshore emissions may be used to meet emission budgets to an extent that is to be at the discretion of future Ministers (5W and 5X), which places radical uncertainty over the future value of emission permits.

- The Commission must have particular regard to "economic circumstances and the likely impact … on taxation, public spending, and public borrowing" (5Z(ix)), a provision which makes climate policy hostage to the economy rather than the other way round.

8.4. The effect of these provisions is to make the targeting and budgeting exercise a matter of political discretion rather than binding rules. There is a conspicuous contrast between the limited role and powers of the Commission (advisory only and with no enforcement powers) and, for example, the Reserve Bank of New Zealand (RBNZ) which exercises genuine authority over the setting of monetary policy.

8.5. The resulting uncertainty over how future policy will work out removes much of the incentive on business and households to act quickly to reduce emissions. The common economic response to uncertainty is to delay decisions on matters such as investment and R&D while individual economic actors wait to see how the Government exercises its discretion in setting budgets and designing actual policies to achieve them.

8.6. The Bill's failure to strong provisions to ensure its targets are met reflects the extreme difficulty of moving serious climate policy forward in a democratic system subject to vigorous vested-interest lobbying and political obstruction.

8.7. This implies that when it promised under the Paris Accord to contribute "to the maximum extent" and with "the highest ambition", the New Zealand Government was offering only what it perceived to be politically achievable within those constraints, as distinct from the maximum effort of which the New Zealand economy could be capable.. Rather than exercising its authority to push policy forward, the Government is settling for mere "nudges" to move the national community ahead. That process is inevitably a slow one, while the required response to the pending climate change emergency now needs to be rapid.

9. Climate Change Response (Emissions Trading Reform) Amendment Bill

9.1. Introduced on 24 October 2019, this Bill makes some changes to the NZETS but does not fully address the fundamental flaws noted in paragraph 1.5 above, and leaves in place the consequences of the scheme's past lack of integrity.

9.2. Certain privileged large corporate interests now treat as an established property right their access to continued free issues of NZUs, and their freedom to use banked units issued in past years which were retained by surrendering the cheap imported hot-air credits described in section 6 of this affidavit.

9.3. Agricultural interests, having repeatedly succeeded via intensive lobbying in holding at bay both carbon taxes and ETS discipline, have yet again secured exemption for agricultural greenhouse gases from the scheme for another five years with no credible sanctions for failing to reduce emissions.

9.4. The differential treatment of large industry versus small and medium enterprises in the issuing of free units remains intact, constituting a blatantly distortionary subsidy arrangement that will hinder any future attempt to bring New Zealand into trade agreements built around the carbon content of traded goods.

9.5. The price cap of $25 per tonne is to be replaced by a "cost containment reserve" which leaves the NZETS far removed from the economic concept of cap-and-trade, and renders it even more clearly a de-facto carbon tax imposed via obscure and complex procedures subject to undue influence from powerful vested interests.

10. Economics of maximum effort

10.1. At the time in the early 1990s when I and others advocated adoption of a carbon tax by New Zealand, it was reasonable to think that a tax of relatively modest proportions, rising gradually over time, could "nudge" the economy away from reliance on fossil fuels and towards a low- or zero-carbon production system. In my opinion that time has now passed. If climate change is to be halted, the coming decade will have to bring dramatic policy interventions that go well beyond the gentle introduction of easily-responded-to price signals. The outlook now is for both a dramatically increased price on carbon, and a range of non-price measures to force the pace of progress towards net-zero carbon. (The possibility of a ban on new-vehicle internal combustion engines in the transport sector, for example, is already entering into policy debates overseas.)

10.2. In 2018 the IPCC reviewed the economic literature on the level of a global carbon price that would be required to achieve the targets of holding temperature increase below 2 degrees or 1.5 degrees. The range of carbon prices estimated by various models was very wide, but lay well above the figures often mentioned in New Zealand policy debate. For example, estimates of the carbon price required by 2030 to put the world economy on track for 1.5 degrees ranged from a minimum of US$135 per tonne to a maximum of $5,500 per tonne[31]. The minimum figure converts to 200 New Zealand dollars per tonne. The price of units in the ETS remained capped at $25 until replaced, under the new legislation, by a less transparent price cap embodied in a "cost containment reserve", the details of which remain to be settled.

[31] IPCC SR1.5, "Mitigation pathways consistent with 1.5°C in the context of sustainable development", http://report.ipcc.ch/sr15/pdf/sr15_chapter2.pdf , page 2-78 and Figure 2.26 top panel, on page 2-80.

10.3. New Zealand Governments have moved reluctantly, late, and to only a minimal extent towards pricing carbon. The absence of any effective emissions-reducing policy measures, whether by pricing or by direct regulatory intervention, has been the hallmark of policy to date.

10.4. In a report prepared in 2018 for the New Zealand Productivity Commission, Vivid Economics[32] outlined three scenarios of ways to reach net-zero emissions by 2050. All of these relied heavily on a switch to electric vehicles and expansion of forestry, with gross emissions falling by 28-43% over the three decades[33]. A notable feature of the Vivid Economics report is its relatively low estimate of the carbon price required to move the economy along these scenario paths: "The initial findings suggest that New Zealand is likely to be able to decarbonise its economy at a cost comparable to that expected in the rest of the developed world. Under a 25 MtCO2e target, the domestic emissions prices required to put New Zealand on track to a net zero emissions economy are below Paris consistent global emissions prices until well after 2035, and below or towards the lower bounds of anticipated Paris Agreement consistent emissions prices in 2050"[34]. These results suggest that New Zealand is not less able than other developed economies to play a full role in the global effort outlined in the Paris Agreement

10.5. A subsequent study conducted by NZIER for the Ministry for the Environment reached more pessimistic conclusions regarding the carbon price, but estimated that zero carbon by 2050 could still be achieved alongside ongoing growth of GDP, albeit at a somewhat lower rate than could be sustained if the target were to be abandoned[35]. As the authors note, "under all core scenarios and targets, the economy continues to expand"[36].

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32 Vivid Economics, *Modelling the transition to a lower net emissions New Zealand: Interim Results*, April 2018, https://www.productivity.govt.nz/sites/default/files/Modelling%20the%20transition%20to%20a%20lower%20net%20emissions%20New%20Zealand_Interim%20Results_Concept%2C%20Motu%2C%20Vivid.pdf .

33 Vivid Economics 2018 p.42.

34 Vivid Economics 2018 p.39.

35 NZIER, *Economic Impact Analysis of 2050 Emissions Targets*, June 2018, https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/NZIER%20report%20-%20Economic%20impact%20analysis%20of%202050%20emissions%20targets%20-%20FINAL.pdf , p.xi Figure 5 shows the carbon price paths and p.18 Figure 13 shows GDP growth rates.

36 *Economic Impact Analysis of 2050 Emissions Targets* p.17.

10.6. To achieve the goal of zero carbon by 2050 may require the New Zealand economy to forego some GDP growth, but neither study finds an unsustainable burden of cost. Both, however, point to the need for early action that would have the effect of raising the carbon price quite sharply above its current level. "Maximum effort" will require policy settings under the new legislation to incorporate a far higher level of ambition than New Zealand Governments have exhibited to date.

11. Non-applicability of the Resource Management Act

11.1. The Resource Management Act 1991 (RMA) devolved to local authorities the task of issuing consents for new activities, with provision made for central Government to provide guidance on matters of national, as distinct from local, importance, by the issuing of National Policy Statements, as provided for in sections 45 and 45A of the Act. Those statements were conceived of as being critical components for the delivery of a sound resource management regime. In 1996, the OECD review of New Zealand's environmental performance stated plainly that local government implementation of the RMA was lagging in part due to "the absence of more detailed policy guidance from the central Government" and strongly recommended greater central government support.[37]

11.2. One other process for enabling national concerns to be brought to bear on planning decisions was provided for in the RMA. The Minister for the Environment was given a reserve power to "call-in" projects which raised national issues, and this power was exercised in 1994 when the Electricity Corporation of New Zealand (ECNZ) applied for consent to build the Taranaki Combined Cycle (TCC) plant at Stratford[38]. Following an inquiry, the Minister granted consent on condition that the plant's 1.5 million tonnes of CO2 emissions be mitigated by tree planting or other means. Far from setting a precedent for implementation of the Government's international obligations

[37] OECD (1996) *OECD Environmental Performance Reviews: New Zealand.*

[38] *Annual Report of the Ministry for the Environment for the Year Ended 30 June 1994* p.5, and *Annual Report of the Ministry for the Environment for the Year Ended 30 June 1995* p.5.

under the FCCC, however, this has been the only greenhouse-gas-related call-in to date.

11.3. In 2004 the RMA was amended to explicitly prevent local authorities from having regard to climate-change-related issues, which were to be dealt with under separate legislation. The new section 104E reads: "When considering an application for a discharge permit or coastal permit to do something that would otherwise contravene section 15 or section 15B relating to the discharge into air of greenhouse gases, a consent authority must not have regard to the effects of such a discharge on climate change, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of greenhouse gases, either (a) in absolute terms; or (b) relative to the use and development of non-renewable energy.

11.4. A series of court challenges tested whether this left space for an electricity generating plant or a coal mine to be refused consent on the grounds that the activity involved the discharge into the atmosphere of greenhouse gases. In *Greenpeace New Zealand Ltd v Genesis Power Ltd* [2008] NZSC112, and in *West Coast ENT Inc v Buller Coal* [2013] NZSC87 the Supreme Court affirmed that the RMA rules out consideration of end-use emissions as part of the planning consent process. Consents have therefore been granted for projects with high potential to increase New Zealand's aggregate carbon emissions because local authorities have had no grounds to withhold consent on this basis.

12. Affidavits of Joanne Deirdre Tyndall and Roger Scott Lincoln

12.1. Ms Tyndall's affidavit accurately summarises the factual content of international negotiations over the past decade, without offering any judgment as to the adequacy or effectiveness of New Zealand's response. She notes at paragraph 8 the non-binding character of UNFCCC commitments, describes in paragraph 9 the legally binding commitments imposed by the Kyoto Protocol, and notes in paragraph 11 the global decision to shift the focus of negotiations from Kyoto obligations to voluntary Intended Nationally Determined Contributions.

12.2. Conspicuously absent from her account of events is New Zealand's withdrawal from the Second Commitment Period of the Kyoto Protocol, which would have involved legally binding commitments. Participation in Kyoto II would not have been in conflict with adherence to the Paris Agreement. New Zealand's refusal to accept a second set of legally binding commitments provided, in my opinion, a clear signal to our negotiating partners of this country's unwillingness to take any leadership role in tackling carbon emissions. It would have been helpful for Ms Tyndall to lay out for the Tribunal the reasons for New Zealand's defection from the Kyoto Second Commitment Period.

12.3. As Ms Tyndall notes in her paragraph 13, under the Paris Agreement, "countries' INDCs reflected their ambition for reducing emissions consistent with their national circumstances." The absence of serious ambition in New Zealand's INDC serves simply to reinforce the message conveyed by withdrawal from Kyoto Protocol obligations – that this country is not yet prepared to take any major initiatives, or incur any serious sacrifices, in pursuit of decarbonisation.

12.4. In her paragraph 18 Ms Tyndall emphasises that "there is no expectation or requirement that Parties adopt a target that, if adopted by all Parties, would achieve [the 2^{o}C] goal". Simple logic dictates that if no Party adopts such a target, the goal will not be achievable. A heavy burden therefore falls on the hope for "continuous improvement" and increasing ambition over time under the Paris Agreement, as outlined by Ms Tyndall in paragraphs 19-20.

12.5. In paragraph 40 Ms Tyndall advances the proposition that "the Fifth [IPCC] Assessment Report provided the scientific basis for the development of New Zealand's current NDC". I am not aware of any clear evidence that this was the case. The weakness and lack of ambition in New Zealand's NDC, and the admitted fact that it does not amount to "a target that, if adopted by all Parties, would achieve [the 2^{o}C] goal", suggests to me that the current NDC is in fact not consistent with the science set out in the Fifth Assessment Report, and would have to be massively strengthened to be so consistent.

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12.6. The affidavit of Roger Scott Lincoln is largely a recital of policy developments over the past decade and the extent of consultation with Maori, an issue which lies outside my expertise.

12.7. In paragraph 36 Mr Lincoln estimates that by 2019 New Zealand will have spent $100 million on research into emission-mitigating technologies for agriculture. At first sight this may seem a large number, but in the wider context of the New Zealand economy it is an indication rather of the lack of ambition encountered across the entire range of climate-change policy to date. A commitment equal to less than 0.05% of annual Gross Domestic Product, spread over a decade (hence significantly less on average than 0.01% of annual GDP) does not amount to any sort of major national effort comparable with the resources committed in, for example, wartime.

13. Final comments

13.1. New Zealand's diplomatic position in climate negotiations internationally has been focused almost exclusively on protecting what successive Governments have perceived to be New Zealand's own vital interest in minimising, rather than maximising, this country's commitments to the international community.

13.2. One area in which this has been apparent is the role of forestry planting in New Zealand's commitments. In the early days of the Kyoto Protocol negotiations New Zealand gave undertakings that it would not rely solely on forestry sequestration as a means of avoiding direct action to reduce gross carbon emissions. That undertaking quickly became a dead letter.

13.3. The other notable area in which New Zealand has failed to do its utmost on the international front is the provision of active and effective support for the voices of indigenous communities of the Pacific Islands, as expressed most importantly through the Alliance of Small Island States (AOSIS).

13.4. From the outset the NZETS has been ineffective as a means of driving decarbonisation. The central reason has been that the scheme was and is designed to fail in this task. The crucial design flaws have been evident throughout, and in my opinion have been deliberately included and retained

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through successive iterations because they cater to the interests and demands of powerful vested interests that believe they stand to lose from effective use of the market mechanism to drive decarbonisation.

13.5. Two speeches by Maori Party MPs in the debates on the original NZETS legislation accurately captured, in my opinion, the essential weakness of the scheme. Tariana Turia said[39]:

> Fundamentally, the emissions trading scheme is limited by being nothing more than an emissions trading scheme, when what we really require is an emissions reduction programme. ... Reducing our emissions is about honouring our commitment to those who have passed on that we will leave this planet in a better state than it is now for those who come after us. The Government acknowledges that this scheme will make almost no difference. ... To make the world a better place we need to live differently, and we all need to live differently….
>
> One of the fundamental issues that has troubled us in the passage of this bill has been the issue of inequity. The inequity exists at several levels. We suggest that the emissions trading scheme is politically sustainable only if it seen to share the Kyoto burden fairly across all sectors at each stage, and all starting at the same time…
>
> The Māori Party does not support the bill. We are of the view that what is needed is a radical rethink of the whole approach. We are opposed to the concept of paying the polluters, of rewarding the corporate lobbyists with huge exemptions, and of the very nature of trading, rather than reducing, emissions.

13.6. Te Ururoa Flavell said[40]:

> We accept that any emissions reduction programme will result in changes to land values and will enable the Government, business, and the public to account for environmental costs on business, including forestry. So that is not the reason why we oppose the bill. The primary reasons are that it is not effective in reducing emissions, it is not transparent, and the polluters do not pay—they receive massive subsidies in the form of corporate welfare. The whole point of economic incentives to cut emissions is defeated.

13.7. There is a longstanding distinction in the economics literature between "rules" versus "discretion" in policy. Rules mean that non-negotiable decisions are taken, to which all players in the economy simply have to adjust; an example is the Official Cash Rate (OCR) set by the RBNZ. Discretion means that policy detail is negotiable and subject to political decisions reflecting the pressures of the moment. Rules provide certainty whereas discretion potentially opens the way to opportunism and rent-seeking, and so tends to foster uncertainty. Both

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39 *Hansard* 28 August 2008, Vol.648 pp.18087-18089.

40 *Hansard* 2 September 2008, Vol 649 p.18136.

policy approaches nevertheless have advantages and disadvantages. In the right hands and the right circumstances, discretionary policy is fully defensible. But in the case of emission reduction there is an especially strong argument for maximising certainty and minimising uncertainty. The NZETS, and the accompanying policy stance of the New Zealand Government, seem set to maximise uncertainty, and hence to withhold, rather than impose, effective incentives for New Zealand businesses and households rapidly to abate their emissions.

SWORN at Wellington this 7th day of November 2019 before me:

Ivo Geoffrey Bertram

HELEN COPSEY.

~~A solicitor of the High Court of New Zealand~~

Deputy Registrar
of the High Court
of New Zealand