Submission to the Environment Committee on the Climate Change Response (Emissions Trading Reform) Amendment Bill

1. Introduction

1.1 My full name is Ivo Geoffrey Bertram. I hold a doctorate in Economics from the University of Oxford. I taught economics courses in the School of Economics and Finance at Victoria University for more than three decades before retiring in 2009. I am currently a Senior Associate at the university's Institute for Governance and Policy Studies.

1.2 Since the late 1980s I have conducted and published research on policies to combat climate change. A widely-cited 1992 paper of mine in an international journal remains one of the earliest detailed economic analyses of how a global tradable permits regime might operate[1].

1.3 In 2010, following the introduction of the New Zealand Emissions Trading Scheme (NZETS), Simon Terry and I published a book[2] which laid out detailed criticisms of the scheme's inadequacies and argued the case for more coherent, less corruptible, policy options. In the conclusion of that book we made the following comments that continue to apply ten years later:

> Fairness, and the quest for least-cost options to reduce emissions, are key benchmarks against which we have evaluated the ETS. In its present form, the scheme fails entirely on both those counts. It relies overwhelmingly on imposing emission charges on sectors with relatively high abatement costs, and as a result can be expected to result in minimal abatement. It imposes a regressive quasi-tax burden on households and firms that are not major emitters, while largely exempting high-emitting vested interests with political strength. The promised application 'to all sectors of the economy' lies in the distant and uncertain political future … While making no serious inroads into gross emissions, the ETS potentially undermines public willingness to support emissions pricing in future by imposing burdens and distributing benefits in a way that will seem, to many, unfair. The complexity of the scheme also makes it opaque where it should be transparent, and means that it will require continual regulatory fine-tuning. (p.176).
>
> If subsidies or adjustment assistance are warranted for certain emitters or groups of emitters, the appropriate way to deliver these is in the clear light of day. The Public

---

1 'Tradeable Emission Permits and the Control of Greenhouse Gases', *Journal of Development Studies*, 28, 3 (April 1992) pp.423-446. This paper was later reprinted in Tietenberg, T. (ed.) *The Economics of Global Warming* (Cheltenham, UK: Edward Elgar, 1997). Google Scholar records 146 citations in the subsequent academic literature.

2 *The Carbon Challenge: New Zealand's Emission Trading Scheme*, Wellington: Bridget Williams Books, 2010.

> Finance Act contains provisions for government spending on industry assistance to be clearly laid out before Parliament, and for its consequences to be recorded in the Government Financial Statements. The principles of fiscal responsibility apply to climate change subsidies as to all other industry support. Corporate welfare is not entitled to greater freedom from parliamentary scrutiny than social welfare. (p.177)
>
> The New Zealand ETS has now become so degraded relative to the simple originating theory of cap-and-trade that it is probably beyond rescue as a sustainable framework for this country's climate change policy… At the point that policymakers are compelled to revisit the decisions that led to the ETS and explore other mechanisms, there are a series of good ideas that could act as the foundation for better policy. We have already noted as [a] possible [option] a standard carbon tax, with revenue recycled in such a way as to recruit public support and entrepreneurial effort behind a drive towards a more sustainable economy. (pp.186-187)
>
> A fundamental requirement for any new policy direction to be sustainable in a democracy is that it must enjoy legitimacy with the electorate and be able to enlist the willing participation of a majority of stakeholders in the economy – including ordinary households and small businesses. In short, it requires the wide support that only a fair allocation of responsibility for emissions can deliver. (p.187).

1.4 The Climate Change Response (Emissions Trading Reform) Amendment Bill now before the House adds complexity to the NZETS while (i) perpetuating an unfair and distortionary allocation of adjustment burdens, (ii) leaving untouched the perversely anti-decarbonisation effect of interaction between the NZETS and the wholesale electricity market, and (iii) failing to remove private-sector uncertainty over the future quantity and price of allowable emissions. The extensive new requirements placed on the Minister to "consult", combined with the very limited advisory-only powers that Parliament has conferred on the new Climate Change Commission, open the door yet more rent-seeking and capture by the large corporate vested interests that have to date been the main beneficiaries of the NZETS's inadequacies.

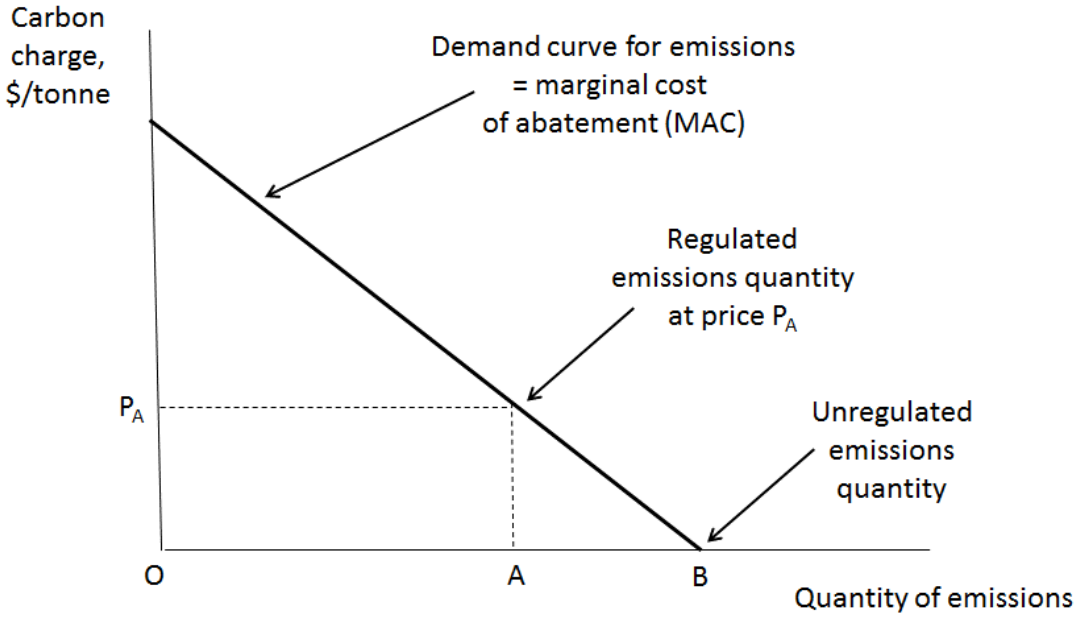
1.5 My central submission is that if the New Zealand Parliament cannot do better than this in terms of climate change policy, it should set aside this Bill and transparently declare to the world both this country's unwillingness to live up to its international obligations and its inability to forge a political consensus around genuine emission-reducing action. New legislation should wait until the domestic political situation has moved on sufficiently to make genuine action politically possible. In the interim the old, justifiably discredited NZETS is not much worse than the proposed new one.

1.6 In my submission the best course of action in the longer run, if political will materialises, would be to abandon the NZETS entirely and replace it with a properly structured carbon tax with border adjustments.

2. Economics of emissions control

2.1 In this section I lay out the basic economics of emissions control. To cut through the layers of complexity and confusion that obscure public understanding of the NZETS, I focus my analysis on the New Zealand economy's gross carbon emissions – that is, on the actual emissions of carbon into the atmosphere by human activity, setting aside for the moment supposedly "offsetting" sequestration and international permit trading. Ultimately, decarbonisation of the economy requires that it is gross emissions that must fall.

2.2 In a market economy such as New Zealand's, there is a simple inverse relationship between an [enforceable and enforced] price penalty imposed on carbon emissions and the amount of total emissions. As the amount they must pay for their emissions goes up, individuals and firms across the economy have the incentive to reduce their emissions whenever doing so is a cheaper option than paying the penalty. This means that there is a "demand curve for carbon emissions" (often called the Marginal Cost of Abatement [MAC] curve) of the following form:



This MAC curve maps out the limits of what economic instruments operating through the market mechanism can achieve. (Command-and-control policies are another matter.)

2.3 There are two ways, other than command-and-control, in which domestic policy can restrict the volume of emissions to OA:

- A carbon tax that sets the economy-wide price of emissions at P_A, bringing emissions down to the target OA;

- A cap-and-trade arrangement that (i) issues permits for a total of OA, (ii) requires that each tonne of emissions be matched by one of these permits, and (iii)allows permits to be freely traded so as to allocate those permits to the highest bidder, driving the permit price to P_A.

2.4 The economic literature on use of market-based instruments to address environmental externalities is crystal clear on one central point: an economic instrument can set price, or quantity, but not both at once . A carbon tax can set the price of emitting, but it is then up to the market to reveal the volume of emissions at which marginal abatement cost just matches the cost of paying the tax. A quantity instrument such as cap-and-trade can fix the allowed quantity of emissions, but the market mechanism then determines, through trading of permits, the carbon price at which emissions are constrained to that quantity[3].

2.5 The idea embedded in the present Bill's "Cost Containment Reserve" provision, that somehow the emissions price can be capped below P_A without causing emissions to increase beyond OA, is economically incoherent. Implementation of the proposed mechanism of printing and issuing additional NZUs – driving down the price by flooding the permits market – would just move the market down the emissions demand curve and drive emissions to a level greater than OA.

2.6 The proposal in clause 30IA that somehow the Minister can magically overcome market reality by "obtaining emission reductions to match reserve amounts of units released" is nonsense. Any emission reduction "obtained" by the Minister will simply pop up again in a new form as the market moves to its equilibrium on the MAC curve. This is the well-understood issue of "additionality" which has plagued trading schemes around the world that have tackled emissions in piecemeal fashion.

2.7 The mere existence of the "cost containment reserve" provisions in the Bill destroys at one stroke the credibility of both notional emission targets and expectations of linkage between local and overseas carbon prices. The only "certainty" that is conferred by clause 30GB of the Bill is the certainty for large and powerful vested interests that the NZETS will continue to be subject to political manipulation, and hence to capture by those same rent-seeking large corporate interests, which have hitherto held the scheme captive to their interests.

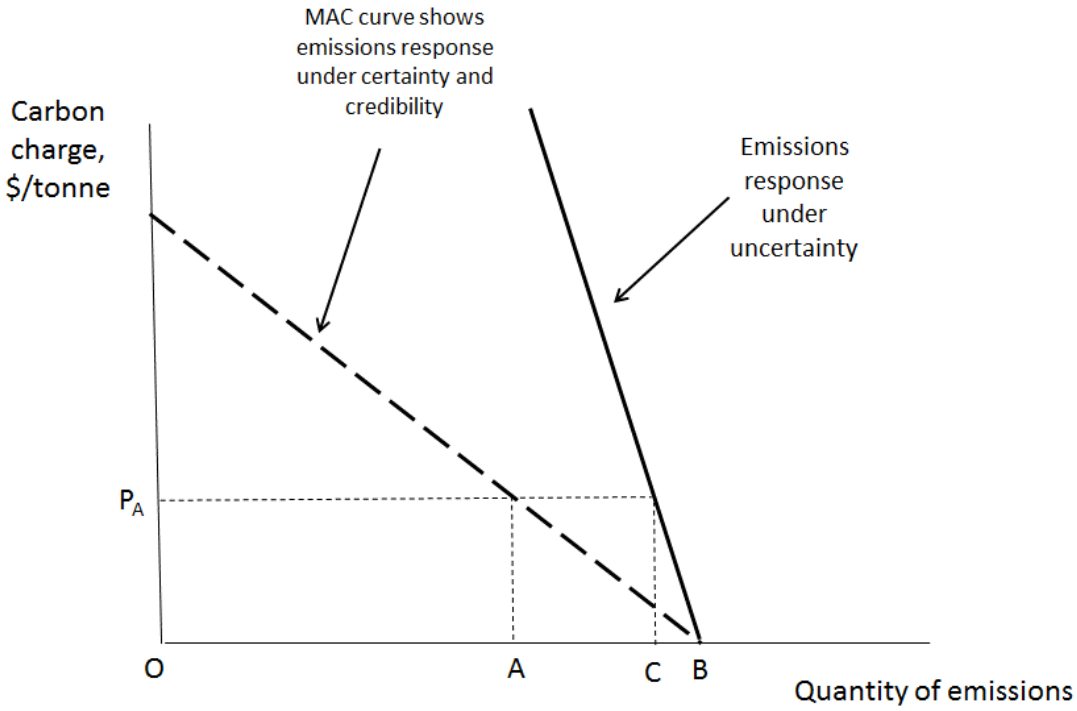
2.8 Because individuals and firms need to plan ahead in organising their affairs, including the extent to which they invest in adopting emissions-reducing technologies, the MAC (demand) curve in the diagram is drawn to show market outcomes over a period of several years – not just the instantaneous short-run reaction to a price change. Private-sector plans to cut emissions depend on

[3] Even a command-and-control restriction on emissions will carry "shadow" prices reflecting the economic cost of abatement.

expectations of what carbon price or quantity restrictions will apply more than three years into the future – that is, beyond the New Zealand electoral cycle. For this reason, a reasonable degree of certainty is required for any economic instrument to elicit the target reduction of emissions to OA. The greater the uncertainty facing private-sector decisionmakers, the less effort and resources they will devote to cutting their emissions. So

- for a carbon charge such as P_A to achieve the target OA, the amount of the charge must be expected to remain at that level (or on some pre-specified path) beyond the term of the incumbent administration;
- for a cap-and-trade system to work, the cap must credibly remain in place beyond the term of the incumbent administration; and
- even for a command-and-control policy, if it is to elicit constructive response (as distinct from non-compliance and "gaming" behaviour to shift emissions into a negotiable future) it must similarly command durable multi-party support.

2.9 In the absence of credibility, clarity, and certainty, private incentives to cut emissions will be weakened. The diagram above can be modified as follows to show the contrast between policy that is credible, certain, and has multi-party political support (the original demand curve as drawn previously) and the likely response to a higher carbon price in the absence of certainty and long-term credibility:



2.10 Under uncertainty about future policy and the corresponding price settings, a carbon price of P_A will reduce emissions only to OC rather than OA. Uncertainty

and lack of credibility kill the effectiveness of abatement policy and dramatically raise the carbon price required to achieve decarbonisation targets This has been the primary reason why the NZETS has failed in the past to reduce New Zealand's emissions, and why it will continue to fail in future in the absence of strong, credible, multi-party political commitment to durable and effective policy settings.

2.11 Inclusion in the Climate Change Response (Emissions Trading Reform) Amendment Bill of provisions that hold the local market open to overseas units, and hence carbon prices, to an extent that is not specified but will be at the whim of future Governments, means (i) that a repeat of the disastrous past experience with imported units is always on the cards, and (ii) that there is no certainty regarding the extent to which the local emission price will in future be determined offshore as distinct from domestically.

2.12 The provision in clause 30GB for the New Zealand Government to flood the NZETS market with newly-printed additional NZU units if some "trigger price" (again set at the whim of future Ministers) is exceeded adds an extra layer of uncertainty because not only must private decisionmakers form expectations of the future course of overseas emission prices - they must additionally take into account the prospect that at any time the New Zealand Government could override a high international price by straightforward inflationary resort to the printing press for NZUs.

2.13 The entire proposal to operate a "cost containment reserve" by means of releasing additional NZUs into the local market is, on the face of it, economically incoherent.

3. Price certainty or quantity certainty: you can't have both, but you can have neither

3.1 The NZETS is a confused jumble of incompatible elements. It ostensibly asks Government to set some limit on the quantity of allowed emissions, but asks it at the same time to control the market price. It leaves uncertain the extent to which domestic emission targets can be overridden at any stage by allowing the importing of emission credits. It fails to clarify whether the carbon price in the local market is to be (i) the marginal cost of domestic abatement, or (ii) determined by some external carbon price in a process of arbitrage via cross-border trading, or (iii) just some politically determined "trigger" price.

3.2 Because the NZETS has never placed a cap on the volume of allowed emissions, it has never been a quantity instrument. From the outset it has been a degraded form of price instrument, distantly akin to a carbon tax but far less simple and transparent than a textbook tax. Yet by giving it the outward form of a cap and trade scheme, the New Zealand Government was able to achieve its PR goals of (i) pretending that this was not a carbon tax, thereby fending off strong domestic

ideological opposition to such a tax, and (ii) presenting to the outside world a rhetorical commitment to adopting and advancing the Kyoto Protocol's policy architecture.

3.3 The NZU is basically a voucher that entitles its holder to cover, by surrender to the Government, whatever the implicit per-unit emission tax turns out to be in each period. By issuing large numbers of these vouchers free of charge to politically-influential insiders, the New Zealand Government in effect pays them to pollute. By allowing the vouchers to be carried over to future periods in an environment of price uncertainty, the Government makes them objects of financial speculation and market manipulation for capital gain. Having allowed NZU vouchers to be accumulated while emissions were covered by imported junk units, the Government is now faced with a large stock of "banked" NZUs overhanging the market for the next few years.

4. Was pure emissions trading ever an option for New Zealand?

4.1 In order to have emissions trading, one must have something to trade. Because pollution is an unpriced externality, the supply of permits to be traded has to come from some reputable non-market authority, in the same manner as national currencies are issued and managed. If there exists a sound carbon currency issued by an offshore agency it is theoretically possible for this to be traded across national borders and for an international price to emerge. It is then possible in principle for a national government to accept the international currency for payment of emission penalties, and to allow sequestration efforts by (for example) foresters to be rewarded in terms of the international currency. In this way, the existence of a credible multi-country cap-and-trade arrangement could in principle allow national governments to stand back from the imposition of local taxes or emission caps, allowing international arbitrage to operate push emissions down, and sequestration up, across the participating economies, in an economically efficient manner.[4]

4.2 In the original design of the NZETS, at least some of the scheme's architects evidently saw this sort of emissions trading as a possible policy option that would be neither carbon tax nor cap-and-trade. The 1998 Kyoto Protocol, to which New Zealand was a party, had foreshadowed the possible emergence of an Annex-I-wide cap and trade arrangement under which a fixed supply of UNFCCC-issued emission permits would be traded across multiple countries. Had such a scheme proved workable in practice, it could have been possible to link New Zealand to the emerging international carbon price by allowing those Kyoto emission permits to be

[4] I have discussed a related, but not identical, proposal in my article 'William Nordhaus's climate club proposal: thinking globally about climate change economics', *Policy* Quarterly 12(2): 23-29, May 2016.

used by New Zealand private sector operators to value their emissions and sequestration, with the international market prices of those units becoming the *de facto* local carbon tax rate. The problem of political uncertainty over the carbon price would be resolved by linking the NZETS price to the overseas price of international units traded under the Kyoto Protocol.

4.3 Any prospect that the NZETS could operate in this fashion to drive decarbonisation of the New Zealand economy was quickly eliminated by two things:

i. The Kyoto Protocol's permit-trading arrangements quickly collapsed under the impact of free-riding, opportunism, and outright fraud. As the value of Kyoto Emission Reduction Units (ERUs) plunged, the value of the ERU-linked local carbon currency (the NZU) created under the NZETS was dragged down, and any early impetus towards decarbonisation led by private parties acting in good faith on expectations of a meaningful carbon price was quickly reversed.

ii. The New Zealand Government was not prepared to relinquish currency-issuing authority to the UNFCCC. Had it done so, not only would local emitters have used Kyoto units to pay for their emissions, but forestry owners would have received Kyoto units as reward for their carbon absorption. But from the start the UNFCCC's RMUs (Removal Units) earned by New Zealand for its Kyoto forests were withheld from local forestry owners and instead appropriated by the New Zealand Government, with the NZU created and issued as a substitute.

4.4 The other reason for creating the NZU was to enable the New Zealand Government to pay emission subsidies to politically-influential corporate interests which refused to be subject to Kyoto Protocol discipline on their emissions.

4.5 The NZU has been basically a device for expropriating foresters and transferring wealth to private corporate vested interests.

4.6 When it interposed its own politically-controlled currency into the market while effectively exempting the economy's large emitters (including agriculture), the New Zealand Government eliminated the possibility of fully efficient cross-border permit trading under the UNFCCC, even had the death of the Kyoto Protocol not ended any vision of the NZETS as a simple trading-only scheme that could enable the New Zealand Government to abdicate from setting caps or taxes. The NZETS was left as no more than a money-go-round.

4.7 Imposition of a price cap at $25 per tonne, and now the proposal to print NZUs at will to control the local carbon price, add insult to injury. An uncapped emissions trading scheme indexed in any way to the world market can potentially bring

domestic emissions down to OA in the above diagrams only if the world price is P_A and the local price is free to rise to that level and is expected to remain there.

4.8 The essential distinction between emission reduction and mere emission trading with neither price nor quantity discipline was identified with unerring precision by Maori Party speakers in the 2008 second reading debate on the Climate Change (Emissions Trading Etc) Bill. (The Maori Party was the only parliamentary party to vote against that Bill.) As Hon. Tariana Turia said, "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. ... The Government acknowledges that this scheme will make almost no difference [to emissions]" (*Hansard* Vol. 648 p.18087).

5. Interaction with the electricity wholesale market

5.1 As rising carbon prices prevail in the New Zealand economy, the perverse consequences of the way the electricity market works will become increasingly problematic. The wholesale price of electricity is set at the margin of the spot market, where the predominant form of generation is from thermal plants burning coal or gas. A rising carbon price therefore drives up the piece of electricity – precisely the wrong signal to send when electrification is the key to decarbonisation of the economy, and when over 90% of electricity will be coming from renewables.

5.2 The pernicious relationship between the carbon price and the electricity price has been well understood since the wholesale electricity market was set up in the mid 1990s[5]. When the NZETS was established in 2008, special provision was made to protect large industrial interests (but nobody else) against the anticipated higher electricity prices, via the issuing of free NZUs on the basis of the "Electricity Allocation Factor" (EAF)[6]. Of 45 million NZUs that were initially planned to be issued free to large industry under the original NZETS, nearly half (20 million) were to compensate for anticipated higher electricity prices[7]. In 2018 roughly one-third of the 5.4 million NZUs allocated to non-aluminium industries were given on the

---

5 Amongst others, I pointed to this problem in a paper published in 1996: 'Non-Linear Pricing Theory: the Case of Wholesale Electricity Pricing in New Zealand', *New Zealand Economic Papers* 30, 1 pp.87-108.

6 For background see J. Branson, *Review of the Electricity Allocation Factor: report to the Major Electricity Users' Group*, NZIER, July 2010; and Ministry for the Environment, *The New Zealand Emissions Trading Scheme: Modelling the Electricity Allocation Factor – Issues Paper*, November 2019, https://www.mfe.govt.nz/publications/climate-change/new-zealand-emissions-trading-scheme-modelling-electricity-allocation .and other documents online at https://www.mfe.govt.nz/consultations/nzets-electricity-allocation-factor-review .

7 *The Carbon Challenge* p.190.

basis of the EAF[8]. This is thus a very important part of the discriminatory subsidy provided to these large industrial interests.

5.3 The Bill now before the House conspicuously makes no mention of the electricity market or the EAF, apart from slight tweaking of some wording by clause 135. This simply leaves the problem to fester.

6. In summary

6.1 The NZETS is not a quantity instrument because it does not cap the total allowable volume of emissions. It cannot be converted into cap-and-trade simply by capping one component in the overall set of emission currencies that are to circulate and be accepted to cover emissions. The explanatory notes to the Bill claim that (p.1) "The Bill will introduce a decision-making framework to enable the supply of New Zealand Units (NZUs) to be restricted, capping allowable emissions." The last part of this claim appears to me to be false for the following reasons:

i. So long as overseas carbon currencies are accepted as substitutes for NZUs, capping the supply of NZUs is not sufficient to cap allowable emissions

ii. So long as the "cost containment reserve" mechanism for printing additional NZUs remains in place, any notional cap on NZU volume stands to be breached whenever the politically-determined "trigger price" of NZUs is exceeded, since at this price, the mechanism means that the supply curve for NZUs becomes horizontal. (As noted above, the idea that the Minister can somehow change the aggregate market outcome by "obtaining" some specified volume of emission reductions falls victim immediately to the problem of additionality – other emissions will simply be substituted for those removed by the Minister).

6.1 The NZETS is not a price instrument in the sense intended by the economic literature on economic instruments, because it fails to provide credible price certainty and because it is highly discriminatory and distortionary in the effective prices facing difference emitting groups.

6.2 In thinking about how alternatives might look, it is helpful to go back to the threefold classification of policy measures into command-and-control, taxes, and cap-and-trade. Simplicity, clarity, transparency and effectiveness are the hallmarks of good policy under any of these three headings.

---

8 *Modelling the Electricity Allocation Factor – Issues Paper* p.5.

- A good example of effective command-and-control is New Zealand's nuclear-free stance, with its bans on nuclear power and on visits by nuclear-armed or nuclear-powered ships.
- A good example of a well-designed tax (akin to a carbon tax) is New Zealand's GST with its near-universal non-discriminatory coverage, its border adjustments to protect the international competitiveness of firms producing traded-goods and services, and its freedom from exemptions for special interests - apart from the glaring anomaly of financial services.
- An example of a market arrangement resembling proper cap-and-trade is the issuing of New Zealand Government bonds in fixed amounts via regular auctions, with the market interest rate continuously established by secondary trading on open financial markets.

6.3 In contrast to these examples of good policy, the NZETS is characterised by complexity, obscurity, openness to rent-seekers, and ineffectiveness. Its discriminatory structure, riddled with special-interest exemptions and subsidies; the distortionary impact of subsidising large industry at the expense of small and medium business; failure to deal with competitiveness issues other than by abandoning the scheme's basic integrity; failure to impose a clear, credible limit on the volume of emission permits in circulation; and history of political dominance and capture of the scheme by special (polluter) interests all combine to make the NZETS unfit for purpose.

6.4 Substitutability - to an unpredictable extent - between offshore-printed carbon currencies and the NZU means that Gresham's Law ("bad money drives out good") will perennially overhang the NZETS.

6.5 In the real world that emerged as the Kyoto Protocol was subverted and degraded, first by free-riding and defection, and subsequently by fraud and market manipulation, the NZETS quickly became simply a money-go-round for large corporate interests and well-connected insiders – an arena for what could well be characterised as legalised corruption. So thoroughly has the scheme been captured to date by rent-seeking special interests that it has served only to enrich insiders at the expense of the rest of the country, while failing completely in its ostensible purpose of reducing nationwide emissions. The outlook under the proposed legislation is for more of the same. The consequences for New Zealand's international reputation and ability to avoid future disputes under international trading rules are potentially serious.

6.6 The NZETS is, in short, a classic example of a policy designed to fail, and doomed to fail, in its ostensible central task of bringing carbon emissions down in an effective, efficient, fair and sustainable manner. Sooner or later it will have to be replaced by one or more of the genuine policy options. Parliament would better serve this

country's long-term interests by making the transition now, rather than adding yet more complexity, smoke and mirrors to a failed model.

7. Concluding comment

7.1 Over the past three decades I have consistently argued the standard economist's case for using economic instruments to address climate change. The NZETS is profoundly subversive of those arguments:

- It is not a cap-and-trade scheme because it places no genuine cap on local emissions - yet it masquerades as one, discrediting in the process the entire notion.

- It does not deserve to be called a carbon tax because it violates all the principles of good tax policy: it is capricious, unpredictable, deeply unfair and distortionary, wide open to avoidance and evasion, does not actually set a definite price on emissions, and doesn't even bring in significant revenue.

- It is, in short, a dog's breakfast that provides neither price certainty nor quantity certainty, and serves only to fuel justified public suspicion of politicians' appropriation of terms such as "economic" and "market mechanisms".

7.2 Accordingly, I can only echo the serving suggestion from Edward Lear's *Nonsense Cookery* : "Serve up in a clean dish, and throw the whole out of window as fast as possible"[9].

[9] https://www.bencourtney.com/ebooks/lear/index2.html#cookery