NEW ZEALAND BUSINESS ROUNDTABLE

SUBMISSION ON THE MINISTRY FOR THE ENVIRONMENT'S

CLIMATE CHANGE: DOMESTIC POLICY OPTIONS STATEMENT

APRIL 1999

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Summary and recommendations

1 This submission on the Ministry for the Environment's January 1999 consultation document *Climate Change: Domestic Policy Options Statement* (the Statement), is made by the New Zealand Business Roundtable (NZBR), an organisation of chief executives of major New Zealand business firms. The purpose of the organisation is to contribute to the development of sound public policies that reflect overall New Zealand interests.

2 In our view the Statement is seriously deficient. Its first major deficiency is its failure to point out that the proposed measures will not remedy the problems that motivate them, even if all countries achieve their targets. The measures will impose real economic costs on the community for no discernible environmental benefits.

3 Its second major deficiency is its lack of a sound analysis of what becomes, by default, the critical issue behind the proposals – international credibility. No attempt is made to establish the precise nature of the alleged diplomatic benefits of the proposed measures or to demonstrate that they meet them at least cost.

4 Its third major deficiency arises from its failure to consider the welfare of New Zealanders at large. No real consideration is given to the possibility that New Zealanders might be better off if the projected warming took place than if significant costs are occurred in a possibly futile effort to abate it.

5 Finally, we are concerned that the Statement and a related newsletter from the Ministry for the Environment fail to acknowledge significant scientific controversy and disquiet about the viewpoints they so unreservedly express. Far from taking a balanced, objective and consumer welfare-driven view of the science, these documents appear to be so one-sided and rhetorical as to amount to environmental advocacy. In our view, government agencies should be endeavouring to ensure that the public is well informed about the many uncertainties that surround the more alarmist claims being made about global warming.

6 Reflecting these deficiencies, the proposals would involve, in our view, a potentially large economic cost for an unspecified diplomatic benefit. This surely represents a major public policy failure in the making. No government policy actions would be credible and politically sustainable on such a basis.

7 First, we recommend that the government explicitly acknowledges that New Zealand is too small for its actions to affect the global climate. It should return therefore to its earlier policy of refusing to adopt policies that amount to unilateral action. Any decisions by New Zealand to take substantive action should be conditional on decisions by the world's major emitters. We doubt whether New Zealand should spend resources putting in place the structures necessary for a carbon tax or emissions trading if it is not diplomatically necessary to do so.

8 Second, we recommend that the government not ratify the Kyoto Protocol (the Protocol) unless doing so is imperative for diplomatic reasons. As long as it remains problematic whether the United States will ratify the Protocol, its entry into force is not a forgone conclusion.

9 Third, we recommend that the government obtain a high quality analysis of the international diplomatic aspects of the issue. This should explicitly consider likely Australian, Canadian, UK and US intentions in relation to the international commitments they have made to date. Options for New Zealand should be assessed in the light of this analysis.

1 General Comments

1.1 This submission on the Ministry for the Environment's January 1999 consultation document *Climate Change: Domestic Policy Options Statement* (the Statement), is made by the New Zealand Business Roundtable (NZBR), an organisation of chief executives of major New Zealand business firms. The purpose of the organisation is to contribute to the development of sound public policies that reflect overall New Zealand interests.

1.2 The NZBR's longstanding views on this issue were summarised in our 31 October 1996 submission on the Working Group on CO_2 Policy's discussion document *Climate Change and CO_2 Policy* (a copy of this submission is attached as Annex I). They have not changed. Nor has a proper analysis yet been done of the costs of adjusting to climate change compared with the costs of attempting to prevent it. Briefly, no convincing case has yet been made that New Zealanders would be worse off if the projected global warming to 2100 took place. Nor is there yet evidence internationally of the very substantial political determination and capacity necessary to implement policies likely to be draconian enough to materially affect the projected global warming. Unless this situation changes, New Zealand must expect to have to adapt to any climate change as it occurs. In the meantime it must balance the economic costs to the community of inevitably ineffectual climatic measures against any diplomatic costs of not introducing them.

1.3 We understand that the government could determine its decisions in the light of the Kyoto Protocol (the Protocol) in the next few months. Any material measures impose costs. In contrast, none of the domestic policy responses considered in the Statement can conceivably affect global or local climate change trends. New Zealand is too small and the targets in the Protocol are too limited. For example, one reviewer reports that:

> According to the best computer model from the National Centre for Atmospheric Research, the Kyoto agreement, even if signed by all the nations of the world, would reduce global warming by an infinitesimal 0.18 degrees Celsius over the next fifty years.[1]

1.4 The first issue the government needs to address is the rationale for ratifying the Protocol at all, given the current indications that poor countries have other

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[1] Jerry Taylor, "Clouds over Kyoto: The Debate over Global Warming", *Regulation*, Vol 21, No 1, Winter 1998, pp 57-62.

priorities, the US Senate's opposition, and the absence of any material environmental benefits from the proposed measures. The government's original policy of not taking unilateral action is the only sensible policy for a small country to take. It unwisely compromised this position in its (since deferred) pledge to bring in a carbon charge in 1997 depending on circumstances that were not conditional on what other countries were doing. The government should revert to its original policy.

1.5 The second issue the government should address is the impact of global warming on consumer welfare. Currently it has not been established that New Zealanders at large would be worse off if the projected global warming were permitted to occur. Benefits would presumably include fewer cold-related deaths and illnesses, less fuel for winter heating and longer hours of outdoor leisure activity. Agriculture might benefit from longer growing seasons and greater atmospheric carbon dioxide. Far from making a balanced assessment of the mainly overlooked benefits against the heavily emphasised costs, the Statement simply ignores the issue of overall consumer welfare.

1.6 Furthermore, even if a good case could be made that New Zealanders at large would regard themselves as worse off if the projected warming occurred, the case would still need to be made that the costs of abatement would not be greater.[2] This has not been done.

1.7 This indifference to the welfare of New Zealanders at large makes the proposed policy approach fundamentally elitist. The general public is essentially being told that its welfare is irrelevant. New Zealanders are being led to believe that they must incur costs because the New Zealand government has made, or wants to make, international commitments. The disjuncture with the attitude taken to New Zealand's international credibility when the nuclear-free zone issue was being debated is jarring.

1.8 One defence of the measures in the Kyoto Protocol might be that they represent the best immediately achievable step towards future measures that would make a difference to the global climate. This is a judgment about future climate change politics. Such political judgments should be based on sound analysis. A serious analysis would have to assess the reasons for the current

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[2] The Competitive Enterprise Institute has recently released a study by Professor Frank Gross, *Could Kyoto Kill? The Mortality Costs of Climate Policies.* This paper argues that the measures that could be required to meet the Protocol's targets could increase highway fatalities, worsen indoor air pollution and increase poverty-related deaths.

resistance by the United States and non-Annex I countries to the pursuit of even the limited targets currently proposed. This resistance will surely be greatly increased in the face of much more costly measures.[3] The problematic and tentative nature of the predicted climatic changes and their effects on human welfare will come under increasingly sceptical scrutiny. The costs of adapting to projected warming can also be expected to receive greater attention.

1.9 Nowhere does the Statement acknowledge that the contemplated policies will not prevent the purported environmental detriments. It does not note that even if the United States and non-Annex I countries adopted the Protocol, the actions envisaged would not prevent the adverse environmental effects that are their only justification. Nor does it inform readers that the United States Senate has passed a resolution opposing ratification of the Protocol, as matters stand at present (the text of the Byrd-Hagel resolution is attached as Annex II). Nowhere does it acknowledge that significant uncertainties and disagreements exist about the science (see section 2 below). The rationale for unilateral action by New Zealand, or even of ratification in the face of the above considerations, is not discussed. It is of grave concern that the Statement is seriously deficient in so many respects.

1.10 The Ministry for the Environment's January-February 1999 newsletter only serves to confirm the impression created by the Statement that (too many) officials have adopted a position of uncritical and one-sided advocacy in relation to this issue. The newsletter makes sweeping assertions about environmental detriments while ignoring all possible benefits and scientific uncertainties and controversies. It cavalierly asserts that there is "... increasingly clear evidence that climate change is caused by rising concentrations in the atmosphere of greenhouse gases resulting from human activities ... . " (but such statements merely beg the questions of materiality and authority. In whose opinion is it "increasingly clear", why should such views be regarded as authoritative when other experts disagree, are any adverse effects material in the light of other influences on the global climate, and do they outweigh beneficial effects?) It also contentiously cites the warmer global temperatures in 1997 and 1998 in support of the climate change

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[3] According to William Niskanen in testimony to the Senate Committee on Energy and Natural Resources on 30 September 1997, economist John Nordhaus estimated the net costs of stabilising the concentration of greenhouse gases at US$12.5 *trillion* in 1989 dollars.

hypothesis[4] and uses estimates of the costs of a naturally occurring phenomenon, El Nino, to convey the impression that the proposed measures will be efficacious in reducing climatic variability. The essence of this approach is to assert that there may be a connection even if the direction of any effect is unclear or even if it may be equally plausible to say that there may be no material connection. In a highly complex situation in which everything may be connected to everything else, no matter how tenuously or indeterminately, one-sided assertions are cheap but dangerous. Again no mention is made of the fact that the proposed Kyoto measures will fail to solve any of the alleged problems. It is difficult to avoid the conclusion that the Ministry has lapsed into one-sided advocacy and rhetoric. It appears to be seriously failing to give objective and balanced analysis and advice. The government surely deserves better, and the public at large certainly do.

1.11 What decisions might ministers soundly take? Any measures that the government might announce would have a trivial effect on the global climate. Any credibility they derive arises from their impact on New Zealand's standing internationally. *A careful analysis of the international politics of global climate change agreements is clearly required.* This analysis should point to options that could usefully raise or protect New Zealand's international standing at minimum cost. The choice between such options will depend on the balance between their economic cost and their diplomatic benefits. Such an analysis would require consideration of the responses of other countries (such as Australian, Canada, the United Kingdom, and the United States). It would also require consideration of other international initiatives involving New Zealand that could have a compounding or mitigating effect.

1.12 Section 4.3 of the Statement discusses the international credibility issue. The discussion comprises only four paragraphs. None mentions the likely responses of other countries. None assesses the issue of what responses by New Zealand would best meet the credibility objective at least economic cost. None raises the issue of compounding or mitigating factors from unrelated diplomatic activities. One paragraph does mention small Pacific Island countries that could be at risk from global climate change. But this paragraph completely fails to consider how best to deal with the potential problems of

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[4] We understand that Jerry Mahlman, a modeler and Gore adviser, has publicly denounced attempts to link the warmth of 1998 to global warming. See also Patrick Michaels, "Long Hot Year: Latest Science Debunks Global Warming Hysteria", *Policy Analysis*, 31 December 1998, Cato Institute.

such countries at least cost. For example, it fails to consider what diplomatic advantages might accrue if New Zealand offered to open its borders to the citizens of these countries should international action to offset global warming prove ineffectual.

1.13 Reflecting these factors, the NZBR continues to believe that unilateral actions by New Zealand would be unjustified and premature. Any decisions taken by the government should be explicitly conditional on decisions taken by other Annex I countries, notably – given its size – the United States.

1.14 We express this view in the knowledge that the projections in the Statement give rise to the possibility that New Zealand could benefit from being a net supplier of carbon credits. This would occur if New Zealand's credits from carbon sinks exceeded its requirements in terms of the growth in emissions (refer to chapter 3 in the Statement) and if New Zealanders could sell the excess to non-New Zealanders. However, in our view it would be premature to put much reliance on the possibility that the countries that stand to benefit from carbon sinks will have the political clout to transfer material amounts of wealth from other countries in this manner. Being seen to advocate such transfers would not be consistent with the allegedly critical policy objective of enhancing New Zealand's international credibility. Furthermore, it could be difficult to restrict any benefits to New Zealand owners of New Zealand forests (rather than non-New Zealand owners).

1.15 Since the Statement fails to analyse the implications of the issue for New Zealand's international standing, no environmental or diplomatic case has been made for any measures to be implemented at this stage. The government should require a careful analysis of its diplomatic objectives. This should identify relevant options for New Zealand in the light of those objectives. The economic costs and benefits of those options should be assessed by those who are competent to do so. An informed judgment might then be made as to which options involve the best compromise between economic cost and diplomatic gain. Such a procedure would provide a much better basis for public consultation and debate, and for subsequent government decision-making.

1.16 One important point that does emerge from the material reviewed in making this submission is that the government may have a useful role to play in reducing the amount of misinformation that exists on global warming. The issue has attracted highly emotional and alarmist comments. Arguably, sound

science has lost out to populism in the public mind. There is also some evidence that it is affecting the views of scientists (see paragraph 2.5 below). Dissenting scientist Richard Lindzen has commented on the issue in the following terms:

> Public perceptions, under the influence of extensive, deceptive, and one-sided publicity, can become disconnected from reality. For example, Alabama has had a pronounced cooling trend since 1935. Nevertheless, a poll among professionals in Alabama found that about 95 percent of participants believed that the climate had been warming over the past fifty years and that the warming was due to the greenhouse effect. Public misperceptions coupled with a sincere desire to "save the planet" can force political action even when politicians are aware of the reality. [5]

1.17 It is surely conceivable that the Ministry for the Environment is contributing to such information and perception problems. In our view the government has a responsibility to prevent the public debate being unduly influenced by special interests within the bureaucracy. The Ministry for the Environment is not well placed to undertake a dispassionate, consumer-welfare driven approach to these issues, and it is highly desirable that the careers and funding of the government's scientific and diplomatic advisers do not become overly dependent on the level of public concern about this issue.

2 The science of global warming

2.1 The Statement, on pages 20-21, briefly reiterates summary views of the science of global warming. These views are extracted uncritically from the summaries for policy makers of IPCC Working Group reports. The fundamental problem here is that officials appear to be proceeding on the basis that disputes amongst scientists over the science of global warming do not have to be acknowledged. No account is taken of the controversy surrounding such summaries, or even of the qualifications to them that may be inferred from other IPCC material. For example, the Statement cites the IPCC's conclusion that "the balance of the evidence suggests a discernible human influence on global climate" but, unlike Taylor, it does not cite other statements in the same document that clearly

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5 Richard S Lindzen, "Global Warming: The Origin and Nature of the Alleged Scientific Consensus", *Regulation*, November 1996.

question such an unqualified assertion.[6] In any case, this statement fails to cast any light on the materiality or direction of any effects. Officials also cite uncritically claims that global warming will have significantly adverse *net* effects on agricultural productivity, human health and weather variability.[7]

The 'consensus' issue

2.2 No assertion about the consensus of opinion can overcome the uncertainty which stems from valid disagreements about the science. The Statement gives the impression that the IPCC's 'discernible human influence' finding is both beyond dispute and significant in public policy terms. Neither proposition appears to be valid. On the first point, chapter 8 of the related IPCC Working Group I report observes that:

- "The answer to this question [of when the detection and attribution of human-induced climate change is likely to occur] must be subjective, particularly in the light of the large signal and noise uncertainties discussed in this chapter."

- "Some scientists maintain that these uncertainties currently preclude any answer to the question posed above. Other scientists would and have claimed, on the basis of the statistical results presented in Section 8.4, that confident detection of a significant anthropogenic climate change has already occurred."

- "… few would be willing to argue that *completely unambiguous* attribution of (all or part of) this change has already occurred, or was likely to happen in the next few years."

- "Our ability to quantify the magnitude of this effect is currently limited by the uncertainties in key factors, including the magnitude and patterns of longer-term natural variability and the time-evolving patterns of forcing by (and in response to) greenhouse gases and aerosols."

As this material acknowledges, the unqualified conclusion cited in the Statement cannot be represented to be an objective scientific finding. Rather, it

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6 Taylor, *op cit*, p 59.

7 See, for example, the Ministry of Commerce's pamphlet "Climate Change: What You Should Know", March 1999, pages 1 and 7.

is a statement of the authors' subjective judgments as to which scientific opinions they wished to emphasise. The basis for their preference is not spelt out in chapter 8.

2.3 In any case it is not important for human welfare whether or not the IPCC's conclusion is correct in the terms in which it is expressed. There is a sound scientific basis for predicting some global warming in due course, even if its effects are not yet apparent. Rather, the central issue is how much warming will occur taking natural variability into account, how it will be distributed through time and space, and how harmful it will be, having regard to opportunities to mitigate its effects. This particular, much-cited, IPCC conclusion fails to provide any useful information about such matters.

2.4 Other material throws some light on these more important questions. For example, one survey, conducted in 1996, of 1,000 scientists in Germany, the United States and Canada found that:

- most of the respondents were not optimistic about the predictive ability of the current state of scientific knowledge to provide reasonable predictions of climate variability over time scales of 100 years;[8]

- " … the scientific community tends towards the position that we cannot yet explicitly state the detrimental effects that climate change may bring"; and

- "… there is some agreement that global warming is a process already underway but there is a greater tendency to agree that it is a prospect for the future."[9]

2.5 Interestingly, there was a consensus among the same respondents that "climate change has provided enough knowledge so that the initiation of abatement measures is warranted." As the authors of the paper noted, such judgments reflect the views of the scientists about matters outside their expertise, such as the effect on humans, their ability to adapt, and the costs of adaptation relative to the costs of abatement. They note the incompatibility between the uncertain state of knowledge about the science and the willingness to call for abatement action. They conclude that scientists may be being influenced by the social and

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8 The mean response to this question was 5.2 (where 1 = a great degree of ability; 7 = not at all).

9 Dennis Bray and Hans von Storch, "Climate Science: An Empirical Example of Postnormal Science", *Bulletin of the American Meteorological Society*, March 1999, pp 439-455.

political context of their work. (It is noteworthy in this context that the president of the National Academy of Sciences reportedly felt compelled at its 1990 annual meeting to warn the membership against lending their credibility to issues about which they had no special knowledge.)

2.6 The same survey found that US scientists were less convinced of the merits of the models than were their German counterparts and (consistently) saw a less urgent need for a policy response. This may be consistent with the following observation from the paper by Lindzen cited above:

> Indeed, a recent Gallup poll of climate scientists in the American Meteorological Society and in the American Geophysical Union shows that a vast majority doubts that there has been any identifiable man-caused warming to date (49 percent asserted no, 33 percent did not know, 18 percent thought it had occurred; however, among those actively involved in research and publishing frequently in peer-reviewed research journals, none believes that any man-caused global warming has been identified so far).

2.7 The pressure to suppress the problem of genuine scientific uncertainty by recourse to reliance on a single 'consensus' position has led to a myriad of polls canvassing the opinions of groups on the issue. Problems of bias and the respondent's lack of expertise may arise. Nevertheless, with this caveat, it needs to be recognised that thousands of individuals with a scientific background appear to be unconvinced by claims of serious global warming. For example, Taylor reports that over 4,000 scientists signed the so-called Heidelberg Appeal that expresses the view that no compelling evidence exists to justify controls of anthropogenic greenhouse gas emissions. Peter Hartley, Ken Medlock and Michael Warby[10] also cite sceptical statements signed by groups of scientists in early 1992, mid-1996 (the so-called Leipzig declaration) and early 1998 (the Oregon petition).

2.8 Such disputes about the science should occasion no surprise given the complexities of the science of the atmosphere, the degree to which existing models must over-simplify reality, and the relatively short number of years in which research has focused on greenhouse gas issues.

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10 Peter Hartley, Ken Medlock and Michael Warby, "First Things First: Development and Global Warming", unpublished draft paper 1999. A copy of the relevant extracts is attached as Annex III.

Fears* of *much-increased precipitation

2.9 According to the IPCC, global rainfall has increased by about 1 percent during the twenthieth century, although the distribution of this change is not uniform either geographically or over time.[11] Data are a problem, suggesting that the statistical reliability of this observation may also be in doubt. Increased average precipitation could benefit many farmers, particularly in conjunction with a warmer average temperature and greater concentrations of carbon dioxide.

Fears of much-increased temperatures

2.10 Observed global temperatures have remained far below those predicted by the computer models that served as the basis for the United Nations Framework Convention on Climate Change. What warming has occurred appears to have been extremely moderate and benign, being largely confined to the cold northern latitudes during winter nights.[12] There appears to be no doubt that the earlier IPCC estimates have been discredited and that current predictions of warming are much more modest.

Decline in Median Projected Warming	
Estimate	*Value*
IPCC 1990 initial estimate	3.2°C (5.7°F)
IPCC revised 1992 estimate	2.6°C (4.7°F)
IPCC revised 1995 estimate	2.0°C (3.6°F)
After allowing for overestimation of direct CO_2 warming	1.75°C (3.2°F)

[11] As cited by Jerry Taylor, *Global Warming: The Anatomy of a Debate*, 16 January 1998. Presentation to the John Hopkins University Applied Physics Laboratory.

[12] See Jerry Taylor, 16 January 1998.

After allowing for flattening of methane concentration	1.5°C (2.7°F)
After allowing for decrease in CO_2 accumulation	1.25°C (2.3°F)

2.11 Patrick Michaels, a dissenting environmental scientist, believes that recent evidence on the direct effects of carbon dioxide warming and likely lower levels of atmospheric methane and carbon dioxide will lead to further reductions in projected warming. The table above summarises in the last three rows his view of what should be projected. These predictions differ markedly from the single prediction cited by the Statement of further warming of about 3°C by 2100. Disturbingly, the Statement does not acknowledge the existence of such a wide range of views.

2.12 Would such warming be a problem? Not necessarily. Thomas Gale Moore of the Hoover Institution and Stanford University has estimated that moderate warming would generate net benefits for the United States of about 1 percent of total output. He has also argued that it would be likely to produce material health benefits.[13]

Fears of much-increased sea levels

2.13 Taylor reports that while there is some evidence that sea levels have risen 18 cm during the past century (with an uncertainty range of 10-25 cm), there is little evidence that the rate of rise has accelerated, contrary to global warming theories. Lindzen comments:

> Many aspects of the catastrophic scenario have already been largely discounted by the scientific community. For example, fears of massive sea-level increases accompanied many of the early discussions of global warming, but those estimates have been steadily reduced by orders of magnitude, and now it is widely agreed that even the potential contribution of warming to sea-level rise would be swamped by other more important factors.[14]

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13 Thomas Gale Moore, "Why global warming would be good for you", *The Public Interest*, Winter 1995, pp 83-99; and "Life, Death and Climate", in World Climate Report – Health and Economics, mimeographed.

14 *Op cit*.

Fears of extreme weather variability

2.14 While the Ministry for the Environment acknowledges uncertainty about the degree of climatic variability, it is putting a lot of emphasis on the alleged "identification of potentially serious changes". However, again the body of the IPCC's 1996 report expresses more caution about such assertions than the Statement's extracts imply. For example, Working Group I's detailed report includes the following qualifying observations:

- "In the few analyses available, there is little agreement between models on changes in storminess that might occur in a warmer world. Conclusions regarding extreme storm events are obviously even more uncertain."

- "The data on climate extremes and variability are inadequate to say anything about global changes … ."

- "Other than the few areas with longer term trends to lower rainfall (eg the Sahel), little evidence is available of changes in drought frequency or intensity."

2.15 Michaels and some colleagues have found a statistically significant *decline* in the interannual worldwide variability in temperature since 1945. In addition, they have found no statistically significant changes in day-to-day temperature variations or in the number of record high or low temperatures. Michaels also cites research into the rate of flow of streams by Harry Lins and J R Slack of the US Geological Survey which finds no change in the frequency of highest flow (flood) events, and a decrease in the frequency of lowest flow (drought) events.

2.16 In personal correspondence Professor Lindzen sums up his perspective on the issue of climatic variability as follows:

> Finally, with respect to variability, there is the trivial fact that variability in the extratropics is proportional to the temperature difference between tropical and high latitude regions, and that this is expected to be smaller in a warmer world. There is absolutely no evidence in observations, theory, or modeling for any claim to the contrary. The claim of the opposite is simply a political statement that the public doesn't seem to find slight warming all that frightening. One therefore makes up something that might sound scarier. The argument is sometimes put forward that storminess

> would increase because of a more intense hydrological cycle. Not only is there no evidence for an increased hydrological cycle, but such an increase, if it were to exist, would be largely irrelevant to extratropical variability.

2.17 This material appears to indicate that scientists can be a lot more confident that the build-up in greenhouse gases will lead to some warming (relative to whatever temperature changes would actually take place as a result of natural variability, including unforeseen events) than about the proposition that we are entering a world of generally increased variability, unpredictability, and peril. Indeed, there appears to be some empirical evidence, and at least one scientific argument, for the contrary proposition.

2.18 Given that the IPCC reports that some natural phenomenon that are important to forecasting natural variability are not well handled by current models, it is even less clear what is likely to happen to actual global average temperatures by 2100. Effects on human activity depend on what happens to actual temperatures.

3 Least-cost policy options

3.1 A least-cost policy is one that meets a given policy objective at least cost. The least-cost policy cannot be objectively determined when there are conflicting policy objectives and no objective means of trading them off.

3.2 On page 37, the Statement proposes the following objectives for policy choices:

- contribution to the least-cost policy objective[15]
- international credibility
- equity
- practicality and durability
- flexibility.

3.3 While the least-cost objective may well be consistent with achieving a given reduction in emissions at least cost, it may not be consistent with achieving a satisfactory level of international credibility at least cost. (Refer, for example, to

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15 The least-cost objective is defined as an approach that provides an equal incentive to reduce all carbon-dioxide equivalent emissions.

the discussion above of one possible response to the problems of small Pacific Island nations.)

3.4 The emphasis in the Statement on the least-cost objective reflects its failure to treat the Protocol as a political document and to concern itself with the interests of New Zealanders at large. If many New Zealanders would regard themselves as better off under projected global warming, the case for taxing them in order to satisfy the interests of other countries must be made rather than assumed.

3.5 In short, the Statement completely fails to establish that the policy proposals represent the least-cost response to the political problems posed by the Kyoto issue.

4 Proposed policy options

4.1 In principle, a given target for emissions will be achieved at least cost if the marginal cost of reducing emissions is the same across all activities. This optimal result could be obtained by a uniform carbon tax or by tradable permits. Grandparenting arrangements would not produce a least-cost outcome if they failed to meet this condition. However, grandparenting in the form of grants of tradable permits that permitted the recipient to close down immediately and sell the permits would be consistent with a least-cost reduction in emissions.

4.2 The issue of equity, viewed as a compensation or income distribution issue, is logically distinct from the issue of efficiency. Given that none can be excluded from the benefits of the hoped-for avoidance of climate change, and that the benefit any individual derives does not obviously detract from the benefit that any other individual can enjoy, climate change policies have the attribute of a public good. In general it is inequitable to tax a few for benefits that will accrue to the public at large. This is illustrated by the common adage that "those who benefit should pay". This approach is consistent with the Public Works Act 1981. Under this Act, it would be illegal for the Crown to take land by force for public works without compensation.

4.3 As Richard Epstein has cogently argued, there are also efficiency arguments for requiring compensation to those from whom property is taken in the interests of the wider community.[16] The benefits of paying compensation relate to the

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16 Richard A Epstein, *Takings: Private Property and the Power of Eminent Domain*, Harvard University Press, Cambridge, Massachusetts, 1985.

desirability of preserving the rule of law and forcing those who would take for the benefit of others to balance the costs against the benefits. Motorists could, for example, be compensated for the present value of any increases in petrol taxes through reductions in periodic licence or registration fees (or even in the form of negative fees). The incentives to use less fuel would be much the same.

4.4 Where a policy change allows the owner of a sink to sell permits, the same issue arises. In this case the question is whether any compensation to the emitter for the takings should be funded in whole or in part by the owner of the sink. In principle there is a case, where the benefits from a policy are not evenly distributed across individuals, for requiring those who benefit disproportionately to contribute disproportionately to compensating losers. This is what could be expected to occur if the transaction could be conducted privately without the active intervention of the Crown and where the common law protects the property rights of losers. Difficulties arise in determining what proportions will apply and in controlling any government's innate interest in expropriating a greater share of the benefits than is required to compensate losers so as to use the excess to buy votes.

4.5 The practical difficulties involved in applying the principles just discussed may be insurmountable in many cases. This is a matter that can only be determined by a careful examination of the circumstances applying to any given case.

4.6 In the NZBR's view, the case for any regulatory takings in respect of global climate change is currently so weak that requiring the issue of compensation for takings to be specifically addressed could promote more a more rigorous discussion of whether regulatory interventions are warranted at all.

5 Concluding Comments

5.1 In the current climate of opinion, virtually every out-of-the-ordinary weather event seems likely to be linked in the popular media to global warming. Those in positions of authority have a responsibility to do their best to ensure that public debate on these issues is not unduly influenced by alarmist views. This means informing the public about the tentative nature of much of the science and therefore of any implications for human welfare.

5.2 It is disturbing to find instead that the Statement and associated documents are failing to convey the range of reputable scientific opinion about many of these

issues. Arguably, they also lend undue credibility to alarmist and populist propositions by failing to distinguish adequately between relationships that may be a remote possibility and relationships that are considered by scientists to be more plausible than competing and contradictory hypotheses and are quantitatively material. A more sober approach is surely warranted.

5.3 Populist agitation over this issue in recent years has threatened the development of objective science and sound public policy. The reductions in the IPCC's projections for global warming point to the tentative nature of the science and the folly of over-reacting to preliminary findings.

5.4 Sceptical scientists are making strong claims that recent climate trends are not consistent with the predictions that have so far driven policy-makers. For example, Patrick Michaels concluded his review of trends in the satellite records of temperatures and of trends in climate volatility as follows:

> The observed data on climate and recent emissions trends clearly indicate that the concept of "dangerous" interference in the climate system is outmoded within any reasonable horizon. That makes the Kyoto Protocol a useless appendage to a treaty that has been bypassed by scientific discovery. It is time to reconsider the Framework Convention.

5.5 In this submission we have focused on presenting scientific material that dissents from the views embodied in the Statement. Our purpose in doing so is primarily to demonstrate the point that the views about the science that the Statement presumes can be taken as given are in fact much more controversial than the Ministry for the Environment appears to be prepared to acknowledge. We claim no expertise in adjudicating debates between scientists about scientific matters. However, we are concerned that officials present these controversies objectively in the interests of informed public debate.