NEW ZEALAND BUSINESS ROUNDTABLE

SUBMISSION ON *KYOTO PROTOCOL: ENSURING OUR FUTURE*

DECEMBER 2001

SUBMISSION ON KYOTO PROTOCOL: ENSURING OUR FUTURE

1 Introduction

1.1 This submission on the New Zealand Climate Change Programme's Consultation Paper *Kyoto Protocol: Ensuring our Future* (the Consultation Paper) is made by the New Zealand Business Roundtable (NZBR), an organisation comprising primarily 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 government has stated that it intends to ratify the Protocol by September 2002. No other comparable countries have made this commitment.

1.3 We believe that ratification would have far-reaching and harmful implications for economic activity in New Zealand, and for the living standards of New Zealanders. It would put the competitiveness of many major industries at risk, yet any environmental benefits arising from the Protocol would be barely discernible.

1.4 It makes no sense for New Zealand, a country whose average incomes have already slipped to the point where they are less than half those of leading countries, to incur major economic costs in the absence of concerted international action. The United States, which is the source of 25 percent of greenhouse gas emissions, will not be ratifying Kyoto, and nor may other industrialised countries, including Australia. China, India and other major developing country emitters will also be outside it. China is now the world's largest CO_2 emitter, the United States second and India third. On current projections China and India will account for half the world's emissions by 2012.

1.5 The NZBR's position is *not* that climate change is not an issue, although the science of global warming remains uncertain. It is also the case that the economic justification for costly international action to mitigate any warming trends seems highly dubious on present evidence. However, the essence of our position is that it would be foolish for New Zealand to act in advance of other major countries, in particular the United States and Australia.

1.6 We believe the government has not presented the public with a logical case for ratification of the Protocol and that many of the arguments and assertions it has

made are unfounded. The consultation exercise is an opportunity to examine the issues in a more rigorous manner.

1.7 In Section 2 of this submission we set out, in what we believe is a logical sequence, the key issues relating to the Protocol. Section 3 explores the likely economic costs to New Zealand of ratification. Section 4 evaluates the government's position in the light of this material. An annex supports this section by commenting on many official statements that fail, in our view, to treat the issues in a balanced manner. Section 5 presents our conclusions.

2 Steps in evaluating the case for ratification

2.1 We suggest the following questions need to be asked in considering ratification.

What does the science say?

We believe that the following is a fair summary of key points in the scientific debate:

- Atmospheric CO_2 has increased by around 31 percent from pre-industrial times (eg 1750) to the present day. Eighty percent of this increase occurred after 1945.

- The earth's surface cooled for five hundred years to around 1910. It rose by about 0.5°C to 1945. A period of marked cooling between 1945 and 1970 generated concerns about the onset of another ice age. These shifts appear to reflect natural variability.

- The earth's surface has warmed by somewhat less than 0.5°C since 1970 – resulting in an estimated overall rise of about 0.6°C last century. Even so, satellite and balloon data show no material trend rise in the average tropospheric temperature since 1979.

- No significant trends are evident in the last century in storm activity or in the rate of rise in the sea level.

- Scientists accept that human activity has contributed to the rise in atmospheric CO_2, particularly since 1950. Other things being equal they agree that this is likely to warm the earth. They debate *how much* it might affect the climate.

- The climate change models (CCMs) used by the International Panel on Climate Change (IPCC) differ in the way they model the climate. These differences lead to the IPCC's assumed range for climatic sensitivity of 1.5-4.5°C. Scientists from the Harvard-Smithsonian Centre for Astrophysics have suggested that there is a 95 percent probability that the increase would fall in the range from 0.5°C to 3.3°C.[1] Many reputable scientists believe any warming is likely to be towards the bottom end of this range. New Zealand is only likely to warm by about two thirds of any global mean temperature change.

- The rate of growth in fossil fuel CO_2 emissions has slowed to only 0.6 percent per annum for the last decade. The slowdown is even more marked for methane. Forecasters do not know whether the lower rates of increase will persist.[2]

- The emission profiles that drive the upper end of the IPCC's scenarios currently look implausible.[3]

- Future emissions cannot be accurately forecast over a hundred year period because it is impossible to forecast future technological developments with non-fossil fuel sources.

- It is not known whether the global effects of human-induced changes will be aggravated or offset by unpredictable natural variability. The predominance of water vapour (over 95 percent of total greenhouse gas) means that warming due to CO_2 is predicated on positive feedback mechanisms, which may be offset by negative feedback mechanisms which are currently not well understood.

Only more information and better science can reduce this uncertainty.[4] Further research is likely to improve understanding of the relevant factors, including feedback

---

1 Willie Soon, Sallie Baliunas, Arthur Robinson and Zachary Robinson, *Global Warming: A Guide to the Science*, The Fraser Institute, Risk Controversy Series 1, Canada 2001, p 5. (This can be downloaded from http:/www.fraserinstitute.ca/publications/books/globalWarming/GlobalWarmingGuide.pdf.)

2 See Bjorn Lomborg, *The Skeptical Environmentalist*: *Measuring the Real State of the World*, Cambridge University Press, 2001, pp 279-80 for a detailed discussion.

3 Lomborg, *op cit*, p 301.

4 Richard Lindzen, professor of meteorology at MIT and a member of the National Academy of Science's panel on climate change in 2001, has stated: "But – and I cannot stress this enough – we are not in a position to confidently attribute past climate change to carbon dioxide or to forecast what the climate will be in the future". See 'The press gets it wrong: our report doesn't support the Kyoto Treaty', *Wall Street Journal*, 11 June 2001.

effects. Extreme scenarios seem unlikely, but the uncertainties concerning emissions and the science mean they should not be ignored.

Would moderate climate change be a bad thing?

It is often assumed that any level of warming would be harmful. This is not obviously the case, either for the world as a whole or for New Zealand. The earth's temperature has been higher in earlier periods. Higher levels of CO_2 in the atmosphere would benefit world food production.

Warming would benefit people in some regions and harm people in others. The IPCC's 2001 report projected net economic gains for many developed countries for a global mean average temperature rise of up to 2°C with net losses beyond 3°C. It finds that many developing countries would experience net economic losses for all magnitudes of warming.

Warming may result in a stabilisation of rising sea levels or even a fall.[5]

Possible benefits to New Zealand from moderate warming are summarised in section 3.

What would be the global benefits of the Protocol measures?

Bjorn Lomborg summarises analyses based on a temperature rise of around 2.5°C that suggest that the net present value of the cost to the world's population from moderate global warming could be US$5 trillion in 2000 dollars.[6] This is about 16 percent of one year's gross domestic product (GDP) for the Annex I countries (primarily OECD members and economies in transition). Any benefits from the Protocol measures would take the form of reducing such a cost. It is unrealistic to contemplate its elimination.

William Nordhaus, an economist at Yale University, has analysed the potential economic impact of the Kyoto Protocol as revised in Bonn in July 2001. He finds that the Kyoto-Bonn accord will have almost no effect on emissions. He projects a

---

5 Chris de Freitas, 'Eight things the government won't tell you about the Kyoto Protocol', *National Business Review*, 14 December 2001.

6 Lomborg, *op cit*, p 310. This is compared to a hypothetical case in which the same build-up in greenhouse cases does not cause any global warming.

reduction of global emissions of only 1.5 percent by 2010 assuming complete compliance.[7]

Bjorn Lomborg puts Kyoto into perspective in another way. Its effect would be to reduce the projected temperature by 0.15°C in 2100. This is equivalent to putting off the higher temperature by just 6 years.[8]

In short, the benefits from complete compliance with the Protocol seem likely to be scarcely discernible in relation to forecasting errors. The minister of energy implicitly acknowledged these realities in a recent article in which he referred to the climatic effects of the Protocol as 'limited'.[9]

What would be the global costs of Kyoto?

Economists have estimated the cost to Annex I countries of complying with the Protocol. The cost is greatest if there is no trade in emissions. It could be around US$346 billion in 2010, or 1.5 percent of the group's present GDP. Trade in emissions reduces the estimated cost to around 0.7 percent of the group's present GDP.[10]

It would be absurd to incur major economic costs for minimal effects on climate change. Lomborg calculates that the costs to the United States alone, if there is no trading, would be higher than the estimated cost of providing the world's population with clean drinking water and sanitation. Such a measure would avoid two million deaths a year and save around 500 million a year from serious illness.[11]

Some of Lomborg's critics have argued that this is not a relevant comparison. To them, the world should improve water *and* implement Kyoto. This objection ignores the need to prioritise because economic resources are scarce. The water example simply illustrates the opportunity cost of an economic decision.

The global costs of Kyoto seem unlikely to outweigh the benefits. This is clearly the conclusion reached by the US administration. The focus on arbitrary 1990 targets has no economic basis. Even if warming occurs, adaptation and adjustment could be more

---

7 See Cooler Heads Newsletter, Competitive Enterprise Institute, Vol 5, No 2, November 2001.

8 Lomborg, *op cit*, p 319.

9 Pete Hodgson, 'Climate Change: A Burning Issue for New Zealand', *The Independent*, 12 December 2001.

10 Lomborg, *op cit*, p 303.

11 Lomborg, *op cit*, p 318.

sensible responses. In any event, better strategies for abatement than Kyoto seem feasible, including deferred action on emissions (see paragraph 4.8 below).

What are the likely costs and benefits of ratification for New Zealand?

These are discussed in the next section.

3 Economic costs and benefits for New Zealand

3.1 The minister of energy recently defended the government's stance on ratification on economic grounds. He argued that the economic costs of inaction, particularly to agriculture, exceed the cost of ratification.[12]

3.2 The minister was presumably referring to economic modelling work reported in the Consultation Paper. This suggests that while the costs of complying with the Kyoto Protocol could reduce New Zealand's GDP in the year 2010 by 0.1–0.4 percent, gross national income could rise by up to 2 percent because of exports of carbon sink credits valued at NZ$100 per tonne.[13]

3.3 Modelling work by ABARE for the New Zealand Ministry of Agriculture and Forestry, *Economic Outcomes of the Kyoto Protocol for New Zealand*, November 2001, allows for the possibility that neither Australia nor the United States will ratify the Protocol. The seven scenarios reported in this analysis project much lower values for sink credits (at around US$20-30 dollars a tonne of CO_2 equivalent). These scenarios produce smaller declines in real GDP and increases in gross national product of between 0.05 and 0.52 percent at 2010.

3.4 These results contrast with work by the New Zealand Institute of Economic Research (NZIER). It estimates New Zealand's long-term trend rate of growth would be reduced by about 1 percent per annum to about 1.5 percent per annum. GDP would be 18 percent lower in 15 years' time compared with what it would otherwise have been.[14]

3.5 The NZIER estimates that under some scenarios the implicit rate of carbon tax needed to meet New Zealand's Kyoto commitments would be over $500 a

---

12 *The Independent*, *op cit*, 12 December 2001.

13 Consultation Document, p 17.

14 New Zealand Institute of Economic Research, *The Economic Effects of Greenhouse Gas Emission Policies: A Quantitative Evaluation*, November 2001, p xiv.

tonne. It would be economically absurd to impose such a cost when projections by ABARE and others are for global carbon charges to be much lower. Lomborg cites one result that points to an optimal charge of around US$7.50 a tonne.[15]

3.6 Both the ABARE and NZIER models suggest that ratification would result in significant declines in the outputs of emitting industries. These include cement, gas, coal, iron and steel, electricity, non-ferrous metals and meat and dairy production and processing. Transport costs would also rise with pervasive effects. The losses would be ongoing whereas receipts from the sale of emission rights in perpetuity would be ephemeral. It is difficult to comprehend why a government would want to put the competitiveness of so many activities at risk.

3.7 The minister's proposition that the no-ratification option would be bad for agriculture is baffling. ABARE's first scenario expects the international competitiveness of New Zealand's emission-intensive agriculture industries to be 'significantly reduced' if it is the only Annex I country to apply the carbon charge to methane and nitrous oxide emissions. This scenario records a 20.8 percent fall in dairy cattle outputs and a 6.8 percent decline in livestock production for meat.

3.8 This pattern is repeated in other scenarios. Forestry and crop production benefit, but they do so in conjunction with an overall fall in land values. The finding that land values fall is significant: it suggests that these scenarios must be negative overall for agriculture. The NZIER's report also models large declines in livestock farming in similar circumstances.

3.9 Moreover, a government report, *Climate Change Impacts on New Zealand* (the Impacts Report), published by the Ministry for the Environment in June 2001, did not suggest that the overall impact of 'inaction' on agriculture, the economy or the population would be negative. Positive factors for New Zealand identified in the report included increased growth rates (productivity) in agriculture and forestry from moderately higher average temperatures and CO_2 fertilisation effects. It acknowledged that many New Zealanders would

---

15 Lomborg, *op cit*, p 306.

welcome warmer summers and winters. Winter illnesses are a greater source of absenteeism from work and pressure on public hospitals than summer illnesses, and more people die from cold than from heat. Electricity bills for winter heating greatly outweigh summer spending on air conditioning. Reduced winter demand and any increased winter precipitation could avoid electricity price spikes.

3.10 The Impacts Report identified as negative factors the possibility of sea level rises, greater variability or frequency in floods or droughts, competition for water, changes in the incidence of pests and diseases and adverse effects on native ecosystems. The report did not attempt to make any overall assessment. It said that "the overall economic impact on the agriculture sector is difficult to quantify". It did not discuss the IPCC's view that warming of up to 2°C could be positive overall for many developed countries. The report stressed the uncertainty concerning rainfall patterns and the frequency of extreme events. However, this detriment is scientifically speculative whereas the benefits for plant growth from greater concentrations of atmospheric CO_2 are certain.

3.11 It should also be noted that land use and husbandry practices in agriculture are continually adjusting. Its seems unlikely that moderate climate change would pose particular problems for the sector, or for related issues such as water supply. Federated Farmers as a representative of the sector opposes ratification. There is a need for the government to explain more clearly the basis for its belief that ratification is necessary in the interests of primary production in New Zealand.

3.12 The government also appears to be taking a different view on forestry from that of representative industry organisations. The proposed distinctions between pre-1990 and post-1990 forests are arbitrary, inequitable and inefficient. Competitiveness with non-Annex 1 countries will be reduced as a result of higher energy, monitoring, harvesting and processing costs and the risks associated with trading emission permits. To sell permits prior to harvesting is to risk having to make a loss on buying them back later.

3.13 It also seems wrong to count receipts from the sale of emission credits as a contribution to current national income. They appear to be a capital account item. Suppose, for example, that credits from growing trees are sold as they accrue. If they are not repurchased when the trees mature, the cumulative

revenues essentially reflect the sale of the future use rights in the land in perpetuity. On the other hand, if the credits are bought back in order to allow plantation forestry to have a future in New Zealand, the overall contribution to the present value of national income is only the present value of any net holding period gain. If future prices are much higher than near-term prices because, for example, Kyoto turns out to be only the prelude to much more drastic measures, the net contribution to national wealth could be extremely negative.

3.14 The government may be seriously overestimating the contribution of permit sales to national income. Forestry sector interests appear to have concluded that the impact of Kyoto on the industry is likely to be negative and are opposed to ratification. More analysis of this issue is clearly required.

3.15 It is also important to be aware that GDP or national income does not measure welfare when relative prices are changing, as they would with the application of carbon taxes or equivalent measures. Forcing households and businesses to pay more for energy, transport and the outputs of emitting industries transfers rather than reduces national income. Some benefit from the transfer and some lose. All are induced, however, by the higher prices to give up a preferred choice for a less preferred choice for no discernible compensating benefit. For example, households may take holidays closer to home or give up leisure time in order to save energy or produce more income, but they sacrifice welfare in the process. In addition, as the minister has suggested, the higher prices will redirect investment and innovation. However, this is also a misdirection of scarce financial resources and talent. Since there are no discernible offsetting environmental benefits, welfare will be reduced even if national income rises and energy-saving innovations are found. Similarly, all the expenses on monitoring, enforcing, modifying, debating and disputing a permit system will add to national income, but not to welfare. Reductions in GDP could represent a serious understatement of the cost of the proposed policies.

4 Assessment of the government's position

4.1 In our view the government has not put forward a reasoned case for ratification. It is asking New Zealand industries and households to face significant economic costs without demonstrating why doing so would be in the country's interests. A competent regulatory impact statement that defines

the problem carefully and analyses the full range of options would assist public debate.

4.2 Our concerns about the absence of such an analysis are heightened by a number of demonstrably wrong claims that the government is making on the issue. An example is the minister of energy's statement that the economy would not be damaged because higher energy costs would be offset by a depreciation of the exchange rate. A lower exchange rate is simply one of the mechanisms for redistributing the burdens of those costs. It can be thought of as a real wage cut. Similarly, the minister has argued that New Zealand must achieve emission reductions and not just create carbon sinks to deal with the problem, whereas the effect of removing a tonne of carbon from the atmosphere via a sink is equivalent to an emission reduction of one tonne. We are concerned that the government may be receiving poor advice and is misunderstanding many of the economic implications of the issues. An annex to this submission responds to other problematical government claims.

4.3 If New Zealand were to take action to reduce emissions in advance of other major emitters (including major developing countries), it is likely that affected industries would contract in New Zealand and expand in other countries. New Zealand would suffer economic losses for no global environmental gain.

4.4 The government has suggested that its policies for energy efficiency represent cost-effective ways of reducing greenhouse gas emissions. This is highly unlikely. There is substantial evidence that such measures will add to economic costs rather than reduce them. For example, US economist Jerry Taylor has calculated that the cost of a tax credit designed to induce the purchase of more energy efficient heat pumps could amount to US$666 per ton of greenhouse gas emissions produced.[16] This would be vastly more expensive than the likely cost of carbon credits on the world market. In any case, gains in energy efficiency increase the demand for energy. Taylor notes energy efficiency 'improved' by 57 percent per unit of US GDP between 1949 and 1997, yet total energy consumption rose by 323 percent. Mandatory minimum energy performance and efficiency standards could well raise the demand for

---

16 Jerry Taylor, 'Energy Efficiency: No Silver Bullet for Global Warming', *Policy Analysis*, No 356, Cato Institute, 20 October 1999, p 8. It is obtainable at http://www/cato.org/pubs/pas/pa-356es.html.

energy. People may opt for even warmer homes in winter if fuel is effectively made cheaper.

4.5 Instead of pursuing interventionist strategies to reduce energy use and emissions, there are many steps the government could be taking which would have both economic and environmental benefits. It is extraordinary, for example, that when road projects promise $4 of benefits for $1 of costs the government is not vigorously addressing roading problems. These have been estimated to cost the Auckland region alone around $1 billion a year. The desirability of operating the roading system on a utility basis, including proper economic pricing for road use, has been recognised for nearly a decade. Obviously congestion wastes fuel and increases emissions.

4.6 There is also considerable scope to increase the efficiency of the electricity industry, in particular through privatisation – New Zealand is lagging behind most OECD countries in moving in this direction. Policies relating to the Resource Management Act and the Treaty of Waitangi claims process are holding back developments that could make more efficient use of resources, including energy. Water is often raised as a concern in the global warming context, but reforms to introduce more efficient market mechanisms for water supply and allocation have made little progress. Innovation is also important. The government funds and controls most of the scientific research in New Zealand and New Zealand lacks the close links between scientists and business that exist in the United States and other countries. These issues cry out for attention.

4.7 In short, there are a large number of opportunities for New Zealand to avoid damaging action and take steps that would have both economic and environmental benefits. It is disturbing that the government appears unwilling to contemplate most of them.

4.8 Similarly, there appear to be better options than the flawed Kyoto Protocol for dealing with a problem of global warming should it materialise on a serious scale. Lomborg summarises extensive modelling work by Nordhaus and others that explores different options. A key conclusion from this work is that large near-term abatement of emissions is not justified. The optimal policy appears

to require only a small reduction in emissions below uncontrolled rates until the middle of the current century at the earliest.[17] The optimal policy would produce an estimated net benefit to the world of about US$245 billion in present value terms compared with 'a business as usual' situation. In contrast, in the absence of trading the Protocol could impose a net cost of US$893 billion. This would be on top of the US$5 trillion cost.

5 Conclusions

5.1 We consider that the government should adopt a more measured and open-minded approach to the Kyoto issue. There is no need for precipitate decisions. Over the past 30 years there has been a pattern of environmental scares, including the threat of global cooling, turning out to be unfounded. There are many irrational features of the current debate – for example, many of those who are concerned about global warming are also concerned about the world running out of fossil fuels, scenarios which are mutually inconsistent. Even if warming occurs, the case for abatement strategies is far from established and analysis points to the advantages of deferred action. The inconsistencies in current modelling of the effects of Kyoto and mistaken official claims indicate that much more work and debate on the issues are required.

5.2 As regards the science, more time is necessary to improve understanding of climate change, distinguish trends from short-term fluctuations and improve forecasting models. This is part of the reason for the US decision not to ratify. New Zealand should continue to participate in climate research.

5.3 As regards international action and the need for New Zealand to be seen to be 'playing its part', it is as yet far from clear that costly economic measures will be adopted by other governments. Public reactions to such proposals that may alter some governments' current positions can be expected. The minister of energy has misleadingly attributed the US position to oil industry interests. This overlooks the fact that the US Senate voted 95-0 against ratification unless major non-Annex I countries were included and there was no economic detriment to the United States. It is hard to see the proposed emissions trading system, which could involve economic rights worth a trillion dollars being

---

17 Lomborg, *op cit*, p 318.

allocated between countries, proceeding smoothly or even at all. Ensuring compliance with obligations will be a formidable task. There is an air of unreality about many of the expectations surrounding the Protocol.

5.4 In respect of its international relations, New Zealand should not only be considering the attitudes of governments in Europe and Japan (which are favourably disposed towards ratification) but also its relations with the United States, Australia and others in Asia which are not. New Zealand would be in quite respectable company in taking a more cautious approach. Moreover, there is the possibility that instead of encouraging others to follow, early ratification by European and other countries will encourage others to hold back to maintain their competitive advantages.

5.5 We view with grave concern the possibility that the government may ratify partly in order to obtain for itself revenue from international trading in permits and partly in order to engage in uncompensated regulatory takings. The Negotiated Greenhouse Agreements process could undermine the rule of law by providing governments and bureaucracies with the means of extorting concessions from firms. There should be a principled approach to the issue of compensation for any regulatory takings. In principle, those whose private property rights are to be taken should be compensated by those who wish to see the transfer in rights take place.[18] Any failure to engage in such an analysis in an open and fair-minded manner is likely to be seen as predatory by those who stand to be affected. An unprincipled approach would undermine social

---

18 See Bryce Wilkinson, *Constraining Government Regulation*, New Zealand Business Roundtable, 2001.

cohesion and deter future investment. Grandparenting arrangements reduce the element of predation, but they are not necessarily the most efficient or equitable means of providing compensation. Much more work on these issues in necessary.

5.6 In this submission we have not focused on a number of detailed issues raised in the Consultation Paper. For example, we have not considered the relative merits of carbon taxes and quotas in curbing emissions – at a general level there is little difference between their effects. We would be totally opposed to any exemptions for particular industries if serious action were ultimately considered – emissions of CO_2 and methane, for example, should be treated on a comparable basis. It would be deplorable if the government or any particular sector were to adopt a special interest rather than a national interest perspective. However, we do not see matters of detail as important at this point. The focus of the consultation process should be on the high level issue of whether it is in New Zealand's interests to ratify the Protocol at this stage.

5.7 Our conclusion is that there is no good case for early ratification. This was also the view of the government's recent Tax Review which was asked to examine the issue. New Zealand's trend economic growth outlook is already inadequate. Action to curb greenhouse gas omissions would weaken it further, for no discernible environmental benefits (given both the minimal impact of Kyoto and the migration of industries). The government has set a goal of restoring New Zealand's relative income levels to the top half of the OECD rankings. It has also indicated its concern to pursue business-friendly policies and listen to business views. To be consistent with these stances, our submission is that the government should not take any action that would damage the competitive position of New Zealand industries. A decision by the government not to ratify the Kyoto Protocol in advance of the United States and other major emitters would be fully defensible and in New Zealand's best interests. We believe this view is widely shared in the business community.

Annex

COMMENTS ON GOVERNMENT STATEMENTS ON CLIMATE CHANGE

1. Consultative Document

(a) Minister's foreword

"*If left to run its course, climate change will have significant impacts on our economy, our environment and our society.*"

> *Response*: The climate always has significant impacts and will continue to do so, regardless of government actions. The issue is whether changes are beneficial or harmful, and whether the benefits of actions to curb harmful effects exceed the costs.

"*Scientific evidence now clearly signals the need for action*"

> *Response*: This cannot be true. Science cannot forecast future human activity. The case for action depends on economic costs and benefits. These depend on evaluations related to overall welfare, not science.

"*The world must take steps immediately if we are to reduce the impact of global warming.*"

> *Response:* This not for New Zealand on its own to determine. Currently Europe, Japan, the United States and other major emitting countries show no evidence of being willing to take costly steps to reduce predicted warming materially. Some countries may be able to claim conformity with the Protocol by cosmetic action or as a result of fortuitous economic circumstances. Almost all the major computer models agree that even when chaotic consequences have been taken into consideration, "it is striking that the optimal policy involves little emissions reduction below uncontrolled rates until the middle of the next [ie twenty-first] century at the earliest."[1]

"*There is no longer any excuse for inaction*".

---

1 Lomborg, *op cit*, p 318.

Response: No case has yet been made that the benefits to New Zealanders from the proposed actions would exceed the costs. There would be no discernible environmental benefits from the proposed actions and no case has been made for the existence of net benefits in terms of international relations.

"*There are many ways that we can reduce our emissions that will benefit our economy and society.*"

Response: This is true but ratification is unnecessary to achieve this objective. Alleviating road congestion is an obvious example.

"*… we cannot afford to ignore the hazards that have already been identified … that would be nothing short of negligence*".

Response: It is absurd to incur costs for negligible or zero benefits. None of the proposed measures will avoid the speculated hazards, yet they would be economically harmful.

(b) Executive Summary

"*Global warming is causing world-wide climate change including rising sea levels and a greater incidence of storms, droughts and floods.*"

Response: The contribution of greenhouse gases to the warming observed since 1970 is debatable in the light of contradictory high quality evidence from satellite and balloon data. Moreover, the IPCC has stated that there is no evidence that the rise in sea levels is accelerating as the global warming thesis would require, or of a greater incidence of extreme events.

"*If we do not take steps now, the consequences may be severe and long-term.*"

Response: On the other hand, the proposed steps will make no material difference and even if they did make a difference, the cure may be worse than the disease. This statement attempts to avoid the need for rational analysis.

"*However, global warming can be slowed and even stopped if enough countries combine to take action.*"

Response: This needs an analysis of what governments are actually likely to do. As yet this is far from clear – consider the change in the US position in the space of less than a year. What will Japan do if its economy faces an economic crisis?

(c) Introduction

"*If global warming continues unchecked, the negatives will come to outweigh the positives. There will be more frequent extreme weather events, erosion and saltwater intrusion from rising sea levels (potentially putting much of the most expensive real estate in our major cities and our climate-reliant industries at risk). There would also be biosecurity threats from the spread of sub-tropical pests and diseases, and increased cancer threat from a delay in the recovery of the ozone layer.*"

Response: This is mere advocacy. The assumed certainty is false. No listing of possible harms establishes that they outweigh likely benefits. In any case, the projected measures would not prevent any of the costs that are feared.

(d) Why does the government intend to ratify the Kyoto Protocol? (p 11)

Response: This section provides five bullet points of alleged detriments. The first acknowledges the possibility of one source of offsetting benefits but dismisses it by stating "the Government considers that the costs will greatly outweigh the benefits especially in the long run". This is assertion, not analysis.

"*If New Zealand did not participate in international action our international reputation would also suffer. We are a major supplier of food to world markets, many of them sophisticated and increasingly influenced by perceptions of environmental integrity. Avoiding the climate change issue would increasingly tarnish the image of New Zealand's products.*"

Response: It is hard to see why New Zealand's international reputation would suffer if the government chose to ratify only at the same time as all our trading partners. On the second issue, the government should heed the submissions of major primary industries.

2. Ministerial letter to Hugh Pavletich, 18 September 2001

"*Dr Lomborg also appears to be unaware of the IPCC's warnings that the climate system could exhibit sudden major changes as the warming progresses. An example is the shut-down of the thermohaline circulation (of which the Gulf Stream is a part), which would have major repercussions not only on the climate, but also on the livelihood of many nations.*"

Response: The minister is clearly unaware that Dr Lomborg discusses this issue in considerable detail on pages 316-317 of his book. Lomborg cites the IPCC and much research of a scientific and economic nature. The effect does not appear to

be currently occurring, some of the newest models challenge the findings of earlier models, and the effect, if it occurs, would be "truly costly", but "not catastrophic". Finally, Lomborg observes that there are many other remote threats to the world unrelated to global warming that provide contending projects if governments wish to spend more resources insuring imperfectly against speculative catastrophic risks. We are unaware of any official New Zealand discussion documents that give this topic such detailed consideration.

3. Ministerial press release 20 November 2001

"*The world's climate is changing, and will change more and more, because of greenhouse gas emissions caused by human activity. The scientific evidence for this is robust, despite uncertainties about the degree and pace of change.*"

Response: This is not what official reports say.

(1) "Firstly, scientific models of the climate system still have many uncertainties, and the warming predicted by a given amount of greenhouse gases differs between models … A second, equally large uncertainty arises from the question of what quantity of greenhouse gases will be emitted in the future … Hence, future emissions cannot be predicted using scientific research alone … "[2]

(2) "Because of the large and still uncertain level of natural variability inherent in the climate record and the uncertainties in the time histories of the various forcing agents (and particularly aerosols), a causal linkage between the build-up in greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established."[3]

"*Climate change sceptics are still around, and they include some good scientists, but they are more and more in the minority … But we are well past the point where scepticism can be raised as a substantial reason to delay action on global warming.*"

"*Although a few professional sceptics still parade their bravado, the evidence for climate change is now overwhelming. The latest assessment report from the hundreds of scientists that constitute the Intergovernmental Panel on Climate Change is more confident than ever that*

---

2 The Impacts Report, *op cit*, p 6.

greenhouse gas emissions from human activities have "contributed substantially to the observed warming over the last 50 years. As the science develops, the evidence is getting stronger, not weaker, and the sceptics are becoming increasingly isolated.""[4]

Response:

(1) Hundreds of eminent scientists object to the idea that greenhouse warming poses a serious threat. These include the former secretary-general of the World Meteorological Organisation, the past and present presidents of the American Association of State Climatologists, the Sloan Professor of Meteorology at MIT, and the former head of CSIRO Division of Atmospheric Research.[5]

(2) "The mid-range model estimate of human induced global warming by the … (IPCC) is based on the premise that the growth rate of climate forcing agents such as carbon dioxide will accelerate."[6] In fact, carbon dioxide has not accumulated in the atmosphere at an exponential rate for the last quarter-century, according to US scientist Patrick Michaels.

(3) NASA's John Hanson, whose 1988 testimony to the US Senate did much to trigger global alarm about greenhouse warming, recently concluded that the prospects that the impact would be modest instead of disastrous were "quite good". He also proposed that the policy emphasis be switched to focus more on the reduction of air pollution.

(4) "The increase of global fossil fuel CO_2 emissions in the past decade, averaging 0.6% per year, has fallen below the IPCC scenarios. The growth of atmospheric CH_4 has fallen well below the IPCC scenarios."[7]

4. Minister's article in *The Independent*, 12 December 2001

"*Some impacts of climate change on New Zealand can be predicted, not with certainty, but with reasonable and increasing confidence.*"

---

3 *Climate Change Science: An Analysis of Some Key Questions*, report to the Bush Administration from the National Research Council of the National Academy of Sciences, 2001, p17.

4 *Otago Daily Times*, 7 December 2001.

5 See pp 7-9 in the NZBR's April 1999 *Submission on the Ministry for the Environment's Climate Change: Domestic Policy Options Statement* for a fuller rebuttal of attempts to distract attention from real scientific uncertainties.

6 *Climate Change Science*, *op cit*, p 1.

7 *Ibid*, p19.

Response: This is not what reputable scientists and official documents say.

(1) "We simply do not know what relation, if any, exists between global climate changes and water vapour, clouds, storms, hurricanes, and other factors, including regional climate changes, which are generally much larger than global changes and not correlated with them."[8]

(2) "Global climate models differ in their resolution and ability to account for the presence of the New Zealand land-mass, and different model calculations and downscaling techniques lead to a range of results. As a consequence, quantitative projections about local and regional climate changes, in particular rainfall patterns and the rate of temperature increases, are less certain than global and hemispheric average projections."[9]

"*Floods and droughts are expected to become an even greater risk than they are already.*"

Response: "The intensity of wind and rainfall of tropical cyclones is expected to increase with global warming, but there is little agreement between current climate change models about whether the intensity or frequency of mid-latitude storms is likely to increase".[10]

Regardless of global warming, New Zealand's climate is likely to continue to fluctuate with El-Nino events. New Zealanders have to adjust their location and land use decisions to mitigate those costs in any case. "Complex climate change models are not yet able to fully simulate regional patterns such as the El-Nino event, and current projections show little change or a small increase in the amplitude for El-Nino events over the next 100 years. However, even with little or no change in New Zealand, global warming is likely to lead to greater extremes of drying and heavy rainfall similar to those that occur with El-Nino events in many regions."[11]

"*Sea-level rises could create further problems with saltwater intrusion into acquifers.*"

Response: This is not suggested by official reports.

---

8 Lindzen, *op cit*.

9 The Impacts Report, *op cit*, p 11.

10 The Impacts Report, *op cit*, p 13.

11 The Impacts Report, *op cit*, p 13.

(1) "A study of 25 years of data collected by the National Tidal Facility of Flinders University, South Australia, has failed to confirm the increase in the sea level predicted by climate models. The director, Dr Wolfgang Scherer, said last month: "There is no acceleration in the sea-level rise – none that we can discern at all"[12]

(2) "No significant acceleration of sea-level rise has yet been detected".[13]

(3) "A recent analysis for the port of Auckland indicates that the sea level has remained static for the past 25 years, but has risen markedly by about 5 to 7.5 cm during 1999-2000. These and other findings are part of growing evidence that sea levels around New Zealand in the short to medium term are dominated by interannual and interdecadel variations of climate patterns, such as El-Nino-Southern-Oscillation (ESNO), which varies on time scales of 2 to 5 years, and a longer-term (10 to 30 years) ocean-atmospheric variation known as the Interdecadal Pacific Oscillation (IPO) … Over time scales of a decade, however, marked jumps in sea levels caused by shifts in regional climate patterns are likely to be of greater importance that gradual sea-level rise under all but the worst-case scenario."[14]

(4) "Rising sea levels increase the risk of salt water intrusion into groundwater acquifers and tidal stretches of rivers … Under climate change scenarios considered in this report, increased pressure on groundwater from irrigation is expected in areas such as Hawke's Bay and parts of Canterbury, but changes to acquifer water supply would also depend on rainfall in the source regions".[15]

Obviously the pressure on groundwater supplies will also depend on pricing policies for the use of that water. Changes in land use patterns would appear to have a major potential impact on the demand for groundwater.

"*In the longer run the effects of climate change on agriculture are likely to be overwhelmingly negative. More extreme weather alone would ensure that.*"[16]

---

12 *NZ Herald*, 9-10 December 2001.

13 The Impacts Report, *op cit*, p 14.

14 The Impacts Report, *op cit*, p 15.

15 The Impacts Report, *op cit*, p 16.

16 The minister's press release of 20 November 2001 repeated this view.

Response: There is no basis for this assertion, as argued in the main body of this submission. Other relevant statements include:

(1) "The regional distribution of rainfall patterns is still relatively uncertain, however, and limits the reliability with which impacts on agricultural systems can be predicted."[17]

(2) "The agriculture sector has substantial opportunities for productivity gains and diversification under climate change, but also faces some serious long-term risks … The overall impact of climate change on the agriculture sector is difficult to quantify".[18]

(3) "The long-term impacts of climate change are still poorly understood."[19]

---

17 The Impacts Report, *op cit*, p 9.

18 The Impacts Report, *op cit*, p 23.

19 The Impacts Report, *op cit*, p 9.