New Zealand Business Roundtable

Submission on the Working Group on CO_2 Policy's Discussion Document

Climate Change and CO_2 Policy

---

31 October 1996

Summary

1 This submission on the Working Group on CO_2 Policy's June 1996 discussion document *Climate Change and CO_2 Policy* (the Document) is made by the New Zealand Business Roundtable (NZBR), an organisation of chief executives of major New Zealand business firms. The NZBR's purpose is to contribute to the development of sound public policies that reflect overall New Zealand interests.

2 The NZBR's longstanding views on this issue and the difficulties we see with the government's approach to date are summarised in section 2. Briefly, we do not see that the case has yet been made that New Zealanders would incur negative net benefits from projected global warming and, in the absence of effective action internationally, it could be much cheaper for New Zealand to adapt to projected climate change than to attempt to reduce its own net emissions. The Document tends to reinforce our concerns on both these points.

3 Nothing in this view would preclude New Zealand from playing its part in effective international action, but this would involve negotiations in which those countries that have most to gain trade with those which would need to be compensated for losses. New Zealand needs to have a clear view of where the interests of its residents lie when entering such negotiations.

4 We fully support the minister for the environment's objective, expressed in his covering letter to the Document, for New Zealand to have a well thought-out policy position which is understood domestically. However, we think that the government's policy goal of a fixed quantity target for 2000 and its willingness to impose a unilateral carbon charge by 1997 create major difficulties in respect of the minister's objective. A list of the problems which we see with the premises that appear to underlie current government policies is provided in paragraph 2.10 below. Sections 2, 3.1 and 4 comment further on the difficulties with the goal for net emissions by the year 2000.

5 Considering the key issues which the government identified in the Working Group's terms of reference, we agree with a national policy approach rather than a consent-specific Resource Management Act approach. We also agree in principle with a net emissions approach based on carbon sinks. We do not agree with quantity targets which are independent of the rate of economic growth and therefore insensitive to cost/benefit considerations. We do not agree that a carbon charge in 1997 is necessary, desirable or efficient, either from a welfare

Table of Contents

charge (and many Asian and other countries have made it clear that they have no intention of taking measures which would harm their economies), it is hard to see what that case might be.

11 In our view, the government faces considerable difficulties in providing a robust justification for any proposition that real economic costs should be incurred in the pursuit of its target for 2000. In particular, the imposition of a low-level carbon charge, whether through a tax, a permit system or a hybrid, lacks credibility as a soundly-based response to the problem.

1 Introduction

1.1 This submission on the Working Group on CO_2 Policy's June 1996 discussion document *Climate Change and CO_2 Policy* (the Document) is made by the New Zealand Business Roundtable (NZBR), an organisation of chief executives of major New Zealand business firms. The NZBR's purpose is to contribute to the development of sound public policies that reflect overall New Zealand interests. The NZBR's longstanding interest in New Zealand's CO_2 policy is summarised in section 2.

1.2 We applaud the minister for the environment's desire to have a well thought-out policy position which is understood domestically. It is also desirable that New Zealand is able to make a high quality contribution to debate at the international level. In this submission we concentrate on the progress being made towards the first of these objectives - a sound domestic policy. Comments on how New Zealand can contribute to the second objective are included in earlier NZBR material referred to in Section 2.

1.3 Section 2 also sets out the NZBR's overall views about what would constitute a sound public policy position. A key conclusion here is that policy should be driven by the need to relate costs to benefits rather than by the need to pursue essentially arbitrary short-term quantity targets which bear no obvious relationship to assessed benefits.

1.4 The following sections of the submission apply this perspective to the issues which the government placed in front of the Working Group. We broadly follow the format set for the Working Group in its terms of reference - government objectives, key issues, conclusions on its tasks and methodology.

1.5 Section 3 comments on the government's statement of policy objectives and the key issues laid out for the Working Group.

1.6 Section 4 responds to the Working Group's conclusions as summarised on page 9 of the Document. The terms of reference also specified the Working Group's main tasks and provided some guidelines on the methodology the Working Group was to employ. Some comments of a more technical nature on the methodology are provided in section 5. Section 6 presents our concluding comments.

2 Background: The NZBR's Approach to Global Warming Issues

2.1 In this section we summarise the NZBR's contributions and views on the public policy issues raised by the threat of global warming.

2.2 In May 1991 we made a submission on the Ministry for the Environment's discussion paper *Developing a Strategy to Reduce CO_2 Emissions: A Scoping Paper.* In this submission we argued *inter alia* that:

- there was "insufficient evidence to determine whether New Zealand would on average gain or lose from the greenhouse effect";
- any warming would be so gradual that adaptation can occur over time;
- unilateral action by New Zealand would be pointless;
- in international forums, New Zealand can already point to significant policy actions which are compatible with the mitigation of greenhouse effects; and
- New Zealand should suspend its commitment to a reduction in CO_2 emissions pending clearer scientific evidence; greater evidence of concerted and concrete international action; and a proper cost-benefit analysis of the likely effects of New Zealand action.

2.3 Our views on these issues have not changed. The fact that New Zealand has subsequently ratified the Framework Convention for Climate Change (the FCCC) no doubt increases the political costs of adopting our suggested approach but, as events in Australia are revealing, international commitments made in advance of any clear acceptance by the community of the case for bearing the subsequent costs do not avoid the need to demonstrate that such costs are warranted.

2.4 In April 1994 we made a submission to the Ministry for the Environment on its consultation document *Exploring the Options for Reducing Net Emissions of Carbon Dioxide.* This submission made similar points, while supporting a 'no regrets' net emissions approach domestically. The submission identified a range of policies which should be explored under a 'no-regrets' approach.

2.5 On 13 May 1996 we responded to a request from the Ministry of Foreign Affairs and Trade for views on the focus for New Zealand's efforts at the July Ad Hoc Group on the Berlin Mandate (AGBM) meeting. We supported the thrust for price equalisation rather than country quantity targets and again stressed the need for policies to be focused on relating benefits to costs and the importance of distinguishing between measures designed to address political objectives in international forums and measures designed to address a potential underlying economic/environmental problem.

2.6 Considerable uncertainties exist about the likely climatic effects of the build-up in greenhouse gases in the upper atmosphere, although there is a well-accepted basis for

expecting some warming to occur. Some experts have expressed disquiet about the process being used to generate summary statements of the scientific consensus for policy makers by the IPCC. Material changes have been made to the models used to predict climatic effects since the first IPCC predictions, with the result that earlier forecasts of the extent of warming have been scaled back and the timetable pushed out. It would seem prudent to anticipate further substantial revisions in the years ahead as new information emerges. Given the complexity of the factors affecting the global climate, the inevitable over-simplification of formal models and the lack of prolonged experience with forecasting human-induced climate change, we are sceptical of the claim apparently endorsed on page 25 of the Document that the models provide a reliable indication of the scale of climate change for the next 50 years.

2.7 In 1995 and 1996 we also sought to promote public awareness of the nature of the criticisms of the 'consensus view' from leading scientists by bringing to New Zealand two critics whose expertise in this area is beyond dispute.

The following summarises our current views on the public policy issues:

(a) the government's greenhouse gas policies should aim to maximise the welfare of current and future New Zealand citizens[1];

(b) the projected global climate change to 2100 could have beneficial as well as harmful effects on the welfare of New Zealand citizens, and no convincing case has been made that the overall net effect would be negative[2];

(c) the projected climate change is highly uncertain, but is likely to be so gradual that adaptation over time is feasible;

(d) in any case, unilateral action by New Zealand to reduce net emissions would impose real resource costs, but not affect climate change projections[3];

(e) there is little evidence to indicate that Annex I or Annex II countries are willing to implement costly measures in order to reduce their net emissions[4];

---

1 This will take into account their desire to help others, such as residents of 'low-lying' Pacific Island countries.

2 The Document itself concludes, on page 26, that it is not yet known if the net effects of climate change on New Zealand would be positive or negative.

3 The Working Group also appears to support this approach. For example, on page 83 the Document makes it clear that the timing of the use of any economic instrument should be related to the timing of moves by other countries to increase the price of carbon on a comparable basis.

4 For example, page 67 of the Document comments that "There is no immediate prospect of developing countries taking on commitments to significantly limit emissions". Although the document finds that broad-based economic instruments are likely to be most efficient in reducing CO_2 growth, the discussion

(f) carbon taxes, tradeable permits and/or mandatory energy efficiency standards would impose real costs on New Zealanders with no discernible climate change benefits;

(g) price equalisation measures, if politically achievable, are likely to be much more efficient in reducing global net emissions than country quantity targets;

(h) if and when countries which see themselves as losers from projected climate change enter international negotiations in order to induce other countries to take corrective action when it may not be in the interests of their citizens to do so, the New Zealand government should be prepared to negotiate in the best interests of New Zealand citizens;

(i) the objective of being seen to 'play our part' in the international community should be analysed in cost/benefit terms based on an explicit assessment of the likely international repercussions from the adoption of alternative approaches.[5] It seems unlikely that the pursuit of this objective would warrant the imposition of a carbon charge in 1997; and

(j) New Zealand should continue to research this issue and develop its options. From an environmental perspective it should focus on net emissions of all greenhouse gases - including methane which seems to have been excluded from policy considerations to date largely for political reasons (a desire not to antagonise farmers). Australia and the United States have a zero target for net emissions of all greenhouse gases.[6]

2.8 Common ground between these views and government policy includes support for further research, the adoption of a net emissions approach, and the promotion of a price-equalisation strategy across countries. Until the government's July 1994 measures were announced, the NZBR believed that the government was fully aware of the pointlessness of taking measures which simply saw industries or firms migrate to other countries for no environmental benefits. The decision in respect of a carbon tax in 1997 appears to indicate, however, a determination that New Zealand should act unilaterally.

---

on pages 31-32 provides no indication of any expectation that Annex I countries are likely to adopt tradeable permits or new carbon taxes. It notes that five countries already have carbon taxes in place (forty-one countries are listed as Annex I countries on page 142 of the document), but does not indicate that any of these are moving to strengthen these taxes, for example by removing industry exemptions.

5 Help for low-lying Pacific Island nations may be best met, for example, by commitments to open immigration policies, should the need arise.

6 Refer to table 2.4a, page 31 in the document. Australia also has a -20% target for 1988-2005.

2.9 As explained in the foreword to the Document, the government's aim in instructing the Working Group to review how New Zealand can best meet its twin objectives was to see that the developing climate change debate is addressed responsibly. The Foreword comments that:

> For too long, ill-informed and polarised views have dominated public debate on this important issue. A better-informed debate is essential if we are to tackle the issue rationally; and
>
> It is vital that New Zealand has a well thought-out policy which is understood domestically and is able to make a high quality contribution to debate in international fora.

2.10 The NZBR's contributions to date have been directed at the objective of better-informed debate based on well-thought out and widely understood policies. In our view, this is not a debate between industry and environmental interests; rather it is a debate about what policies would maximise the welfare of New Zealand citizens. We agree that there is a need for better analysis and debate. For example, in our view the government has so far failed to convince the commercial community that it has a sound rationale for the following propositions which appear to underlie its policies:

(a) that the costs to New Zealand from projected climate change exceed the benefits;

(b) that any real economic costs imposed on New Zealanders by attempting to reduce net greenhouse gas emissions will produce benefits in terms of reduced global warming which are commensurate with the costs;

(c) that the benefits to New Zealand from the government's decision to ratify the FCCC in 1993 are other than political;

(d) that the benefits to New Zealand from the government's decision to enter into commitments under the FCCC exceed the costs;

(e) that third world countries draw no benefit from the developed world's enormous investments in the last two hundred years in technology and knowledge so that all the costs of reducing atmospheric greenhouse gases should, as a matter of equity, fall on Annex I countries;

(f) that any such inter-country equity issues are better dealt with by inefficient policies which encourage the growth of emitting activities in Annex II countries rather than by more efficient policies which avoid this effect, supplemented by direct wealth transfers if necessary;

(g) that there is any justification for New Zealand's decisions to move away from a 'no-

regrets' policy to the point where the government has committed itself to introducing a low level carbon charge in December 1997, regardless of the actions of other countries and regardless of the fact that such action would have no material impact on global climate change;

(h) that it is better for New Zealand to devote resources to prevention rather than adjustment;

(j) that it is efficient for New Zealand to focus initially on CO_2-reducing measures rather than on greenhouse gas-reducing measures generally; and

(j) that stabilising net emissions by 2000 is desirable or achievable.

The following paragraphs elaborate on some of these propositions.

2.11 Paragraph 2.1.6 of the Document comments on the predicted effects of projected global warming on New Zealand. From a consumer welfare perspective, the comments are preliminary, incomplete and arguably one-sided in places. For example, the reference on page 26 to possible effects on human health solely speculates about malaria. No doubt it is fair to suggest that higher temperatures would increase the incidence of heat-related illnesses and human discomfort. But would not an even-handed approach balance this against the possibility of a reduction in the incidence of cold-related diseases and human discomfort? Winter flu and deaths from hypothermia undoubtedly reduce well-being in New Zealand at present, yet the effect of a warmer climate on winter flu and on reduced human discomfort from cold is given no consideration in the Document. In contrast, malaria is not a problem in this country. Further, using the rule of thumb provided in section 2.1.6 of the Document, projected global warming of 2^0C for the next hundred years would be equivalent in temperature terms to moving New Zealand 200-400 kilometres closer to the equator. Auckland is 350 kilometres south of Kaitaia. Kaitaia has no malaria problem. What could therefore warrant focusing the reader's attention on the possible effects of global warming on the incidence of malaria in New Zealand?

2.12 Another illustration of incomplete discussion from a consumer welfare perspective is the absence of any acknowledgment that warmer average temperatures in New Zealand should reduce the annual heating bill, since New Zealanders currently spend much more on fuel for winter heating than on fuel for summer air conditioning. Building costs might also be reduced. Nor is there any consideration of the possibility that the productivity of some land might be improved by a warmer average climate. The only possible effects on the productivity of land and horticulture which were mentioned were all negative.

2.13 Some of the discussion in this section relates to the costs of adapting to climate change.

But the pace of climate change is surely very slow relative to the rate of change in productive land use which arises from conventional economic forces. Consider, for example, the marked switches in land use in past decades between deer, dairy, sheep and beef farming, livestock and forestry, and grapes, kiwifruit and other crops.

2.14 Even so, the Document drew the following conclusion from this limited and one-sided discussion:

> It is not yet known whether the net effects of climate change will be positive or negative for New Zealand. However, the transitional costs of adjusting to variations in current climate conditions are likely to be significant.

The comment on transitional costs is unconvincing for the reasons just noted. Putting this point to one side, we believe New Zealand would do better to focus its efforts on considering measures likely to reduce adjustment costs rather than impose real costs on itself in the hope of influencing the international community to take corrective action (refer to point 2.10 (h) above).

2.15 More fundamentally, the admission that the net effects of climate change are not necessarily negative for New Zealand illustrates the difficulties that politicians would face in explaining why current voters must incur higher heating and transport bills because of global warming projections. To the argument that these policies are to prevent their great-great-grandchildren from experiencing marginally warmer average temperatures, today's voters may reasonably respond that (a) New Zealand's actions cannot possibly affect global warming so the claim is spurious; (b) their descendants are likely to live in cities and to prefer moderately warmer temperatures; and (c) future technologies are likely to be so much superior to current technologies that wasteful emissions will be much reduced, along with the costs of adapting to any climate changes.

2.16 To the argument that these costs need to be imposed because other countries may be adversely affected, they might reply in a similar vein in respect of point (a) in 2.15 above; ask why many other countries are not imposing carbon charges; suggest that those countries which want us to change for their benefit should pay for our adjustments; and suggest that offering immigration rights to refugees from low-lying Pacific Island nations should the need arise might be a much more practical and efficacious form of assistance.

2.17 We make these points because we have been critical of recent ministerial statements which present the debate about CO_2 policy as one in which government policy stands on the middle ground between extreme and unhelpful 'environmental' and 'industry' views. Such a comment, in our view, only serves to distract attention from the real policy issue - the degree to which government policy is consistent with welfare maximisation.

2.18 Regrettably, current policy appears to be driven by an inevitably-politicised international process which sees unsoundly-based commitments being made by parties which have very little idea of their potential costs, limited ability to muster the political will to impose significant costs on their home communities, and minimal interest in the effects of their actions on the welfare of New Zealanders.[7]

2.19 New Zealand advisers and decision makers initially thought that the goal for the year 2000 could be met by New Zealand without cost. Revisions to base year estimates and stronger than expected economic growth have demonstrated the risks involved in making commitments which lack a sound fundamental basis.

2.20 Now that the government is approaching the point at which it is contemplating making all New Zealanders pay more for heating fuel, electricity and transport, and is putting in place policies which are likely to promote changes in land use and the migration to other countries of some emitting activities, it must explain to New Zealanders why such policies are in their interests. In our view, presenting this as an industry-versus-environmental issue does nothing to clarify it or advance the public policy debate.

3 The Government's Policy Objectives and Key Issues

3.1 Policy Objectives

3.1.1 The government's key policy objectives, as conveyed to the Working Group in its terms of reference, are to:

- stabilise net CO_2 emissions at 1990 levels by 2000; and
- minimise the impact and risks of CO_2 policy measures on output and growth in the economy.

Further, its key economic policy objective is to maintain and enhance economic growth.

3.1.2 The discussion in section 2 raised some of the difficulties of explaining how an arbitrary quantity target for 2000 might be consistent with welfare maximisation.

---

7 Consider for example, the following ascerbic comment from *The Economist*, 19 March 1994:

> " ... [s]ome see all this [the FCCC] as inspiring proof of a new commitment to saving the environment. In fact, it merely shows how easy it is for politicians to sign bits of paper - so long as they will be safely in retirement when the time comes to take action. ... When the industrial countries start to consider seriously ways to reduce their output of greenhouse gases, they will ask some awkward questions. They will want clearer scientific evidence that the accumulation of greenhouse gases really changes the climate and, if so, whether the change carries appreciable economic costs."

3.1.3 As the Document notes in sections 6.13 and 7.2, the costs to New Zealand of pursuing these objectives is likely to depend on the extent to which other countries act in unison with New Zealand. If they do not, New Zealand may be able to meet its quantity target at relatively low cost provided emitting industries can readily migrate to other countries.

3.1.4 In a situation where the recipient country is not imposing a similar impost on emissions, the migration of activities may not be associated with any reduction in global emissions. This would not be a problem if the government's statement of its objectives (see paragraph 3.1.1) is complete. However, the Document also considers the possibility that the government would rather achieve its objectives with a greater rather than a smaller impact on global net emissions. This supplementary objective might make it optimal for New Zealand to set a lower quantity target the lower the effective rate of tax on emissions in countries to which emitting activities might migrate. Alternatively, it might make it optimal to tax at a lower rate activities which are most likely to migrate to countries with lower effective rates of tax, with no benefit in terms of global emissions. The implications of such alternative objectives for the optimality of a broad-based impost on carbon emissions are discussed in section 5.1 below.

3.1.5 A further difficulty with the government's stated objective is that it does not look achievable under current projections, even if a low-level carbon charge is introduced in 1997. This issue is discussed in greater detail at the end of section 4. Indeed, if a low-level charge in conjunction with an MMP parliament creates a risk in people's minds that the charge could be markedly increased in the future, there would be an incentive to increase current consumption of fossil fuels relative to future consumption because they will never be cheaper.[8]

3.1.6 However, in our view the biggest difficulty caused by the government's statement of objectives is that the arbitrary quantity objective distracts attention from the need to relate costs to benefits. This colours the analysis in the Document which favours a cost minimisation approach regardless of benefits.

3.2 *Key Issues*

3.2.1 The terms of reference for the Working Group also include three key issues to be considered by the government:

- the choice between a national policy and a consent-specific approach;

---

8 This possibility is belatedly acknowledged in the Document in section 7.4.2. Of course the overall rate of depletion of fossil fuels should fall even if future consumption (including exports) were tilted towards the present.

- how best to address forestry issues and the sensitivity of the net approach to GDP projections; and

- the efficiency of a possible carbon change.

3.2.2 On the first issue, we agree that a national approach is preferable to a consent-specific approach. The economic analysis leading to the Stratford combined cycle decision was woefully inadequate. It is undesirable to tax relatively efficient activities but not relatively inefficient ones.

3.2.3 To the degree that the policy objective is to reduce net emissions for environmental reasons (rather than to ensure New Zealand is seen to be 'playing a part' internationally), we agree that policy should, in principle, focus on net emissions. Therefore absorption through forestry is relevant. The practicality of a net approach is a proper matter for debate. The sensitivity of current policy to GDP growth projections simply serves to highlight the inadequacy of a policy objective which fails to relate marginal benefits to marginal costs.

3.2.4 On the third issue, it appears that the government's year 2000 objective is unachievable on current projections with any practicable carbon charge. It would also be inefficient from a consumer welfare perspective since it would impose economic costs for no or inconsequential environmental benefits. The issue of whether it would produce greater net benefits in terms of international relations than alternative approaches was not part of the Working Group's terms of reference and no such case has been made. The fundamental problem here lies with the government's policy objective.

4 Comments on the Working Group's Conclusions

4.1 In respect of the Working Group's 11 numbered conclusions on page 9 of the Document, we agree with numbers 1, 2, 3 and 8 and broadly agree with numbers 5 and 6.

4.2 However, in respect of conclusion 3 we draw no inference that, because economic instruments have a potentially powerful influence on the path of net emissions, the government would therefore be justified in using them to move further towards its existing policy targets.

4.3 While we generally support the case for broad-based, low-level taxes, the Document does not discuss as carefully as it might the optimality of non-uniform taxes when activities differ in the ease with which they can migrate across national borders and when effective rates of tax vary markedly across countries. In section 5.1 below we consider the case for differential rates of tax in such a situation.

4.4 While supporting the cross-country price-equalisation approach in conclusion 5, we do not agree that New Zealand should accept, in principle, any case in terms of efficiency or equity for excluding Annex II countries from this approach. Equity issues are of course relevant to negotiations over the terms under which countries agree to participate.

4.5 In respect of conclusions 7, 9, and 10, we do not agree that there is an adequate case for the government endorsing, for the foreseeable future, either a carbon tax at any level or a transferable carbon charge scheme. Our disagreement here is not so much with the Working Group's analysis (although we see the need for more discussion of the 'playing our role' issue) as with the government's policy objectives which the Working Group had to take as given in its terms of reference (see sections 2 and 3.1). We welcome the recognition in conclusion 9 that any decision made by year 2000 on the settings and timing of instruments should be conditional on measures taken by other countries.

4.6 We agree with conclusion 11 that a nationally legislated economic instrument would remove the need for CO_2 consents under the RMA, but do not see this as a necessary or desirable means of achieving this worthwhile objective.

4.7 One of the Working Group's key tasks, according to its terms of reference, was to assess the costs and benefits of alternative economic instruments and other measures for achieving the government's CO_2 policy objectives. The Working Group's conclusions do not contain an explicit answer to this question. Table 7.3.2a presents some results, one of which is that a $100 per tonne carbon charge would, in the model used, stabilise net emissions at 1990 levels by 2000. This charge would need to rise to $250 per tonne by 2010.

4.8 The discussion in section 7.3.3 about the costs of such a policy suggests that it would reduce the growth rate of real GDP by 0.08 percent per annum initially, rising to 0.67 percent per annum by 2010-2020. While this calculation is relevant to the question asked of the Working Group about the effects of policies on New Zealand's growth rate (if this is interpreted as the growth in real GDP), it is not a calculation which is clearly related to economic cost considerations (see section 5.4 for some discussion of economic cost concepts). Further, national income is a better measure of income accruing to New Zealanders than GDP, but all such measures have serious limitations as indicators of the costs to the community of reallocating resources in response to a change in relative prices.

4.9 The key point here in respect of the government's current policy objectives is that the calculations suggest that a low level carbon charge would not suffice to bring net emissions in 2000 down to 1990 levels. In a recent publication[9] the Tasman Institute has

---

9 Tasman Institute Occasional Paper B32, February 1996, *Tax or Credit? - NZ Policy on Carbon Dioxide*

summarised its own view of such modelling work as follows:

> But the real sting is that we do not know what the substitution possibilities actually are. So we do not know what level of carbon tax is really required to achieve a particular target. We do know that playing around with taxation levels to achieve the appropriate effect would be enormously costly. We can, however, be confident that a low carbon tax would have little effect. So little that it can only be viewed as a gesture. A potentially expensive gesture, that puts a question mark over New Zealand's reputation (since the mid-1980s) for getting it right in tough policy areas such as tax, labour markets, SOEs and (it was thought) environment, despite the good sense of the approach of concentrating on carbon absorption (*op. cit.*, page 4).

5 Comments on Methodology

5.1 Price Equalisation and the Least-Cost Approach

5.1.1 A central proposition in the Document is that a broad-based carbon charge offers the least-cost means of achieving a quantity target for net emissions.[10] The Document comes to this conclusion in section 7.2 regardless of whether New Zealand acts alone or in concert with other nations and regardless of whether the government's policy objective is directed at reducing net emissions from New Zealand alone or global net emissions (see section 3.1 above).

5.1.2 While the NZBR is a longstanding supporter of broad-based, low rate taxes, it does not follow that the proposition in 5.1.1 above can be assumed to apply to every set of circumstances. For example, in the debate about how to best interface New Zealand's tax arrangements with the international tax regime, much of the Treasury's analytical work is devoted to considering the case for differential tax rates depending on the investor's country of residence or the country of origin of the investment income.

5.1.3 The discussion in section 7.2 of the Document does not address the question of the optimal policy for New Zealand if effective rates of tax on carbon emissions vary widely across countries and if the New Zealand government does not wish to achieve its CO_2 targets by policies which see significant emitting activities migrate to low tax jurisdictions for minimal benefits in terms of reduced global emissions. The only point we wish to make here is that it is possible in this situation that it would be preferable to tax less heavily those domestic activities which would otherwise migrate to low tax countries.

5.1.4 We make no claim that such a non-uniform rate of impost is likely to be optimal. It is more likely to be optimal the greater the dispersion between New Zealand's effective

---

Emissions.

10 See, for example, section 6.2.

tax on emissions and those in countries which would be logical candidates to process upstream materials exported from New Zealand, and the more accurately information about migration probabilities can be obtained at a centralised level. These are empirical issues which should be examined explicitly.

5.1.5 Perhaps the case for a uniform rate is strongest when it is set at such a low rate that it is expected to have no material impact. But such a policy would not be credible in terms of the government's stated objectives, as illustrated by the material at the end of section 4. If its ostensible purpose is to boost New Zealand's credibility in international forums, it should be evaluated in terms of the impact on that objective, compared to the costs and benefits of alternative approaches. On the other hand, it might cause industries to relocate anyway at the margin if the initial rate of charge is seen by firms as a Trojan horse so that the imposition of a low initial charge creates the expectation of much higher future charges.

5.2 *Permits versus Taxes*

5.2.1 The issue of the choice between permits and taxes requires much more investigation. Much depends on the detail since the two approaches are equivalent in the abstract. We restrict ourselves here to some observations on points made in the Document.

5.2.2 Section 6.8.6 discusses the issue of the allocation of certificates under a permit system. On page 96 the Document concludes that certificates should be allocated competitively in order to minimise overall economic costs. Some of the Document's efficiency arguments against alternative arrangements (such as grandparenting) are cogent. Others are equity arguments rather than efficiency arguments. One of these appears to be based on the unfounded proposition that something which is likely to increase government revenue must be positive in terms of consumer welfare. The unquestioned presumption is that deadweight losses can be ignored and future governments will use that revenue to add to national welfare.

5.2.3 This bias aside, our major concern is that the Document's case is incomplete in that it does not note a potentially important argument against tendering. This is that auctioning can impair dynamic efficiency by inhibiting future investment in sunk cost activities. Take, for example, the decision to invest in a pulp mill. Much of this investment is a sunk cost. If, after an investment is made, a government introduces permits which the incumbent operator must bid for in order to continue in business, the operator will be prepared to bid a price for that permit which transfers to the government all the sunk value of the investment. This appropriation of wealth, if seen to be opportunistic, would make all future investors more cautious about investing in sunk cost assets in New Zealand.

5.2.4 For this reason it may be more difficult, in practice, for a government to avoid grandparenting arrangements than the Document envisages.

5.2.5 Nor does a carbon charge approach necessarily avoid this problem (refer to the discussion in the Document on page 91). A carbon charge set at a level equivalent to the price at which permits would have been allocated by auction is likely to have just as large and harmful an effect in expropriating from investors the value of sunk cost investments.

5.2.6 The vigorous debate in the fishing industry over the allocation of permits for new species and the setting of a resource rental tax illustrate the practical importance of this sunk cost issue. The Document notes the difficulties experienced in fishing on page 99 but simply assumes that no efficiency issues were at stake.

5.3 Road Pricing Issues

5.3.1 Commenting on the Land Transport Pricing Study was outside the Working Group's terms of reference. However, on page 76 the Document does anticipate that this study might lead to recommendations which would significantly reduce emissions from road transport.

5.3.2 We see three reasons why policy makers should hesitate to make this presumption. First, the Document inconsistently presumes that road prices should be based on recovery of historic costs rather than future costs, while making exactly the opposite presumption in respect of rail. In fact, revenue from road users is more than recovering current outgoings including capital expenditures.

5.3.3 Second, much revenue from road users is currently being derived from the petrol excise tax. This will be reducing fuel usage relative to levels which would be optimal on the basis of the opportunity cost of fuel to the nation. When direct billing technologies are introduced, motorists will not be slow to point to the (efficiency) case for reducing or eliminating fuel excise. The net effect could be increased fuel consumption.

5.3.4 Third, most of the road network is underutilised all of the time. The case for raising use-related charges on all users of all parts of the network because a small part of the system is congested at rush hours has yet to be made, and would be unlikely to withstand scrutiny.

5.4 Economic Costs

5.4.1 Figure 7.3 on page 110 of the Document purports to show the economic costs of reducing CO_2 emissions. Instead it shows the deadweight losses which arise when some factor

prevents socially profitable transactions (i.e. those in which the marginal social benefit exceeds the marginal social cost) from occurring.

5.4.2 The Document's interpretation of Figure 7.3 is surely controversial. If a carbon charge were correcting an environmental externality, the figure would actually show the (partial equilibrium) *benefit* from a carbon charge in the form of reduced deadweight losses. The same type of diagram might also be used to illustrate the possible additional benefit from using the proceeds of any such corrective tax to reduce distorting taxes.

5.4.3 Any economic costs arising from the imposition of a corrective tax would not be shown in the figure. They would arise from the costs of reallocating resources in the economy in response to the corrective tax, the costs of complying with, administering and enforcing the tax, and the costs of any wasteful government expenditures which result from the increased government revenues.

5.4.4 Contrary to its title, therefore, the figure mis-labels a benefit from a corrective carbon charge as a loss and fails to identify any of the economic losses which are relevant to a cost-benefit comparison.

5.4.5 On the other hand, the carbon charge would be unproductive if it had no social benefits (e.g. because it had no effect on global climate change or because individuals derived no benefit from any effects on global climate change). In this case the charge would prevent welfare-enhancing transactions and the figure could be used to demonstrate the static deadweight losses of such a situation. However, the figure would not show the other likely costs mentioned above. Nor would it show the likely adverse effects on future investment decisions of uncertainty about the future levels of such a charge.

5.4.6 The potential importance of dynamic costs was raised in Figure 7.4.1 in the Document. This figure makes the point that if expectations are ignored, a policy of stabilising net emissions in a growing economy would require that the carbon charge increase with time in order to choke off the tendency for emissions to increase with output. Obviously expectations that a carbon charge will increase through time provide an incentive to deplete fossil fuels sooner rather than later and should be taken into account.

5.4.7 In the light of these concerns, it is hard to avoid the conclusion that the Document does not adequately meet the requirement in the Working Group's terms of reference that it provide:

> ... a rigorous analysis of the costs and benefits of each option (including environmental risks, costs and benefits).

6 Concluding Comment

6.1 Our fundamental concerns with the contribution of the Document to the minister's laudable goal of a well thought-out policy position which is understood domestically relate to matters outside the control of the Working Group. These are the unclear relationship between the government's targets for 2000 and welfare maximisation; the rationale for the government's position on a unilateral carbon charge in 1997; and the fact that the target for 2000 is unlikely to be achievable under current projections with only a low-level carbon charge.

6.2 The analysis in the Document appears to support the inference that no convincing case has been made that projected global warming to 2100 would produce negative net benefits for New Zealand residents, that preventive measures have net benefits relative to adaptation, and that other Annex I countries are taking effective measures for the explicit purpose of materially reducing net emissions.

6.3 In our view, the government faces considerable difficulties in persuading the community that it is desirable to incur real economic costs in the quixotic pursuit of its target for 2000. In particular, the imposition of a low-level carbon charge - whether through a tax, a permit system or a hybrid - lacks credibility in our view as a response to the perceived problem.

6.4 In the absence of any solid case that projected global warming would have an adverse effect on New Zealand citizens, the government's real problem may be to determine how to be seen to be 'playing its part' in international forums at least cost in terms of domestic welfare. If so, the problem should be explicitly analysed in these terms. Other countries such as Australia and the United States are not contemplating unilateral action in the form of a carbon charge. It is surely not necessary, therefore, for New Zealand to take a different path. Where, then, is the political economy analysis which shows that it is desirable for New Zealand to do so?