



Economic modelling of New Zealand climate change policy, by NZIER and Infometrics

Date:	22 May 2009	MfE Priority:	Urgent
Security Level:		Number of Attachments:	1
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Action Sought

	Action Sought	Deadline
Minister of Finance Hon Bill English	Note	None
Minister for Climate Change Issues Hon Dr Nick Smith	Sign the attached letter and forward report to the ETS Review Special Select Committee. Sign the attached letters to Hon Rodney Hide and Hon Jeanette Fitzsimmons	None
Minister of Forestry Hon David Carter	Note	None
Associate Minister for Climate Change Issues (International Negotiations) Hon Tim Groser	Note	None

Ministry for the Environment Contacts

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Executive Summary

This briefing note provides you with a copy of the final report *Economic modelling of New Zealand climate change policy* completed jointly by NZIER and Infometrics. The report addresses the terms reference for the ETS Special Select Committee to assess the least cost option for meeting New Zealand's Kyoto liability.

The report finds that the introduction of a carbon price is warranted, and in the long term a broad-based carbon pricing scheme is least cost if the rest of the world takes action to price carbon and if technological change is induced by the carbon price.

The modelling results show only small differences in welfare costs between most of the scenarios, and the results are sensitive to the underlying assumptions, particularly those concerning rest of the world participation and technological change. It will be a high profile report, and this briefing note draws to your attention several issues that may arise.

Recommended Action

We recommend that you:

- (a) **Sign** the attached letter and forward the attached report to the ETS **Yes / No** Review Special Select Committee.
- (b) **Sign** the attached letters to Hon Rodney Hide and Hon Jeanette Fitzsimmons

Stuart Calman
Acting General Manager
Emissions Trading Group

Hon Dr Nick Smith
Minister for the Environment
Minister for Climate Change Issues

Purpose of Report

1. The purpose of this briefing note is to provide you with a copy of the final report *Economic modelling of New Zealand climate change policy* completed jointly by NZIER and Infometrics.

Background:

2. This report addresses the terms of reference for the ETS Special Select Committee (Attachment A) for a fully quantified economic cost-benefit analysis that identifies the net costs and benefits of:
 - The least cost option for meeting any Kyoto liability;
 - The proposed Emissions Trading Scheme; and
 - A revenue neutral tax on carbon, coupled with an equivalent subsidy for carbon sinks, or a tax on energy.
3. This study is an economic analysis designed to fulfil the terms of reference and deliberately does not look at wider issues such as whether New Zealand should be part of international climate change agreements.
4. The modelling results show that in the short term, the least cost way of meeting our Kyoto liability is through government purchasing permits funded by general taxation. However there is little difference to costs at the economy wide level between this option, the ETS as proposed, or a narrow carbon tax.
5. The report recommends that to be consistent with optimal long term policy, an ETS or carbon tax should be introduced in the short term, with free allocation to competitive-at-risk sectors and the possible exclusion of agriculture.
6. In the long term, the report finds that the introduction of a carbon price is warranted, and a broad-based carbon pricing scheme is least cost if the rest of the world takes action to price carbon and if technological change is induced by the carbon price. Without action by the rest of the world or technological change, free allocation of permits or sectoral exemptions may slightly increase welfare.
7. As the carbon price rises above a certain level, the models show that some form of pricing scheme will be least cost, even when no action is assumed by the rest of the world and there is no technological change.
8. The authors do not offer a recommendation as to whether the least cost broad-based mechanism would be a carbon tax or cap and trade system, as this is difficult to quantify with CGE models.
9. A further conclusion in the report is the need for clear and consistent policy signals around the pricing of carbon so firms can make efficient long term investment decisions.

Issues

10. There may be suggestions that further work should be done in this area. A number of issues were out of scope of the study including the costs of climate change occurring, the non-economic benefits of mitigating climate change and actions that consumers or governments might take against New Zealand if it were perceived that New Zealand was not doing enough to reduce emissions. The costs and benefits of policy actions on particular sectors, regions or income groups are also not examined. The exclusion of these factors should not change the relative merits of the different policy

options; however some members of the ETS Select committee and the public may consider that these issues should have been included in this analysis. The report refers to earlier modelling work by both NZIER and Infometrics that shows the relative sectoral impacts.

11. Equity judgements that are involved when considering how to distribute costs through the economy are also not captured in the modelling and are not discussed in the report.
12. It should be noted that although the authors do recommend the introduction of a broad-based pricing mechanism, the long term modelling results show little difference in welfare costs between most of the scenarios, including the government funding the liability from general taxation.
13. The finding that the free allocation of permits may improve welfare relative to full auctioning of permits is emphasised in the report as a mechanism to deal with carbon leakage, but this result only occurs under the conditions that the rest of the world does not take action, and additional technological change is not induced by a carbon price. Even in this case the result is borderline (Infometrics show no macroeconomic gain from free allocation whereas NZIER show a slight gain).
14. The authors do not offer a clear recommendation regarding whether a broad-based carbon tax or cap and trade system offers least cost reduction. Members of the ETS Select Committee may consider that the report has failed to meet its terms of reference in this regard.
15. The costs of a broad-based ETS could be overstated due to modelling limitations. Firstly, the modelling of forestry and land use changes is problematic and if forestry is more responsive to a carbon price than assumed in the models, then the costs of an ETS will be overstated. Further, the models do not incorporate full income tax schedules so they will underestimate the welfare gains from lower taxation to households.
16. It should also be noted that the revised net position figures are not incorporated into the report; however this should not change the relative costs and benefits of the various scenarios.

Recommendations

17. We recommend that your office forwards a copy of this report to the ETS Special Select Committee. A letter to the Chair of the Committee is attached for your signature.
18. Also attached for your signature are responses to the letters received from Hon Rodney Hide and Hon Jeanette Fitzsimons on the draft version of the report.

Regulatory Impact Analysis Terms of Reference for NZIER/ Infometrics Joint Venture

The Government has established a special select committee to review the Emissions Trading Scheme and related matters as provided for in the National-Act Confidence and Supply agreement. The terms of reference of the select committee require:

“a high quality, quantified, regulatory impact analysis to be produced to identify the net benefits or costs to New Zealand of any policy action, including international relations and commercial benefits and costs”

Desired Output

To provide the select committee with sound policy advice, the Government requires a high quality regulatory impact analysis of policies aimed at addressing climate change.

The regulatory impact analysis shall, as outlined in the Special Select Committee Terms of Reference, provide a fully quantified economic cost benefit analysis that identifies the net benefits or costs of the following options:

- The least-cost option for meeting any Kyoto liability
- The proposed Emissions Trading Scheme
- A revenue-neutral tax on carbon or carbon equivalents, coupled with an equivalent subsidy for carbon sinks, or a tax on energy

Work Allocation

The fully quantified economic cost benefit analysis will be contracted out to two separate consultancy firms who will form a joint venture to complete the work.

Timing

The regulatory impact analysis is due with the select committee by 9.00 am, 15 April.