

# Critique of the Australian Government's Position

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## Summary

### Background

In the lead-up to the Conference of the Parties to the Framework Convention on Climate Change to be held in Kyoto, Japan, in December 1997, the Australian Government has taken up a stance opposing uniform targets for reducing greenhouse gas emissions. The basis for this position is three selected and incompletely specified scenarios run on an economic model of the world economy called MEGABARE. Using this model as a kind of oracle, the government claims that meeting even modest targets for reducing carbon dioxide emissions would be very costly to the world economy and especially to Australia, a fossil fuel 'dependent' country.

The author of this critique of the MEGABARE modelling is a former leader of the Applied Mathematics Group in CSIRO, a background which has been helpful in demystifying MEGABARE and the claims made on its behalf. Part of this work will be published shortly in the refereed, scholarly journal *Environmental Science: International Journal of Science and Policy*, vol. 1, no. 1.

### The critique\*

Any computer model is only as good as the assumptions fed into it. In this case the assumptions (few of which are spelt out explicitly in the modellers' report) have the effect of making the reduction of emissions appear unnecessarily expensive. The model does this by:

- (1) Assuming that its business-as-usual (BAU) scenario\*\* involves high continuing growth in greenhouse gas emissions resulting from the combustion of fossil fuels, even in countries where there is low population growth or little dependence upon fossil fuels.
- (2) Presenting only two scenarios for reducing CO<sub>2</sub> emissions -- the model's 'less stringent' and 'more stringent' scenarios, which are almost identical in their effects by 2020, the end-point of the study.
- (3) Excluding from these emission reduction scenarios the cheapest and fastest ways of reducing CO<sub>2</sub> emissions, namely the efficient use of energy and greatly expanded use of natural gas for electricity generation and heating.

(Although the modellers do allow for some improvement in future efficient energy use in the BAU scenario, they ignore the large body of evidence of failure of the market for energy services and hence that there are substantial additional cost-effective improvements to be achieved in efficient energy use now and in the future. To this would entail government intervention to remove market barriers or compensate for market failure. This would dramatically reduce the cost of the reduction scenarios.)

- (4) Ignoring the economic benefits of shifting to an energy system which is more labour intensive and more suitable for local manufacture than the existing fossil-fuel based system which is shedding jobs at a high rate.



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- (5) Assuming that concerted action by the rich countries to reduce emissions would not influence the poorer countries to join in.

All this has the effect of creating a large task to be achieved in order to make quite small reductions in emissions; leaving only an expensive means of achieving these small reductions (namely, a rapid, massive shift to renewable energy at a time when only a smaller contribution from renewable energy is cost-effective or close to it); and omitting to recognise the economic benefits of making the transition.

Even with all these and other assumptions which make greenhouse gas reduction appear expensive, MEGABARE obtains the result that the total cost to rich countries is only 1.0-1.5% of projected Gross National Expenditure, somewhat higher in Australia. Because this is smaller than the uncertainty in the modelling results, it would be actually impossible to measure.

Perhaps because the modelling results are not sufficiently frightening, the Australian Government has re-presented them in ways which are grossly misleading.

### Australian Government's misrepresentations

The government creates the false impression that each Australian would have to withdraw \$6,000 to \$9,000 out of their bank accounts to pay for the reductions. In reality, each Australian would on average have earned several one hundred thousand dollars over the 22 year period and so the alleged amount to be paid, *if true*, would be a tiny fraction of those earnings. Furthermore, the economic benefits to each Australian of improved energy efficiency in a Sustainable Business Scenario (see below) would be comparable in magnitude with these alleged payments.

It claims that Australia would lose 90,000 jobs by reducing emissions, but these jobs do not exist at present. They are based on highly optimistic estimates of mostly temporary construction jobs that might be created under untrammelled resource development. The claim ignores the many thousands of *permanent* jobs that would be created in a Sustainable Business Scenario.

These and other misleading government claims raise the question as to whether the government is capable of leading the Australian economy as a whole into the 21st century, or whether it is tied to the few smokestack industries of the past with a vested interest in the production of greenhouse gas emissions.

As a foreign policy device, the government appears to be attempting to foment divisions between rich and poor countries; between the rich countries; and between supporters of uniform targets, differentiated targets and tradeable emission permits; and thus to undermine the creation of an international agreement.

### Solutions

The target proposed by the European Union<sup>+</sup> could be achieved in Australia and certain other rich countries at little or no net cost by means of the following Sustainable Business Scenario:

- reducing the projected BAU growth in emissions in the rich countries to a more realistic level;
- removing the barriers to rapid expansion in efficient energy use, which is currently precluded by failure of the market for energy services;
- allowing the current rapid expansion in the use of natural gas -- for electricity generation, heating, and cogeneration of heat and electricity -- to continue, as part of an emissions reduction strategy;
- facilitating the introduction of a significant contribution from renewable energy technologies which are either cost-effective or close to being so: namely windpower, biomass energy, solar thermal electricity, small hydro;



recommencing the funding of research and development in sustainable energy; and switching a significant fraction of urban transport to electric vehicles, public transport, walking and cycling.

Australia's fossil fuel 'dependence' is compensated for by its enormous short-term potential for cost-effective efficient energy use; by its very large medium- to long-term potential for renewable energy; by its adequate supplies of natural gas as a transitional fuel; and by the potential to create many new jobs in sustainable energy. Because of market failure, inappropriate *de facto* industry policies and the failure of fossil energy prices to reflect the full costs of production and consumption, government intervention is required to assist this transition. Revenue from a carbon tax, which would reflect at least some of the environmental and health costs of burning fossil fuels, would fund the transition. Other important instruments, which cannot be treated adequately in a top-down economic model such as MEGABARE, would be implemented, notably minimum energy performance standards, institutional changes, government purchasing, a sustainable energy industry policy, and education and training, thus making the greenhouse response strategy much less expensive than one depending on a carbon tax alone.

After Kyoto there may well be a need to create a system for the purchase of tradeable emission permits by countries *and multinational corporations who are large emitters (e.g. aluminium smelting and possibly iron and steel)*. There will certainly be a need for developing countries to set targets as well. However, such second phase actions should not be used as excuses for delaying first phase actions now by the principal greenhouse gas producing countries to set firm uniform targets for emission reductions for 2010 and 2020.

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\*Although my criticisms are severe, they do not question the motivations or integrity of the authors of the MEGABARE studies. No doubt, as they see it, they are doing their best to serve their government departments, government and professions. However, the motivation of the government is questioned here.

\*\*i.e. a scenario in which there are no policies designed to limit the growth of CO<sub>2</sub> emissions.

+A 15% reduction in CO<sub>2</sub> emissions, compared with 1990 levels, by 2010. To this I would suggest adding at least another 15% reduction by 2020.

14/10/97



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