Chapter 4

Treasury modelling

Introduction

4.1 The Department of the Treasury (the Treasury) undertook modelling on behalf of the Australian Government entitled *Australia's Low Pollution Future: The Economics of Climate Change Mitigation* (Treasury modelling).

4.2 The modelling examined 'four alternative scenarios in which Australia and the world follow pathways to a low-pollution future'.[1] Two of these scenarios assume a global stabilisation goal of 550 parts per million (ppm) of carbon dioxide equivalent (CO_2-e) in the atmosphere while the two remaining scenarios assume global stabilisation goals of 450 and 510 ppm. Each of these scenarios is compared against the 'reference case' which assumes no mitigation occurs. The reference case does not account for any impact of climate change on the economy.

4.3 The committee received extensive evidence raising serious concerns about the modelling undertaken by the Treasury and identifying flaws in the modelling.

4.4 It appears to the committee that the purpose of the Treasury modelling, from the government's point of view, was to present the most benign picture possible of the impact of the Carbon Pollution Reduction Scheme (CPRS) on the economy and jobs.

4.5 Following the evidence presented, it is the view of the committee that the Treasury modelling was limited and flawed in that it:

- Assumed other countries would sign up to reducing emissions;
- Did not assess the impact of the current significant global economic downturn;
- Did not assess the impact on regional economies, which, as outlined later in this chapter, can and has been undertaken by Frontier Economics;
- Assumed in its modelling that full employment would be maintained;
- Overstated the assistance to some industries;
- Did not include the effective rates of compensation to industry;
- Did not take account of the specific circumstances of the Western Australian electricity market; and

1 Australian Government, *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*, 2008, p. x.

- Did not model, as far as the committee is aware, the features of the actual proposed CPRS.

4.6 The Department of the Treasury provided evidence that the 'scenarios that were modelled by Treasury were done at the direction of the government.'[2]

4.7 This raises the question why the government did not ask the Treasury to model some more realistic scenarios, in particular a scenario in which the rest of the world does not take action to the same extent as Australia, as assumed in the modelling, and in which the global economic downturn will impact the viability of Australian businesses and their ability to compete internationally.

4.8 The committee found it very hard to understand why the government would not have asked Treasury to assess the impact of the proposed scheme on regional economies to better inform the design of the scheme and to ensure any transitional assistance could be better targeted.

4.9 The committee considers the modelling undertaken by the Treasury to be inadequate and that the government should direct the Treasury to undertake and publish modelling of the impact of the CPRS:

a. assuming little or no action by Australia's major competitors to reduce greenhouse gas emissions;

b. taking account of the economic conditions due to the global economic downturn;

c. on industry at a sectoral level, including the effective rates of compensation to industry;

d. on regional economies; and

e. in comparison with modelling of a variety of viable alternative policy scenarios aimed at Australia contributing to the reduction of global greenhouse gas emissions.

Peer review commissioned by the committee

4.10 In order to properly analyse the modelling undertaken by the Department of the Treasury, the committee commissioned a peer review of the modelling. The committee commissioned the review following issues raised during the early part of the inquiry as to the veracity of the modelling and thus the impacts of the government's proposed policy.

2 Ms Meghan Quinn, Manager, Climate Change Modelling Unit, Department of the Treasury, *Committee Hansard*, 19 November 2008, p. 62.

4.11 The review was undertaken by Dr Brian Fisher, of Concept Economics, formerly Executive Director of the Australian Bureau of Agricultural and Resource Economics (ABARE), and a recognised economist in the area of emissions trading.

4.12 Among the key findings of the review were:

> Taking account of assumptions in both the reference scenario and the policy scenarios in the Treasury modelling, this review concludes that the most problematic elements surround:
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> 1. sectoral marginal abatement cost curves that in a number of emissions-intensive industries appear to admit very significant mitigation at relatively low cost;
> 2. electricity sector transformation assumptions that appear to underestimate significantly the cost and structural adjustment challenge of moving to a decarbonised electricity generation sector;
> 3. long-term commodity price assumptions that in some cases depart significantly from industry estimates;
> 4. international action assumptions that are highly optimistic given the intrinsic nature of the climate change problem and the institutional framework in which international negotiations take place; and
> 5. emission pricing and permit trading assumptions that bias the results toward artificially low costs of mitigation.[3]

4.13 Dr Fisher went on to state:

> …the interaction of these assumptions is likely to result in the Treasury modelling seriously underestimating the economy-wide and sectoral challenges associated with particular emissions reduction targets, particularly in the short to medium term. The implications are especially important for Australia's emission-intensive, trade-exposed (EITE) industries and for the electricity generation sector.[4]

4.14 The review examined the Treasury modelling with respect to a range of issues including:

- sensitivity analysis of the assumptions on which the modelling was undertaken;
- the impact on global emissions of the government's proposed emissions trading scheme (ETS) and the potential leakage of Australian jobs and industry;

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3 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 6.

4 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 6.

- the consequences of more realistic assumptions concerning the likelihood of other countries taking similar action to that proposed by Australia; and
- the failure to include the impact of the global financial crisis (GFC) on Australia's capacity to bear the costs of participation in a global ETS and the rate at which other countries will commence participation in a global emissions trading scheme.

The full terms of reference for the review can be found at appendix 6.

Additional information sought from the government by the committee

4.15 The committee is concerned by the government's lack of transparency and public accountability when it comes to the Treasury modelling of the economic impact of the proposed CPRS.

4.16 In order to allow a proper assessment and scrutiny of the government's modelling, the committee, on behalf of the Senate, states and territories, industry, unions and the Australian public at large needed and deserved access to all the unpublished modelling information used by the government. This included unrestricted access to all of the government's assumptions, model codes and databases among other information.

4.17 In order to allow a comprehensive analysis of the modelling undertaken by the Treasury the committee sought additional information which had not been made available in the public domain. The committee considered the gaining of this information to be in the public interest and necessary for the committee to properly undertake the task of scrutinising the government's proposed CPRS.

4.18 To date the government has not provided a proper explanation as to why the information sought by the committee, and ordered to be produced by the Senate has not been provided.

4.19 The committee is extremely concerned about this lack of public accountability on behalf of the government in relation to a major policy proposal with serious potential implications for the Australian economy and jobs.

4.20 Many witnesses raised concerns about the amount of publicly available information concerning the modelling undertaken by the Treasury. For example, Ms Amy Lomas, Assistant Director, Emissions Trading Unit, the Western Australia Department of Treasury and Finance stated:

> We have undertaken a number of different steps to obtain access to the data that supports the release of the Australia's low pollution future report by the Commonwealth Treasury and we have had a response via email which indicates to us that they are not able to provide us with any data other than what is already in the public domain. That has meant that we have had to

> rethink our approach to how we advise the state government on how the CPRS is likely to affect Western Australia.[5]

4.21 Ms Lomas detailed for the committee the information the Western Australia Department of Treasury and Finance had been seeking and had not gained as follows:

> For Western Australia, we are after time series data of industry growth output in millions of dollars and employment numbers for the two scenarios that they modelled for the CPRS—that is, the CPRS minus five per cent and the CPRS minus 15 per cent—and obviously the reference case scenarios that would apply as well. That would give us data for every year out to 2050 for Western Australia. Sorry, that is for Australia. We are also after the equivalent for Western Australia so that we can compare it, and any substate information that is comparable, so industry gross output by, say, regions—the Pilbara region or the south-west. We do not have any substate regional data.
>
> We are also after gross state product time series data, again for those two scenarios, so that we can actually see what the nominal values would be for gross state product out to 2050. We are after time series data of emissions. If you look at the Commonwealth Treasury modelling, there is no information in there for states and territories on their actual emissions levels, so I could not tell you if Western Australia's emissions are forecast to decline relative to 2000 in the Commonwealth Treasury modelling report, and we are also after price changes for household consumables. We do not have any indication of which products households would be purchasing and what the relative changes in prices would be for those.[6]

4.22 The committee also noted the view expressed by Professor Warwick McKibbin, who stated that 'I am a big fan of open access and open source, and anything that I do which is funded by public money is publicly available.'[7]

4.23 When asked why modelling information was being kept secret, Ms Meghan Quinn from the Department of the Treasury stated:

> I draw your attention to the information that is available from the modelling exercise undertaken by Treasury and other external consultants. My understanding is that it is the most comprehensive documentation available in Australia and comparable exercises. We have published comprehensive background consulting reports on the internet. All the underlying data that is contained in the report is available on the webpage, including all the data underlying all the charts. So there is a comprehensive set of information. It is more comprehensive than other publicly available information on comparable modelling in Australia or overseas. So it is not fair to say that

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5 Ms Amy Lomas, Assistant Director, Emissions Trading Unit, Department of Treasury and Finance, Western Australia, *Committee Hansard*, 18 February 2009, p. 12.

6 Ms Lomas, Department of Treasury and Finance, Western Australia, *Committee Hansard*, 18 February 2009, p. 13

7 Professor Warwick McKibbin, *Committee Hansard*, 19 February 2009, p. 71.

> there is not comprehensive information available in the public domain for you to look at.[8]

4.24 The committee was not at all satisfied with the explanation provided. The committee was not seeking access to publicly available 'background consulting reports' but to unpublished underlying data, assumptions, model codes and databases among other things that were vitally important to assess the credibility of the government's conclusions about the economic impact of the proposed CPRS. If all the information was indeed publicly available why has the government not complied with the Senate's order of 11 March 2009 (as discussed below), pointing out that all the information requested was already publicly available. It is clear that this information is not publicly available.

4.25 In attempting to gain the additional information, in the first instance the committee questioned the Department of the Treasury about the release of information to organisations seeking additional information about the modelling. Ms Quinn stated 'Any additional information requested from an industry, a stakeholder, a non-government organisation or state government is a matter for the government to decide whether it is released or not.'[9]

4.26 The committee wrote to the Treasurer, the Hon. Wayne Swan MP, on 9 December 2008 requesting that:

> Dr Fisher be afforded full access to the government's complete documentation of the government's models together with the model codes and databases and any other model simulations undertaken relevant to the policy scenarios, but not publicly released.[10]

4.27 The Treasurer's response, which was only received on 3 February 2009, after the committee had given notice of a motion to order the production of information in the Senate, refused the committee's request and stated that:

> The Treasury's climate change mitigation modelling was undertaken in conjunction with external consultants. The Treasury is obligated, under contractual agreements with these consultants, to not disclose or make public any Confidential Information of the other party. The information includes model codes and databases.[11]

4.28 On 4 February 2009 the Senate made an order requiring the production of information by 5 February 2009:

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8 Ms Quinn, Department of the Treasury, *Committee Hansard*, 2 April 2009, p. 68.

9 Ms Quinn, Department of the Treasury, *Committee Hansard*, 19 November 2008, p. 81.

10 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to the Hon. Wayne Swan MP, Treasurer, 9 December 2008.

11 The Hon. Wayne Swan MP, Treasurer, committee correspondence, 28 January 2009.

CARBON POLLUTION REDUCTION SCHEME—TREASURY MODELLING—ORDER FOR PRODUCTION OF DOCUMENTS

The Chair of the Select Committee on Fuel and Energy (Senator Cormann) amended general business notice of motion no. 334 by leave and, pursuant to notice of motion not objected to as a formal motion, moved—That the Senate—

a) notes that:

i. the Select Committee on Fuel and Energy contracted Dr Brian Fisher from Concept Economics to conduct an independent peer review of the Department of the Treasury modelling of the impact of the Government's proposed Carbon Pollution Reduction Scheme,

ii. the committee wrote to the Treasurer (Mr Swan) on 9 December 2008 requesting that Dr Fisher, be given 'full access to the government's complete documentation of the government's models together with the model codes and databases and any other model simulations undertaken relevant to the policy scenarios, but not publicly released' by 17 December 2008,

iii. the Treasurer has refused the committee's request, and

iv. Dr Fisher has reported that he was impeded in carrying out the work requested by the committee because the information requested from the Treasurer was not made available to him; and

b) orders that there be laid on the table by the Minister representing the Treasurer, no later than noon on 5 February 2009, the following information relating to the Department of the Treasury modelling, *Australia's low pollution future: The economics of climate change mitigation*:

i. the model documentation and codes together with all databases for both the global trade and environment model and the Monash multi-regional forecasting model that were employed in the department's modelling of the Carbon Pollution Reduction Scheme scenarios in a form that would allow the reproduction of the department's results, and

ii. any other model simulations undertaken relevant to the abovementioned policy scenarios but not publicly released.[12]

4.29 Senator Ursula Stephens, Parliamentary Secretary for Social Inclusion and the Voluntary Sector, made the following statement in the Senate on behalf of the government on 5 February 2009:

12 Senator Mathias Cormann, *Senate Hansard*, 4 February 2009, p. 268.

> The Treasury's climate change mitigation modelling is one of the largest and most complex economic modelling projects ever undertaken in Australia, and extensive documentation of the project has already been made publicly available. The Treasury's climate change mitigation modelling was undertaken in conjunction with external consultants. The Treasury is obligated, under contractual agreements with the consultants, to not disclose or make public any confidential information of the other party. This information includes model codes and databases, and it is likely that external consultants would be subject to commercial harm if the Treasury were to release to the committee any model codes or databases covered by such contractual agreements.[13]

4.30 On 6 February 2009 the committee wrote to the Treasurer referring to the statement made by Senator Stephens on 5 February 2009 and pointing out that the Senate, in passing the order of 4 February 2009, had effectively accepted the judgement of the committee that contractual obligations to consultants did not constitute a valid reason for declining to produce the documents. The letter quoted the relevant resolution of the Senate of 30 October 2003 which provides:

> The Senate and Senate committees shall not entertain any claim to withhold information from the Senate or a committee on the grounds that it is commercial-in-confidence, unless the claim is made by a minister and is accompanied by a statement setting out the basis for the claim, including a statement of any commercial harm that may result from the disclosure of the information.[14]

The letter to the Treasurer requested a statement of the nature of the commercial harm claimed.

4.31 Senator Stephens made the following further statement in the Senate on behalf of the government on 11 February 2009, attempting to make the case of commercial harm:

> The government believes that the provision of documents related to the modelling conducted for Australia's low pollution future: the economics of climate change mitigation would cause substantial commercial harm to organisations that were contracted to assist Treasury. In the case of the Monash Multi-Regional Forecasting model, the MMRF model, provision of the model codes and database would cause substantial commercial harm to Monash University—in particular, to the Centre of Policy Studies at that university. The model codes and databases for this model are the private, confidential information of that organisation. They are sold as a commercial product by Monash University. Disclosure of these model codes and databases would have the result that other organisations would have had

13 Senator the Hon. Ursula Stephens, Parliamentary Secretary for Social Inclusion and the Voluntary Sector, *Senate Hansard*, 5 February 2009, p. 83.

14 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to the Hon. Wayne Swan MP, Treasurer, 6 February 2009.

> access to this information without entering into a commercial arrangement with Monash University. In effect, Monash University would be deprived of the value of the model codes and databases, resulting in commercial harm through the loss of the market to which they had previously sold their products.
>
> In the case of the Global Trade and Environment Model, the GTEM, provision of the database would cause substantial commercial harm to the Centre for Global Trade Analysis at Purdue University. The Centre for Global Trade Analysis provides the global trade analysis project database from which the database for the GTEM has been derived. Disclosure of this GTEM database would have the effect of disclosing a substantial portion of the private, confidential information of the Centre for Global Trade Analysis. Disclosure of this database would have the result that other organisations would have access to this information, again without entering into a commercial arrangement with the Centre for Global Trade Analysis. This would prejudice the ability of the Centre for Global Trade Analysis to sell access to the database in Australian and world markets, resulting in commercial harm through the loss of the market to which they have previously sold their products.[15]

4.32 Following the response from the government the committee wrote to Monash University and Purdue University on 11 February 2009 seeking to work with the universities to protect the intellectual property of the universities while allowing the committee to properly scrutinise the material.[16]

4.33 On 12 February 2009 the committee received correspondence from Purdue University stating that commercial harm to its Global Trade and Analysis Project, would be avoided by the simple purchase of a licence.[17]

4.34 On 19 February 2009 the committee received correspondence from Monash University which stated that 'The University wishes to assist your Committee in every way possible' and that the University would be in contact with the committee to arrange how the university could 'meet the Committee's needs as far as possible while protecting the University's interests'.[18]

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15 Senator the Hon. Ursula Stephens, Parliamentary Secretary for Social Inclusion and the Voluntary Sector, *Senate Hansard*, 11 February 2009, p. 700.

16 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to Professor Richard Larkins, Vice-Chancellor and President, Monash University, 11 February 2009; Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to Professor Ken Foster, Interim Department Head, Department of Agricultural Economics, Purdue University, 11 February 2009.

17 Professor Ken Foster, Interim Department Head, Department of Agricultural Economics, Purdue University, committee correspondence, 12 February 2009.

18 Professor Edwina Cornish, Deputy Vice-Chancellor (Research), Monash University, committee correspondence, 19 February 2008 [sic].

4.35 On 11 March 2009 the Senate made a further order requiring the production of information, on this occasion by 13 March 2009. This order recognised that:

> a) irrespective of the government's statement in the Senate on 11 February 2009 it is in the public interest that all underlying information used by Treasury in its modelling be available to help facilitate proper scrutiny by the Senate of the impact of the government's Carbon Pollution Reduction Scheme;
>
> b) models used in the modelling exercise developed using public funding ought to be publicly available; and
>
> c) where the public release of information is likely to cause significant commercial harm to an external organisation every effort ought to be made to prevent that harm while not preventing the Senate from fulfilling its proper role to scrutinise the activities and proposals of government.[19]

4.36 The order specified that some of the requested information was to be treated as confidential by the committee, any senator and any other person authorised to access the information under the order. The order stated that:

> …the committee may refer to the information produced to it in accordance with this order and any conclusions reached from it in a report to the Senate, but shall not disclose the information in such a report.[20]

4.37 These specific and strong confidentiality requirements mean that any disclosure or use of the information otherwise than in accordance with the order would be a contempt of the Senate and a criminal offence under the *Parliamentary Privileges Act 1987*.

4.38 Following the above order of the Senate, on 12 March 2009 the committee again wrote to Monash University informing them of the order and seeking to establish whether the protections afforded by the Senate sufficiently protect Monash University's intellectual property in relation to the Monash Multi Regional Forecasting model (MMRF). The committee also requested that the university write to the Treasurer, advising that the university has no objection to the government releasing the requested information according to the terms of the Senate order.

4.39 On 17 March 2009 Senator Stephens made a further statement to the Senate regarding the required documentation. Senator Stephens, in response to the Senate order of 11 March 2009, stated:

> …the government continues to believe that the provision of the proprietary model code and data related to the modelling conducted for Australia's low

19 Senator Mathias Cormann, *Senate Hansard*, 11 March 2009, p. 1309.

20 Senator Mathias Cormann, *Senate Hansard*, 11 March 2009, p. 1309.

> pollution future: the economics of climate change mitigation would cause commercial harm to organisations that were contracted to assist Treasury.[21]

4.40 Senator Stephens concluded by stating 'Until these serious matters of commercial harm are resolved to the documented satisfaction of the external consultants, the government will not consider this matter further.'[22]

4.41 The committee received further correspondence from Monash University on 18 March 2009 which included a letter sent by the university to the Treasurer which stated:

> I confirm that Monash University wishes to assist the Committee and in accordance with the above mentioned letter agrees to waive its confidentiality requirements on the basis that Order SJ61-11 March 2009 applies to the disclosure and that it overrides the provisions of Senate Standing Order 37 to the extent that Standing Order 37 would otherwise allow disclosure of information obtained from Monash University to persons other than those detailed in paragraph 4 of Order SJ61-11 March 2009.
>
> Monash University waives its requirements of confidentiality on the basis that confidentiality is protected under the provisions of Order SJ61-11 March 2009 and disclosure will only be made to the persons referred to in paragraph 4 of Order SJ61-11 March 2009 who are subject to the confidentiality restrictions detailed in paragraph 5 of Order SJ61-11 March 2009.[23]

4.42 Following receipt of the above correspondence from Monash University, the committee wrote to the Treasurer on 18 March 2009 reiterating the committee's judgement 'that contractual obligations to consultants do not constitute a valid reason for declining to produce information' and pointing out that 'given the information is required under an order of the Senate, parliamentary privilege overrides any relevant contractual obligations of the government.'[24]

4.43 Importantly, the committee also pointed out that the government's claim of commercial harm related to only part of the information required under the orders and ignores the majority of the information sought.

4.44 The committee requested from the Treasurer:

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21 Senator the Hon. Ursula Stephens, Parliamentary Secretary for Social Inclusion and the Voluntary Sector, *Senate Hansard*, 17 March 2009, p. 1689.

22 Senator the Hon. Ursula Stephens, Parliamentary Secretary for Social Inclusion and the Voluntary Sector, *Senate Hansard*, 17 March 2009, p. 1689.

23 Mr Andrew Kaynes, Senior Solicitor, Monash University attaching letter from Professor Edwina Cornish, Deputy Vice-Chancellor (Research), Monash University, to the Hon. Wayne Swan MP, Treasurer, dated 18 March 2008 [sic], committee correspondence, 18 March 2009.

24 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to the Hon. Wayne Swan MP, Treasurer, 18 March 2009.

i. that you provide all of the information as ordered by the Senate on 11 March 2009 by midday 19 March 2009; and

ii. if you do not provide the information, that you provide a statement by close of business 19 March 2009 explaining:

a) the basis on which the government continues to refuse to provide the information sought by the Committee that does not relate to the intellectual property of Monash University or Purdue University, including all of the information required under 3(b) of the 11 March 2009 order of the Senate;

b) the basis on which the government continues to refuse to provide the information sought by the Committee that relates to Monash University given the university has waived its requirements of confidentiality; and

c) the reason the government continues to refuse to release to the Committee the information relating to Purdue University given the specific confidentiality requirements contained in the order.[25]

4.45 The committee again heard evidence from the Department of the Treasury on 2 April 2009. When asked about the government's failure to comply with the orders of the Senate, Ms Quinn stated:

> The position that the government has made clear in the Senate is that it believes there is the potential for commercial harm for aspects of the information to be provided. It is a matter for the government.[26]

4.46 Following the above evidence from the Treasury, and the absence of a response to the committee's letter of 18 March 2009, the committee again wrote to the Treasurer on 3 April 2009. The letter stated:

> The Committee has conscientiously sought to address the concerns raised by the Government regarding the provision of the requested information and has actively sought to protect the intellectual property of the universities. Monash University's unusual and specific notification to you of its willingness to release the information in question in accordance with the Senate order clearly indicates that commercial harm is not an issue. The Committee views this response from the Government and the Department of Treasury as unnecessarily bureaucratic, baseless and deliberately unhelpful to the Committee.
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> The Committee considers the responses received to date from the Government to be seriously detrimental to the Committee's ability to

25 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to the Hon. Wayne Swan MP, Treasurer, 18 March 2009.

26 Ms Quinn, Department of the Treasury, *Committee Hansard*, 2 April 2009, p. 87.

properly scrutinise the proposed Carbon Pollution Reduction Scheme and therefore at odds with the public interest.

The Committee yet again asks:

i. that you provide all of the information as ordered by the Senate on 11 March 2009 by midday 7 April 2009; and

ii. if you do not provide the information, that you provide a statement by close of business 7 April 2009 explaining:

a) the basis on which the government continues to refuse to provide the information sought by the Committee that does not relate to the intellectual property of Monash University or Purdue University, including all of the information required under 3(b) of the 11 March 2009 order of the Senate;

b) the basis on which the government continues to refuse to provide the information sought by the Committee that relates to Monash University given the university has waived its requirements of confidentiality; and

c) the reason the government continues to refuse to release to the Committee the information relating to Purdue University given the specific confidentiality requirements contained in the order.[27]

4.47 At the time of publishing, the committee has not received any of the information ordered by the Senate, or any response to its letter to the Treasurer dated 3 April 2009.

4.48 The committee considers the government's failure to release the information as ordered by the Senate to be a major failure of accountability and transparency. The government is proposing a major policy change which the Australian people should be able to properly scrutinise to assess the basis on which the government has formed its views and the likely impact of the policy. The government's lack of transparency has left the Australian people unable to have a properly informed debate.

4.49 In this context the committee notes the government's stated commitment to being open and accountable. Only recently Senator the Hon. John Faulkner, Special Minister of State, stated on behalf of the government that:

> …the best safeguard against ill-informed public judgement is not concealment but information. As Abraham Lincoln said: "Let the people know the facts, and the country will be safe."[28]

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27 Senator Mathias Cormann, Chair of the Senate Select Committee on Fuel and Energy, committee correspondence to the Hon. Wayne Swan MP, Treasurer, 3 April 2009.

28 Senator John Faulkner, Special Minister of State, 'Open and Transparent Government – the Way Forward' speech made to *Australia's Right to Know* Freedom of Speech Conference, 24 March 2009.

4.50 The committee is of the view that the only conclusion that can be reached from the government's persistent refusal to release the information as ordered by the Senate is an attempt by the government to cover up important information that would help Australians to more properly assess the impact of the proposed CPRS, in particular it effect on the economy and jobs.

4.51 The committee believes that there is a strong likelihood that the impact of the scheme as proposed by the government on the economy and jobs is in fact worse than what the Australian people are led to believe. Why else would the government not agree to submit its modelling to rigorous scrutiny and peer review, making all of the necessary information available?

Consequence of limited information available for peer review

4.52 Dr Fisher's report included comment on the importance of transparency in modelling exercises as well as the issues he faced given the limited information available to him. Dr Fisher stated:

> Although the public report on the Treasury modelling is voluminous there remain aspects of the modelling that are not transparent…it has been necessary to undertake this review without access to a complete set of information about model documentation, databases, implementation and many of the underlying technical model parameters. Given the major long-term structural changes to the Australian economy implied by the introduction of an ETS and the fact that the development of the key model employed to determine the international effects on the Australian economy of the scheme was fully tax-payer funded, it seems reasonable that full model datasets, codes and comprehensive documentation be released.[29]

Dr Fisher also stated:

> Among the factors that determine the integrity of any modelling exercise include the quality of the data, the credibility of assumptions and scenarios, the model closure framework and the ease with which the model(s) results can be reproduced. In other words, a rigorous approach to modelling demands a high level of transparency.
>
> As already stated this review regards the transparency surrounding the Treasury modelling process as unsatisfactory, notwithstanding the efforts of the Committee to gain access to models, documentation, codes and databases developed with public funding.[30]

29 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 2.

30 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 4.

Committee comment

4.53 The committee is of the view that it is in the public interest for the government to release all of the information as ordered by the Senate on 11 March 2009.

Peer review report

4.54 This part of the report discusses the conclusions and key findings of Dr Fisher's review. Given the broad range of issues covered in Dr Fisher's report, the findings will be discussed by theme.

4.55 Dr Fisher's conclusions regarding the Treasury modelling and the government's proposed CPRS include:

> It is important, nonetheless, that Australia not be complacent about the scale of economic transformation in prospect under an ETS, either at an economy-wide or sectoral level. Those who suggest that the Treasury modelling confirms that Australia's economy could accommodate easily much larger emission targets than those proposed by the Government seem willing to overlook the limitations that surround even the most careful of modelling exercises.[31]

And:

> An emissions trading scheme and associated medium and long-term targets will have profound economic implications for every Australian business and household. That Australia's economy may be on the brink of the greatest economic slump in more than half a century only reinforces the need for prudent decision-making, notwithstanding the results of the Treasury modelling about Australia's smooth transition to a low carbon future.[32]

4.56 As set out above, the key findings of Dr Fisher's review included the likely underestimation of the economy wide and sectoral challenges associated with emissions reduction targets, particularly in the short to medium term.

International action assumptions and likelihood of global action

4.57 In relation to the international action assumptions in the Treasury modelling, Dr Fisher stated:

> The starting point for the modelling is the statement that: 'Because responding to climate change is a global challenge, this report evaluates the impacts on Australia in the context of global action to reduce emissions'

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31 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 4.

32 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 4-5.

> (Treasury 2008a, p. 3). From this premise, Treasury's analytical framework yields a self-reinforcing, virtuous circle of domestic and international benefits. Hence: 'Strong global coordinated action accelerates cost reductions in low-emission technologies, prevents lock-in of more emission-intensive industry and infrastructure, and minimises distortions in trade-exposed sectors' (Treasury 2008a, p. 89).
>
> …
>
> A serious gap in the released Treasury modelling results is the failure to publish the results from any policy scenario where 'strong coordinated global action' on climate change is not forthcoming. This deficiency is all the more notable given:
>
> - the intrinsic nature of the collective action problem surrounding climate change;
> - the manifest failings of the existing international climate change architecture; and
> - the explicit adoption by the Government of a medium-term national target range that includes an unconditional commitment to reduce Australia's emissions irrespective of the actions of other countries.[33]

4.58 Dr Fisher also stated:

> Ideally, Treasury's scenarios should have taken account of global, group and independent action by Australia, a view shared not only by a range of stakeholders but also, it would appear, by the Government's premier advisory body on structural reform (Productivity Commission 2007, p. 11).[34]

4.59 Regarding term of reference 4.1, the consequences of more realistic assumptions concerning the likelihood of the rest of the world taking similar actions to Australia, Dr Fisher made the following statement:

> The likely consequences of what this review regards as a more realistic set of assumptions on global action include the following:
>
> - estimated emission prices in Australia are likely to be higher for a given emissions reduction trajectory;
> - the cost of emission reductions to the Australian economy are likely to be higher;
> - the postulated gains from early action by Australia are likely to be less or non existent;
> - the degree of competitive disadvantage faced by Australia's EITE sector would be greater; and

33 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 17 and 18-19.

34 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 21.

- the risk of serious disruption surrounding the transformation of Australia's stationary energy sector would be greater.[35]

4.60 Dr Fisher went on to say that there is 'little in the recent experience of international climate change negotiations that points the way to the Treasury scenario of "strong coordinated global action" involving all major emitters'[36] and:

> In reality, there is almost no prospect of non-Annex B countries taking on binding emission restraints under a post-2012 international climate change agreement arising from the UN climate change summit in Copenhagen. Any new agreement will have to allow for different types of mitigation commitment. The best that could be hoped for in coming years is for developing countries to engage gradually in an international framework via policy-based commitments.[37]

4.61 In relation to term of reference 4.2, the consequences of more realistic assumptions concerning the participation of China in a global ETS by 2015, Dr Fisher concluded that the 'Treasury modelling assumptions appears to regard China's position in international climate change negotiations as a giant bluff.'[38]

4.62 Dr Fisher, addressing term of reference 4.3, concluded that 'the prospects of India pricing emissions by 2020 appear slim.'[39]

4.63 Addressing term of reference 4.4, Dr Fisher concluded that:

> …there is little prospect of the United States agreeing in the near term to anything approaching the national emissions allocation framework modelled by the Treasury. The modelling relies on especially heroic assumptions in terms of the timing and nature of future US commitments to emissions reduction targets within an international agreement.[40]

4.64 In relation to term of reference 4.5, the consequences of more realistic assumptions concerning the likelihood of a global agreement being sustained through the year 2050, Dr Fisher stated that 'No less formidable than the task of reaching a

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35 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 34.

36 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 34.

37 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 35.

38 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 37.

39 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 37.

40 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 39.

comprehensive global agreement on climate change will be sustaining one'.[41] He also stated:

> Recognising that it is impossible to predict with any precision the specific course of international developments, it would have been useful if the Australian Government had explored likely areas of institutional stress in formulating the parameters of the Green Paper, the White Paper and the Treasury modelling.
>
> This would have assisted policy makers in gaining a better understanding of the likely dynamics of future global cooperation. At the moment, the dominant approach seems based on willing all national governments to act without a clear understanding of the incentives of particular groups of countries. Australia has put its faith squarely behind a Kyoto-based approach which has demonstrated its incapacity to engender comprehensive engagement.[42]

Impact of the CPRS on the economy, industry, employment and the environment

4.65 In relation to term of reference 2.1, the impact on global emissions of the government's proposed ETS and the potential leakage of Australian jobs and industry in emissions intensive trade exposed industries such as aluminium, liquid natural gas (LNG), cement and agriculture, Dr Fisher stated:

> …many Australian industries, particularly in the traded-good sector, face a major competitive challenge under a domestic ETS. Just as Australia is a climate taker, not a climate maker, it is also the case that Australia is a price taker in global markets, not a price maker for the very large majority of the commodities that we produce.
>
> An ETS could impose significant costs on Australian operations and bias investment decisions toward countries with lesser constraints on emissions. Hence the competitive impact on Australia's emission-intensive, trade-exposed industries – including aluminium, LNG, cement and agriculture – is likely to be substantial in an environment where international action on mitigation is likely to be slow, fragmented and partial.
>
> On the basis of recent data, EITE industries account for 16 per cent of Australian business investment, 51 per cent of exports, 15 per cent of gross value added and employ nearly one in 10 working Australians (BCA 2008). The imposition of additional costs not faced by competitors is likely to constrain employment, investment and growth in these industries, with the potential for economic activity to shift to locations without a carbon price.
>
> …

41 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 39.

42 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 39-40.

> Over 80 per cent of Australia's exports go to countries that are unlikely to be subject to a carbon constraint in the near term. Around 75 per cent of Australia's imports come from similar countries. Notably, these figures are significantly higher than developed countries in Europe given high levels of intra-EU trade. For example, the relevant figures for the United Kingdom are roughly 40 per cent (PJP 2008, p. 17). This suggests, in turn, that competitiveness and carbon leakage problems may be more significant for Australia's EITE sector than for emissions-intensive industries in many other developed countries.
>
> Notwithstanding modifications in the White Paper, the Government's proposed ETS looks set to impose greater competitiveness imposts on Australian EITE industries than will apply under any other current or proposed scheme, including the European ETS.[43]

Further, he stated:

> With its international action assumptions, the Treasury modelling largely assumes away what Garnaut described as the 'truly dreadful problem' of Australia's EITE industries facing a carbon price while their international competitors take no action (Garnaut 2008a, chapter 13).
>
> …
>
> The Treasury report also concludes that there is 'little evidence of carbon leakage' at the relevant emission prices with noticeable impacts only occurring at higher emission prices, roughly double the price of the CPRS - 5 scenario (Treasury 2008a, p. 169). Again, given the questions raised above about the international action assumptions this is not an especially credible result.
>
> …
>
> A final point worth noting is that the competitive impact on EITE industries of an ETS is likely to be felt most keenly in regional and remote Australia, often in locations with limited alternative sources of economic activity of such high value. The minerals industry, for example, is especially important to the economies of Western Australia, Queensland and the Northern Territory.[44]

4.66 Regarding the impact on global emissions of the government's proposed ETS and the potential leakage of Australian jobs and industry in non trade exposed industries such as electricity, Dr Fisher stated that 'the Government's proposed ETS will have profound competitive implications for many operators in Australia's electricity generation sector.'[45] Dr Fisher also stated:

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43 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 25-26.

44 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 27, 28 and 31.

45 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 31.

> In line with the treatment of other sectors, most of the discussion of the electricity industry in the Treasury modelling report centres on a smooth, long-run transformation of the industry toward decarbonisation. There is relatively little that sheds light on the short- to medium term adjustment path of the sector and, as noted earlier, what analysis there is rests on assumptions about pass-through rates and strategic price setting behaviour. Also significant is the statement that the report projects retirement of electricity generators by modelling them as physical economic assets, with no account taken of 'the impact of financial considerations, such as debt-equity ratios or ownership structures' on retirement decisions' (Treasury 2008a, p. 178).[46]

4.67 In relation to the third term of reference, the economic and environmental consequences of the government's proposed eligibility thresholds for emissions intensive, trade exposed (EITE) industry assistance, Dr Fisher stated that the proposed scheme 'by design, delivers only partial assistance to EITE industries.'[47] Dr Fisher also stated:

> There is no detailed economic analysis underpinning the designated assistance thresholds which seek to identify Australian industries that would be viable and sustainable under a global carbon constraint.
>
> In these circumstances, there remains a clear risk under the ETS that industries will move from Australia to elsewhere, with no benefit in terms of global emissions reductions. This would be contrary both to economic efficiency and to environmental effectiveness.
>
> Second, there are major discontinuities in assistance rates, which in turn can lead to unintended consequences and distorted investment decisions.[48]

4.68 Dr Fisher further stated that 'there are obvious anomalies such as the exclusion of the coal industry from the assistance regime that appear to reflect an element of politicisation of the scheme.'[49]

4.69 Addressing term of reference 10.1, the impact on unemployment of the government's ETS and a rising carbon price in all years that the scheme is in place, Dr Fisher stated:

> As far as the reviewer is aware the general equilibrium models employed by the Treasury assume that real wages adjust downwards following the introduction of the ETS to ensure that the long run equilibrium rate of

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46 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 31.

47 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 32.

48 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 33.

49 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 33.

> unemployment is maintained. This is a common closure for such models. It follows that estimates of possible additions to unemployment have not been made as far as the reviewer is aware.
>
> Real wages decline steadily over time, relative to the reference scenario. This assumes that individuals will willingly accept ongoing downward real wage adjustments below what they otherwise would have received, without any adverse impacts on labour market outcomes at the sectoral or aggregate level. Labour inputs are assumed to costlessly shift between sectors. These assumptions ignore some of the key existing institutional realities of the Australian labour market, as well as any impact that the introduction of new regulatory arrangements on labour markets might have. These appear to be major oversights.[50]

4.70 Addressing term of reference 14, the economic impact of the government's ETS on farming and agricultural industries, even if those industries are not covered in any scheme before 2015, Dr Fisher stated:

> The overall impacts of the scheme on the farm sector will be largely determined by the actions of our overseas competitors. If those competitors do not introduce equivalent schemes and agriculture is not effectively shielded then a large share of the input cost increases of a scheme will be borne by farmers who will become less profitable relative to what otherwise would have occurred.
>
> In a practical sense there are no commercially available technologies that exist today that could be applied to reduce methane emissions in the extensive rangeland based livestock industries. In addition, it will be challenging to devise a means of determining which producers have actually reduced emissions and which have not so it is likely that the monitoring and enforcement costs in agriculture will be much higher than in other parts of the economy.[51]

Global financial crisis

4.71 In response to term of reference 5.1, the failure to include the impact of the GFC on Australia's capacity to bear the costs of participation in a global ETS, Dr Fisher stated:

> The global financial crisis and its flow-on to the real economy has altered dramatically the context in which Australia will be introducing an ETS and taking, in all likelihood, unconditional action to reduce emissions. By contrast, the Treasury modelling exercise and much of the decision-making on scheme design has assumed, often explicitly, a continuation of strong global and domestic growth, both in the implementation phase of the ETS and in the longer term.

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50 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 51.

51 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 59.

…

> The simple fact is that an ETS imposes a new cost on Australian producers and consumers. A critical concern surrounds the impact of the imposition of this additional cost of production on Australian firms at a time when company balance sheets have deteriorated dramatically, investment plans have been shelved and workers are being dismissed.
>
> Other concerns relate to the impact of the financial crisis on the effective cost of capital. With the Treasury modelling already underpinned by very optimistic cost of capital assumptions relating to new electricity generation plant, it seems naïve to expect new low-emissions technology suppliers to seamlessly replace any short-fall in capacity due to the closure of fossil-fuel based plants.
>
> The global financial crisis should also puncture the air of complacency that has surrounded the financial burden an ETS places on Australian businesses competing in the global marketplace. Against a backdrop of high commodity prices, there was a widely-shared presumption in official circles that the imposition of a carbon price in advance of other competitor nations would have only a minor adverse impact on key Australian export industries.
>
> With commodity prices in some cases down 50 per cent from their peak and export-oriented companies looking to reduce costs wherever possible, measures that cannot be recovered through increased prices establish a significant disincentive to investment in Australia, both in existing operations and in future development as the time of the introduction of the scheme approaches.[52]

4.72 Dr Fisher, addressing term of reference 5.2, the failure to include the impact of the GFC on the rate at which other countries will commence participation in a global ETS, stated:

> In many countries, including Australia, the global financial crisis has reinforced the primacy of economic growth and jobs in national policy debates. While the full economic implications of the crisis remain unclear, there is a strong probability that policy-makers in many jurisdictions will regard global emissions trading based on an internationally binding carbon constraint as a distinctly weak priority until strong economic growth has been restored.
>
> Given (a) their respective shares of global emissions, (b) their assumed early participation in global emissions trading in the Treasury CPRS scenarios (2010 for the US and 2015 for China), and (c) the close strategic link between their likely actions, particular significance surrounds the

52 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 42.

> implications of the current economic crisis for the United States and China in the short to medium term.[53]

Timing of implementation

4.73 In relation to term of reference 11, the economic impact of Australia introducing a poorly designed scheme in 2010, rather than a better designed scheme in 2011 or 2012, taking into account the decisions of major emitters, stated that 'Treasury's modelling of the costs of delay is inadequate'[54] and that 'the key economic and policy issues relating to delay and timing appear not to have been considered. This is a major oversight.'[55] Dr Fisher also stated:

> That major decisions on scheme design and medium-term emissions targets have been taken without any clear knowledge of the post-2012 international climate change architecture suggests the need for further consideration of policy and governance arrangements to ensure the ETS works as intended. In December 2008, EU members agreed to a review of the current EU climate package in March 2010 to reflect the outcome of the Copenhagen conference. A similar review process to take stock of Australia's policy settings should be implemented to ensure the domestic scheme maintains community confidence and credibility.
>
> More generally, it remains a major gap in the national climate change policy approach that Australia's premier, independent structural reform advisory body has not been asked to report formally on the nation's 'most difficult ever regulatory challenge'. The Productivity Commission should be given a brief to assess formally the Government's White Paper proposals against the Government's own Best Practice Regulation Guidlelines.
>
> This would doubtless shed light on improvements to ensure that the ETS is both durable and flexible, able to meets its core objective of supporting least-cost emissions abatement and soundly based in a way that is likely to maintain community support for climate change action over many decades. It would, for example, expose the full costs to businesses and households of the interaction of the ETS and the expanded RET.
>
> The reality is that there is nothing sacrosanct about 2010. If the scheme is rushed or implemented alongside measures that simply add to the costs of mitigation there is a genuine risk that public support for long-term action on climate change will be eroded.[56]

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53 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 43.

54 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 53.

55 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 53.

56 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 54.

Emissions pricing and permit trading assumptions

4.74 In relation to emission pricing and permit trading assumptions Dr Fisher stated:

> More generally, Treasury assumptions virtually guarantee that the permit prices from the modelling are unrealistically low. In addition to the assumption of coordinated global action, the results appear reliant on international climate negotiations delivering 'optimal' institutional and permit trading arrangements.
>
> …
>
> The current architecture for the global carbon market remains a long way short of that envisaged for an effective and efficient international emissions trading regime with developing countries participating actively in the global abatement effort. Major hurdles need to be overcome if Australia is to secure the cost reductions from expanded access to international mitigation through market-based mechanisms such as international emissions trading and the Clean Development Mechanism (CDM).[57]

4.75 Dr Fisher, addressing term of reference 4.7, the consequences of more realistic assumptions concerning low or non-existent barriers to international trade in carbon permits, stated:

> In the efficient global emissions trading scheme assumed by Treasury, there are no barriers to permit trading. In the world as it is likely to unfold the Australian government will be faced with decisions about whether permits or credits generated in particular countries are verifiable and represent a genuine emissions reduction and whether to allow the import of such permits. This may have important implications for both the domestic permit price and the international credibility of the Australian scheme. There appears to have been no analysis of this issue.[58]

Availability of carbon capture and storage technology

4.76 Addressing term of reference 4.6, the consequences of more realistic assumptions concerning commercial scale availability and use of carbon capture and storage technology, particularly in the light of assumptions regarding the path of the carbon permit price, Dr Fisher stated:

> Analysis by Concept Economics of those electricity technology assumptions suggests that in the critical cases of conventional coal and CCS-related technologies capital costs for new plants appear to have been underestimated by up to 50 per cent. In turn, Treasury appears to have underestimated the price at which CCS technology will be viable…

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57 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 22 and 23.

58 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 41.

> The Treasury report also appears somewhat inconsistent on the implications for Australia if CCS technologies fail to materialise at the sorts of emission prices postulated by the modelling. It implies, for example, that the commercial viability of CCS is a key determinant of Australia's emissions falling significantly from around 2035. It also states that the 'global adoption of carbon capture and storage technology will affect significantly the long-term viability of Australia's coal industry', the nation's largest export industry by a considerable margin (Treasury 2008a, p. 144). It nonetheless concludes that whether or not CCS technologies become a commercial alternative for electricity generation 'is not crucial for the aggregate mitigation cost results' for Australia (Treasury 2008a, p. 144).
>
> This depends on one's definition of crucial'. Elsewhere in the report when examining the global role of carbon capture and storage it is stated that: 'Australian mitigation costs are more than the global average. Without carbon capture and storage, Australian mitigation costs rise by 23 per cent in 2050' (p. 127). A figure of 23 per cent may or may not be considered 'crucial', but it is surely significant.[59]

Renewable Energy Target

4.77 Responding to term of reference eight, the economic cost of the government's expanded Renewable Energy Target (RET) compared to the costs of alternative policy approaches, Dr Fisher stated:

> The RET policy places an unnecessary burden on Australian consumers of stationary energy. With an effective ETS in place, it merely imposes additional costs but without any additional abatement. Electricity prices would be higher than otherwise. It also distorts economic decision-making by favouring certain low emission technologies over others, directing investment toward higher cost abatement options and reducing incentives to abate emissions or innovate in ways that do not meet the eligible technology criteria. This is directly contrary to the intended purpose of an ETS based on least-cost, market-driven abatement.
>
> Contrary to the view that a policy such as the RET generates jobs, the overall effect on the economy is less job creation than would otherwise have occurred and a loss of economy-wide output compared with a well-designed ETS alone.[60]

4.78 Dr Fisher stated that his analysis of the additional costs of the RET was broadly consistent with the Treasury analysis. Modelling undertaken by Dr Fisher:

> …found that the interaction of the ETS and the 20 per cent renewable target:

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59 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 40-41.

60 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 48.

- costs Australia $1.8 billion more in 2020 than a pure ETS policy in terms of GNP losses;
- costs Australia $1.5 billion more in 2020 than the ETS in output (GDP) losses;
- results in the loss of an additional 3,600 full time equivalent jobs in 2020;
- causes substantial switching away from gas fired generation compared with an ETS in the order of 12,620GWh per year by 2020;
- results in electricity prices rising at least 6 per cent more than would be the case under an ETS alone - the price of electricity rises 24 per cent under the combined policy approach, and by 18 per cent under an ETS that delivers equivalent emissions abatement.

These results confirm that an ETS alone is preferable to an ETS and a renewables target that results in higher costs and no additional mitigation. If a case could be made for supplementary policies based on persistent market failures in the presence of an ETS, any low emissions policy should be inclusive of all technologies, including clean coal technologies such as CCS.[61]

Issues not considered by the Treasury modelling

Adaptation opportunities

4.79 Dr Fisher, addressing term of reference 13, the adaptation opportunities that could be foregone as a result of implementing a poorly designed ETS, and the economic costs of not implementing these opportunities, stated:

> Treasury's modelling completely ignores adaptation and in doing so ignores the adaptation opportunities that will be foregone as a result of lower GDP. Treasury's modelling therefore ignores a key component of the opportunity costs of reducing emissions and ignores a vital aspect of the policy response to climate change.
>
> National policies geared to adaptation to climate change are just as important as those geared to mitigation. And unlike mitigation, adaptation can effectively be pursued unilaterally (Productivity Commission 2008).[62]

4.80 Dr Fisher also stated that responding to the adaptation challenges:

> …will demand a major national investment over many decades. To the extent that a poorly designed ETS has the potential to weaken Australia's economy, it has a capacity to delay and diminish necessary adaptation responses. Finally, it is the case that climate change will occur everywhere,

61 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, pp 48-49.

62 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 57.

> with many projections suggesting that impacts will be large on the Indian subcontinent, Africa and elsewhere. Australia is therefore likely to be called on to increase support to other countries for climate change adaptation. Again, this can only occur based on a strong domestic economy.[63]

Fixed-price permits versus a price cap on permits

4.81 In response to term of reference 15, the desirability of fixed-price permits, versus a price cap on permits, Dr Fisher stated:

> Treasury's modelling does not analyse or shed any light on the economic effects of a price cap of $40 as opposed to a fixed price or floating price. This is a major oversight.[64]

Financial viability of coal fired electricity generators

4.82 Addressing term of reference 16, the impact of the government's proposed ETS on the financial viability (as opposed to economic viability) of coal-fired electricity generators, both in the short run and long run, Dr Fisher stated that in the Treasury modelling:

> …the financial viability of coal-fired power stations is not considered. This means that the issue of whether the White Paper's proposed assistance is sufficient to maintain the financial viability of these assets – and whether this is consistent with Treasury's assumptions regarding their continued operation - is not examined.
>
> This is yet another element of the government's preferred policy approach that does not appear to have been modelled by Treasury.[65]

Cost of compliance

4.83 Dr Fisher, responding to term of reference 17, the cost of compliance measurement, both in Australia and internationally, stated:

> An emissions permit constitutes a legal right to emit; it is a property right. Enforcing and monitoring these rights requires accurate measurement, which in turn can be difficult and costly. A small percentage of measurement error on a large volume of permits can have significant economic implications for the individuals trading or surrendering those permits. Treasury's modelling does not analyse the economic implications of these issues.

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63 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions,* 30 January 2009, p. 58.

64 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions,* 30 January 2009, p. 60.

65 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions,* 30 January 2009, p. 61.

> The Treasury modelling also ignores the compliance costs of the scheme. The design of penalties for non-compliance influences the incentive to comply. The nature of the scheme's regulatory and enforcement regime will determine the probability of detection and punishment. This, together with the design of punishments – the size of fines and imprisonment terms - will determine the expected punishment, which is the effective 'price' of non-compliance.
>
> …
>
> Treasury's modelling appears to have ignored these important institutional and regulatory features.'[66]

White Paper policy

4.84 Addressing term of reference 18, the economic and environmental implications of the White Paper, Dr Fisher stated:

> The Treasury document considers four policy scenarios. However, the policy proposed in the White Paper is that in the absence of a comprehensive global agreement Australia will undertake unilateral action to attempt to achieve a 5 per cent reduction in emissions on 2000 levels by 2020.
>
> Treasury modelling does not include this unilateral scenario. As already mentioned the Treasury CPRS -5 (5 per cent reduction) scenario is based on the assumed multi-staged introduction of equivalent climate change policies in overseas countries.
>
> Moreover, Treasury's modelling assumes 'shielding' for EITE industries according to the proposed scheme outlined in the Green Paper. But the White Paper proposes a different, more complicated shielding scheme. Treasury's modelling, published prior to the release of the White Paper, does not analyse this revised shielding scheme.
>
> Finally, as noted earlier, the White Paper proposes a permit price cap in the first five years of the scheme. Treasury's modelling, published prior to the release of the White Paper, does not analyse the economic effects and implications of this policy.
>
> In summary, the Treasury modelling does not actually model the government's preferred policy approach. A complete analysis and assessment of the economic costs and benefits of the government's preferred policy approach has yet to be published by Treasury.[67]

66 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions,* 30 January 2009, p. 62.

67 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions,* 30 January 2009, p. 63.

Recommendations

4.85 Following analysis of the modelling undertaken by the Department of the Treasury, Dr Fisher made the following recommendations:

- that given indications of the worst global economic crisis in more than half a century, Treasury provide stakeholders with updated GDP forecasts from the IMF, OECD and Consensus Economics so that these can be compared with those used in the climate change modelling;
- that full model documentation and databases together with any additional scenario implementation code be released so that stakeholders can better understand the full implications of the Treasury modelling;
- that ETS governance arrangements incorporate a review process to confirm that the Treasury modelling results were reasonably accurate. This process should specify the way that any unintended consequences in ETS performance can be quickly corrected;
- that further analysis be done on the short- and medium-term impact of an ETS on the electricity generation sector and other emissions intensive industries that may be subject to significant structural adjustment particularly as it affects regional Australia and that such modelling be done using tools that take into account the lumpy nature of investment and the likely timing of the retirement of large capital assets;
- that additional sensitivity analysis be conducted around at least one policy scenario involving slow, fragmented and partial global action in the medium to long term;
- that additional sensitivity analysis also be conducted around less optimal international permit trading assumptions and the availability of Clean Development Mechanism (CDM) certificates;
- that a formal review follow the UN Conference of the Parties in Copenhagen in late 2009 to take stock of the likely configuration of global climate action in the next decade and Australia's actions in that context (this would mirror the review mechanism agreed by European Union leaders at their summit in December 2008);
- that Australia undertake a significant, pre-emptive diplomatic effort in Europe and the United States in order to counter the possible imposition of border barriers in the likely event that global action on climate change is slow, partial and fragmented;
- that the Productivity Commission formally review the Government's proposed ETS against its Best Practice Regulation Guidelines.[68]

68 Dr Brian Fisher, Concept Economics, *A Peer Review Of The Treasury Modelling Of The Economic Impacts Of Reducing Emissions*, 30 January 2009, p. 5.

Concerns about the Department of the Treasury modelling

4.86 The committee received evidence from a number of witnesses regarding concerns about the modelling undertaken by the Department of the Treasury. The main areas of concern were:

- assumptions regarding global action;
- failure to include the impact of the GFC;
- overstating the assistance to be provided to EITEs;
- failure to model more scenarios;
- optimistic assumptions regarding the impact of the CPRS on the asset value of coal fired power stations; and
- lack of modelling regarding the impact of the CPRS on regional areas.

4.87 Other issues raised about the modelling include the underestimation of price increases, failure to balance the costs on the economy of reducing emissions with the benefits of avoiding climate change, the assumption of full employment, failure to take account of the specific circumstances of the Western Australian electricity market and failure to recognise the costs of the people adjusting to the changed economy.[69]

4.88 The conclusion reached by a large number of witnesses that commented on the modelling was that the limitations of the modelling resulted in the modelling having underestimated the impact of the CPRS on the economy, particularly during the transitional period.

Assumptions regarding global action

4.89 The most commonly raised concern regarding the modelling undertaken by the Department of the Treasury was concerning the assumptions regarding global action. Organisations which raised this concern include the Chamber of Commerce and Industry of Western Australia, the Cement Industry Federation, the Construction, Forestry, Mining and Energy Union, the Minerals Council of Australia, ExxonMobil Australia, the Australian Chamber of Commerce and Industry and BlueScope Steel.

4.90 Specifically, Mr Mitchell Hooke from the Minerals Council of Australia, stated:

> …the real issue that we had with Treasury modelling was the assumption that the impact on Australia's international competitiveness would be negated by the prospect of a global protocol, and I think the words were

69 Mr Tony Westmore, Senior Policy Officer (Electricity), Australian Council of Social Service, *Committee Hansard,* 19 February 2009, p. 3; Mr Owen Pascoe, Climate Change Campaigner, Australian Conservation Foundation, *Committee Hansard,* 2 February 2009, p. 83; Mr Daniel Price, Managing Director, Frontier Economics, *Committee Hansard,* 2 April 2009, pp 16 and 19.

> 'other countries taking comparable action to Australia's emissions trading scheme by 2010 for developed economies, by 2015 for China and by 2020 for India'.
>
> That is, quite mildly, an heroic assumption…
>
> That is the area of modelling that has caused us great disquiet.[70]

4.91 Mr Gregory Evans from the Australian Chamber of Commerce and Industry stated:

> Our principal area of concern in relation to the modelling was that it assumed that other countries would pretty much join the scheme initially, or soon thereafter, and in fact developing countries would also do that in a staged approach. It would have been helpful, I think, in terms of assessing the impact of the scheme, to perhaps model, or at least have some scenario or sensitivity analysis on various levels of uptake internationally and what that effect might be on Australia, because obviously the more slowly it takes other countries to join, the higher the potential cost would be on the Australian economy. So we did make the general point that there should have been a go-alone or a staged modelling as other countries may have gradually joined the emissions trading scheme.[71]

4.92 When challenged about the assumptions contained in the modelling regarding the actions of other countries Ms Quinn from the Department of the Treasury stated the modelling included:

> …the more realistic scenarios relative to the Garnaut review with the multistaged process of China taking action from 2015, India taking action from 2020 and other low income developing countries not taking any action until 2025, that multi-staged stepping out was judged to be more realistic in the context of the international negotiations.[72]

Failure to include the impact of the global financial crisis

4.93 Another commonly raised issue regarding the modelling was that of the failure to consider the impact of the GFC. Ms Quinn from the Department of the Treasury explained the failure to include the impact of the GFC as follows:

> The economic analysis modelling was undertaken over 18 months. The report was released on 30 October. There is an issue of timing in terms of getting modelling results and getting a report ready for a particular point in time. There was no explicit decision to exclude the implications of the global financial crisis. It was judged in the context of the knowledge at the time that it would not materially affect the analysis in the report.

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70 Mr Mitchell Hooke, Chief Executive, Minerals Council of Australia, *Committee Hansard*, 8 December 2008, p. 6.

71 Mr Gregory Evans, Director Economics, Australian Chamber of Commerce and Industry, *Committee Hansard*, 8 December 2008, p. 59.

72 Ms Quinn, Department of the Treasury, *Committee Hansard*, 19 November 2008, p. 62.

> There is an explanation in the executive summary to that point. What is important for greenhouse gas emissions over the long run is the long-run trends in the Australian economy and the world economy, and cyclical ups and downs around that long-run trend are important in the context of the macroeconomic stability and macroeconomic cycle. However, in the context of looking at trajectories and targets over 20, 30, 40 and 50 years, we do not feel that it is material to the analysis in the report.[73]

4.94 Ms Quinn provided further explanation that short term economic changes are not likely to significantly affect long term outcomes:

> What typically happens is that economic growth goes below trends in response to a shock. There is a reaction at both the policy level and within companies, and the response is to go above trend. To the extent that that historical behaviour continues into the future, any cyclical deviation around the trend will affect in the near term possibly, one, two, three, four, five years. Looking at the 2020 targets and the 2050 targets and at the action to reduce greenhouse gas emissions, it is not clear, and certainly the judgement was that it is not material to the analysis in the report.[74]

4.95 Mr Gordon Keen from ExxonMobil Australia also expressed his view of the need to consider the long term:

> Our industry, and our company in particular, looks very much at a longer term view. Whilst it is unfortunate that there is a downturn now, and no doubt it will have impacts in the near future and we hope they are not protracted, the way we work in our company is very much long term. We average prices out and we try not to be influenced in decision making by shorter term factors. Despite the size of those factors now, which may actually be quite large, nonetheless we do look to the longer term. That is because of the size and scale of the investments that we make.[75]

4.96 Mr Andrew Canion from the Chamber of Commerce and Industry of Western Australia stated why it would be useful for the GFC to be factored in to the Treasury modelling:

> The global financial crisis is important, and it would be helpful to see that factored into the modelling. We understand that Treasury is saying that it is a longer term model that they have used, so short-term fluctuations may not influence it. However, we believe it would probably change the base. The starting point essentially becomes lower. We think it would be worthwhile and beneficial to the Australian public to see the results of that modelling undertaken.[76]

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73 Ms Quinn, Department of the Treasury, *Committee Hansard*, 19 November 2008, p. 63.

74 Ms Quinn, Department of the Treasury, *Committee Hansard*, 19 November 2008, p. 64.

75 Mr Gordon Keen, ANZ GHG Issue Manager, ExxonMobil Australia, *Committee Hansard*, 8 December 2008, p. 47.

76 Mr Andrew Canion, Senior Adviser, Industry Policy, Chamber of Commerce and Industry of Western Australia, *Committee Hansard*, 17 November 2008, p. 13.

4.97 Mr Tony Westmore from the Australian Council of Social Service agreed that 'the Treasury modelling ought to be revisited in light of the global financial crisis.'[77] Similarly, Professor McKibbin agreed that it would be useful for Treasury to model the impact of the GFC.[78]

4.98 Mr David Pearce from the Centre for International Economics also stated that further modelling should be undertaken to take account of the GFC:

> I certainly think it is worth modelling. You would model this as alternative baselines or alternative reference cases. It is certainly worth modelling reference cases where you have declines in output of our major partner countries and Australia. Actually, it is hard to predict in advance what the results of that might be on the cost implications of the CPRS. That is exactly why it is worth modelling.[79]

Overstating the assistance to be provided to emissions intensive trade exposed industries

4.99 Representatives from BlueScope Steel argued that:

> Although the headline rate of assistance for integrated iron and steel makers in the white paper is 90 per cent free permits, the effective rate of assistance is considerably lower. In fact, it could be as low as 64 per cent as our total scope 1, 2 and 3 emissions are taken into account. This is because significant parts of our business will be excluded from assistance under the white paper proposals. At $25 a tonne of CO2 equivalent, the cost of the CPRS for scope 1 and 2 emissions in the first year alone is tens of millions of dollars, after taking into account the government's proposed assistance. Adding scope 3 costs would see this increase even further.[80]

4.100 BlueScope Steel officers further explained:

> …the 90 per cent headline number does not apply to the whole iron and steel industry. The federal government modelling that was done assumed that it did, but it actually only applies to the really intensive steelmaking operation, where you are dealing with red-hot liquids and red-hot materials. All of the downstream processes, which is a very substantial operation—where steel is rolled and shaped and galvanised and painted and formed and turned into marketable products—will receive no assistance. So when you

77 Mr Tony Westmore, Senior Policy Officer (Electricity), Australian Council of Social Service, *Committee Hansard*, 19 February 2009, p. 12.

78 Professor McKibbin, *Committee Hansard*, 19 February 2009, p. 77.

79 Mr David Pearce, Executive Director, Centre for International Economics (CIE), *Committee Hansard*, 2 April 2009, p. 33.

80 Mr Noel Cornish, Chief Executive, BlueScope Steel, *Committee Hansard*, 1 April 2009, p. 28.

> take into account those emissions, plus the emissions from the really intensive part, that dilutes the amount of compensation.[81]

4.101 BlueScope Steel argued that the inaccurate assumptions in the Treasury modelling such as the one explained above indicate that the results of the modelling underestimate what would actually occur under the CPRS.[82]

4.102 The committee put a summary of the above point made by BlueScope Steel to Dr Fisher and asked for his view. Dr Fisher agreed that the assumption of 90 per cent free permit allocation as used in the modelling was an overly generous assumption.[83]

Failure to model more scenarios

4.103 Mr Pearce from the Centre for International Economics argued that it would be advantageous to model more scenarios. He stated:

> …models are a very powerful tool in understanding the trade-offs that face us. Given that this is something totally new—this is not a policy we have contemplated before—models are one of the few tools we have for peering into the alternatives that face us. But models are not particularly good at forecasting. I would not claim that economic models can forecast the future very well. What they are good at and what models like MMRF-Green and the other models that the Treasury has used in their analysis is in comparing alternatives are good at is in using the same basic model configuration to run a simulation of the CPRS as it stands and compare that with a simulation of, for example, a CPRS in which the auctioned revenue is used to reduce other taxes or to run a simulation of the CPRS as it stands in comparison with the output based allocation approach that Danny Price just talked about, or to compare the CPRS as it stands with a number of other alternatives. That exercise of comparing viable alternatives using a quantitative framework I believe will give a much better understanding than we currently have of the trade-offs that have been made in this policy at the moment.[84]

He added:

> [Treasury] have not modelled very many scenarios—they have modelled one scenario of global contributions to emissions. I think it is very important to model different scenarios.[85]

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81 Mr Alan Thomas, General Manager Engineering, Technology and Environment, BlueScope Steel, *Committee Hansard*, 1 April 2009, p. 36.

82 Mr Cornish, BlueScope Steel, *Committee Hansard*, 1 April 2009, p. 36.

83 Dr Brian Fisher, *Committee Hansard*, 2 April 2009, p. 61.

84 Mr Pearce, CIE, *Committee Hansard*, 2 April 2009, p. 26.

85 Mr Pearce, CIE, *Committee Hansard*, 2 April 2009, p. 27.

Optimistic assumptions regarding the impact of the CPRS on the asset value of coal fired power stations

4.104 Electricity generators raised concerns about the modelling associated with the impact on the asset value of existing assets. Mr John Boshier from the National Generators Forum stated:

> Treasury modelling conducted for the white paper is optimistic in its assumptions about the potential impact of the CPRS on existing assets in the coal fired electricity generation sector…The Commonwealth government commissioned three different models from MMA, ACIL and ROAM to examine the wealth impacts of a CPRS on the coal fired electricity generation sector. It should be noted that economic modelling of the electricity generation sector is highly sensitive to fuel costs, demand growth and the volume of international abatement credits. MMA results were the lowest in terms of the negative wealth impacts on the coal fired electricity generation sector, followed by ROAM, with ACIL reporting the highest negative wealth impacts.
>
> But it appears that only one of these models, MMA, was used as part of Treasury's broader modelling of the CPRS impact. It seems that little if any sensitivity analysis was conducted, emphasising the need for caution when designing a public policy response to such significant issue…The NGF has engaged Intelligent Energy Systems or IES to conduct a further assessment of the white paper modelling results. The IES market based modelling was strongly consistent with results from the ROAM and ACIL models and suggests that the MMA modelling is based on highly optimistic assumptions. IES estimated a negative wealth impact of $12 billion. This is well in excess of the $3.5 billion proposed in the CPRS white paper.[86]

4.105 A similar view was expressed by Griffin Energy:

> The Treasury modelling forecast for asset value losses, whether intentional or not, is conservative compared to other credible industry modelling. Understating the potential losses that might be expected by rational investors only serves to undermine the credibility of the Electricity Sector Adjustment Scheme in mitigating the perception of regulatory risk.[87]

Lack of modelling regarding the impact of the CPRS on regional areas

4.106 The majority of witnesses from regional areas that commented on the Treasury modelling expressed that modelling should be undertaken to determine the impact of the CPRS on regional areas. For example Mr Arthur Rorris, Secretary of the

86 Mr John Boshier, Executive Director, National Generators Forum, *Committee Hansard*, 2 February 2009, p. 4.

87 Mr Shane Cremin, Market Development Manager, Griffin Energy, *Committee Hansard*, 18 February 2009, p. 2.

South Coast Labour Council, supported the release of as much information as possible regarding the impact of the scheme on jobs and members.[88]

4.107 Mr Christopher Fitzhardinge from the South West Group, which is a voluntary regional organisation of six councils in the south west metropolitan region of Perth, stated:

> There are a number of statements which have been made in the documentation which are not followed through. Firstly, it is indicated in many of the Treasury and Department of Climate Change publications that regions will be significantly impacted by policy changes on energy, but there is no region-by-region analysis of the impacts, nor is there any assessment of support to individual regions to be able to offset any impacts that may arise from the federal government's change in energy policy.
>
> …
>
> …you need to look at a region-by-region approach and not aggregate up the impacts. Australia is made up of separate regions that make significant contributions to the Australian economy and treating the Australian economy as a homogenous block does not fairly reflect impacts on Western Australia.[89]

He continued that the Treasury modelling:

> …needs to have greater detail on its regional impacts because in some cases it may be regions that need to be compensated rather than individual industries. The impacts, which may appear small on a national scale, may be significant locally.[90]

4.108 The Mackay Regional Economic Development Corporation, Mackay Area Industry Network, the Gladstone Chamber of Commerce and Industry and the Gladstone Area Promotion and Development Limited also expressed the need to conduct modelling aimed at determining the impact of the CPRS on regional areas and then use this to inform the local people of the likely impacts.

4.109 For example, Mr Glenn Churchill, Chief Executive Officer of Gladstone Area Promotion and Development Limited stated:

> …we would be certainly pleased and encouraged if the Senate inquiry was to determine that there could be some economic modelling from it. I think

88 Mr Arthur Rorris, Secretary, South Coast Labour Council, *Committee Hansard*, 1 April 2009, pp 22-23.

89 Mr Christopher Fitzhardinge, Director, South West Group, *Committee Hansard*, 17 November 2008, pp 89 and 91.

90 Mr Fitzhardinge, South West Group, *Committee Hansard*, 17 November 2008, p. 99.

> that is what everybody is looking at…I think people just want to know how this will affect them financially.[91]

4.110 The committee heard evidence from Mr Daniel Price noting that Frontier Economics has conducted modelling which shows the greatest impact of the proposed scheme will be on regional areas across Australia. Mr Price stated:

> I heard some comments about the regional state effects not being robust, which I thought was curious. The model that they used is something called MMRF-Green, which is the same model that we used. We operated the model using the same people that the Treasury used. In fact, Brian Parmenter, who works for Frontier Economics, is one of the builders of that model, so he knows how to use it. That model in fact builds up a picture of the economy from a state level, so it is impossible to say that state levels are unreliable, because it aggregates those results. The use of these models to dig down into regional economies is pretty common practice. Governments all over Australia use this model to look at regional effects. So it is not true that these results are not robust. That is not to say that any macroeconomic model is perfect; they are far from it; they are a very gross simplification of how an economy works.[92]

4.111 When asked about the lack of published Treasury modelling at a regional level, Ms Quinn stated:

> There are some issues about using simplistic reporting measures of regions. The MMRS [sic] model that was used by Frontier Economics and has been developed by the centre of policy studies at Monash University does not have a comprehensive analysis at a regional level. It does not allow for abatement opportunities at a regional level. It does not allow for adjustments between capital and labour at a regional level. It does not actually do any modelling at a regional level. It simply reports on the basis of simplistic, historical relationship results for regions. So Treasury did not consider that analysis to be robust enough to actually use in a modelling exercise.[93]

4.112 Ms Quinn also stated that 'Unfortunately, there are no tools available for us to easily model regional implications.'[94] Further, Ms Quinn stated:

> And I would restate my previous comment that the Australian Treasury did not consider the regional reporting in the MMRF model to be of a robust nature and, therefore, we did not judge that it would be in the public interest for that information to be provided, that the underlying economic modelling is not done at a regional basis in the MMRF model. It is simply a reporting

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91 Mr Glenn Churchill, Chief Executive Officer, Gladstone Area Promotion and Development, *Committee Hansard*, 7 April 2009, p. 34.

92 Mr Price, Frontier Economics, *Committee Hansard*, 2 April 2009, p. 14.

93 Ms Quinn, Department of the Treasury, *Committee Hansard*, 2 April 2009, p. 69.

94 Ms Quinn, Department of the Treasury, *Committee Hansard*, 2 April 2009, p. 69.

> metric based on very simple assumptions and they are a very, very broad brush. They do not take account of all of the things that we know are important for thinking about the economic costs of mitigation.[95]

Committee comment

4.113 The committee is of the view that the modelling undertaken by the Department of the Treasury, as published, is flawed and inadequate and the government should direct the Treasury to undertake further modelling as recommended below.

Recommendation 7

4.114 The committee recommends that the Senate not consider any legislation to give effect to the government's proposed CPRS until the government has fully complied with the relevant order of the Senate of 11 March 2009 and has released all of the information currently being kept secret.

Recommendation 8

4.115 The committee recommends that the government direct the Department of the Treasury to undertake and publish modelling of the impact of the proposed CPRS:

- **(a) assuming little or no action by Australia's major competitors to reduce greenhouse gas emissions;**
- **(b) taking account of the economic conditions due to the global financial crisis;**
- **(c) on industry at a sectoral level, including the effective rates of compensation to industry;**
- **(d) on regional areas of Australia; and**
- **(e) in comparison with modelling of a variety of viable alternative policy scenarios aimed at Australia contributing to the reduction of greenhouse gas emissions.**

95 Ms Quinn, Department of the Treasury, *Committee Hansard*, 2 April 2009, p. 69.