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Report 38

The Kyoto Protocol – Discussion Paper

Joint Standing Committee on Treaties

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Chairman's Foreword

It is clear that there are many difficult issues associated with the design, scope and implementation of the Protocol that have yet to be resolved.

Until these issues are resolved it will not be possible to predict accurately the domestic impact of the emissions targets specified in the Protocol.

There are differences of opinion within the community about whether ratification of the Protocol will ultimately prove to be in the national interest and about the position that the Australian Government should adopt in the continuing international negotiations about the Protocol.

While these differences of opinion are also evident amongst committee members, there is consensus that the final decision about ratification should be withheld until these unresolved issues are settled.

We are also of the view that the Australian Government should continue to play an active role in international negotiations about these issues.

The Government should continue to put the national interest first in these negotiations. This means ensuring that:

- Australia's economic growth, employment and industry competitiveness are not jeopardised;
- any abatement measures agreed to are cost-effective from a domestic perspective; and
- any agreed abatement measures are environmentally effective.

We look forward to continuing our involvement in the public debate about the Protocol leading up to and following the second session of the sixth Conference of Parties.

ANDREW THOMSON, MP
Chairman



Membership of the Committee

Chair The Hon Andrew Thomson MP

Deputy Chair Senator Barney Cooney

Members	The Hon Dick Adams MP	Senator Andrew Bartlett
	The Hon Bruce Baird MP	Senator Helen Coonan
	Kerry Bartlett MP	Senator Joe Ludwig
	Anthony Byrne MP	Senator Brett Mason
	Kay Elson MP	Senator the Hon Chris Schacht
	Gary Hardgrave MP	Senator Tsebin Tchen
	De-Anne Kelly MP	
	Kim Wilkie MP	

Committee Secretariat

Secretary Grant Harrison

Inquiry Secretary Susan Cardell

Administrative Officer Lisa Kaida



Terms of reference

The Treaties Committee shall inquire into and report on:

- The implications for Australia proceeding or not proceeding to ratifying the Kyoto Protocol and meeting its target emissions levels by 2008 with regard to anticipated and/or predicted economic, environmental and social outcomes both nationally and in specific regional areas.
- The veracity of conflicting current scientific theories on global warming and any solutions proposed for it.
- What definitions and criteria Australia should develop and actively pursue in its national interest with regard to:
 - ⇒ grandfathering,
 - ⇒ trading credits,
 - ⇒ carbon credits,
 - ⇒ sequestration,
 - ⇒ revegetation,
 - ⇒ land management, and
 - ⇒ definitions (eg “forest”).
- The economic, environmental and social implications of a punitive approach to any domestic regulation of industry including such proposals as a carbon tax and an incentive-based approach.

Introduction

Our review

- 1.1 Much has been said and written about the Kyoto Protocol to the United Nations Framework Convention on Climate Change since it was adopted in 1997.
- 1.2 Advocates of the Protocol have argued that it represents an important step towards successfully managing the impact of global warming, a potentially catastrophic environmental problem.
- 1.3 Opponents have argued that the costs of meeting the targets described in the Protocol are too great or that they are not shared in a fair and reasonable manner by countries around the world.
- 1.4 Some sceptics have questioned the science of climate change: with some doubting that global warming has occurred and accusing doomsayers of exaggerating its consequences, and others claiming that (if warming has occurred) it is not primarily the product of human activity but may have been caused by natural atmospheric or geological variations.
- 1.5 As demonstrated by the stalled conference of parties held in The Hague in November 2000, these debates are likely to continue for some time yet.
- 1.6 Because of the controversial nature of the Protocol, we thought it would be appropriate to begin our treaty review process earlier than we would usually.
- 1.7 The Parliament appointed the Treaties Committee as a means of exposing proposed treaty actions to public review before a final decision is made by the Government about whether Australia should be bound to the terms of

a treaty. The test we apply to every treaty that comes before us is simple: is it in the national interest for Australia to bind itself to the proposed treaty.

- 1.8 Over the last seven months, we have sought submissions from members of the public, from academics, from business and non-government organisations and from government representatives on whether Australia should ratify the Protocol.¹
- 1.9 These submissions have helped us map out the key issues that need to be addressed in order to reach a final decision about whether ratification is in the national interest.
- 1.10 Some of these issues are the subject of continuing scientific and economic analysis and international negotiation. Many of them are central to the final design and implementation of the Kyoto Protocol.
- 1.11 In our view it would be imprudent to provide definitive advice to Parliament on whether Australia should ratify the Protocol until these issues are resolved.
- 1.12 However, we do believe it appropriate to present a discussion paper at this time, summarising the main issues that have been presented in evidence to our inquiry.
- 1.13 As the Kyoto Protocol is an agreement of such significance, globally and locally, we consider it important to take every opportunity to promote community understanding of and debate on the various complex issues involved.
- 1.14 Moreover, we believe it appropriate to indicate to the Government and the community the issues on which further work is needed before the national interest analysis can be finalised.
- 1.15 We will consider these issues again in a second report we propose to present after the next conference of parties, scheduled for July this year.

¹ Appendix B contains a description of our inquiry process, including lists of submissions, exhibits and witnesses at public hearings.

Mapping the national interest

- 1.16 In considering whether it would be in the national interest to ratify the Kyoto Protocol we first sought expert opinion on a number of threshold questions:
- is there conclusive evidence that the world's climate has changed over the last hundred years;
 - is there conclusive evidence about what is causing climate change; and
 - will the measures provided for by the Kyoto Protocol stop global warming?
- 1.17 Chapter 2 contains a discussion of these issues, with the aim of clarifying the rationale and scope of the Protocol, while in Chapter 3 we begin to outline some of the main costs and benefits that ratification of the Protocol would have for Australia.

Climate change and Kyoto

Introduction

- 2.1 This chapter considers some of the threshold issues in the debate about the Kyoto Protocol:
- is there conclusive evidence that the world's climate has changed over the last hundred years;
 - is there conclusive evidence about what is causing climate change; and
 - will the Kyoto Protocol, if it enters into force, stop global warming?

The science of climate change

- 2.2 Much of the evidence we received focussed on the accuracy or otherwise of the scientific basis for claims that the earth's temperature has risen over the last 100 years.

International Panel on Climate Change

- 2.3 Since 1988, international research in the field has been coordinated and assessed by the International Panel on Climate Change (IPCC).
- 2.4 The IPCC has produced a series of reports summarising current scientific knowledge on climate change, with the aim of improving understanding of the risks associated with climate change and providing information to governments and policy makers around the world.

- 2.5 The IPCC's First Assessment Report, published in 1990, concluded that:
- emissions resulting from human activities were substantially increasing the atmospheric concentrations of greenhouse gases which resulted in additional warming of the Earth's surface;
 - over the previous 100 years, the global mean surface temperature had increased by between 0.3 and 0.6°C and the global sea level had risen between 10 and 20 cm;
 - the global mean temperature would increase by about 3°C by 2100; and
 - the global sea level would rise by about 65cm by 2100.¹
- 2.6 This report played an important role in encouraging governments around the world to negotiate the United Nations Framework Convention on Climate Change (UNFCCC), which came into force in May 1992. Australia is a party to the UNFCCC.
- 2.7 In its Second Assessment Report, released in 1995, the IPCC refined some of its earlier conclusions, reporting that:
- the global mean temperature would increase by about 2°C by 2100; and
 - the global sea level would rise by about 50cm by 2100.²
- 2.8 The Second Assessment Report was a key input to the international negotiations leading up to the conference of UNFCCC parties held in Kyoto in December 1997.
- 2.9 The IPCC's Third Assessment Report, published in January 2001, confirmed that:
- the Earth has warmed by between 0.4 and 0.8°C over the last century, with the 1990s being the hottest decade this century;
 - the global mean surface temperature would increase by about 1.4 to 5.8°C by 2100; and
 - global mean sea level would rise by 9 to 88 cm by 2100, caused primarily by thermal expansion of the oceans and melting of glaciers.³
- 2.10 The Third Assessment Report stated 'there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities'. The introduction to the Third Assessment Report's
-

1 IPCC, *Climate Change: The IPCC Scientific Assessment*, 1990.

2 IPCC, *IPCC Second Assessment: Climate Change 1995*, p. 5.

3 IPCC Working Group 1 Third Assessment Report, Summary for Policymakers, 21 January 2001.

Summary for Policymakers notes that the findings of the report have been supported by 123 Co-ordinating Lead Authors and Lead Authors, 516 Contributing Authors, 21 Review Editors and 300 Expert Reviewers, and delegations of 100 IPCC member governments, including Australia.

2.11 The work and assessments of the IPCC were also endorsed in much of the evidence to our review.

2.12 The Commonwealth Scientific and Industrial Research Organisation (CSIRO) said that:

CSIRO scientists actively participate on the Intergovernmental Panel on Climate Change and believe that at the time the second assessment report represented the best overall available assessment in terms of consideration of all scientific viewpoints, the comprehensiveness of its coverage and its balance between peer reviewed input and currently active research.⁴

2.13 The Bureau of Meteorology (BoM) supported the IPCC's assessments, commenting that:

There is now wide acceptance that the world has warmed significantly over the past century. This finding is based not just on the direct instrumental record of the land surface and of the oceans but is confirmed and extended back further in time by a range of independent proxy indicators of temperature, such as ice cores, tree rings and coral cores.⁵

2.14 Further support was expressed by:

- the Antarctic Centre for Cooperative Research ('numerical modelling by the CRC supports the considered position of the IPCC in relation to future increases in average temperatures and sea level'⁶);
- Professor David Karoly, Director of the Centre for Dynamical Meteorology at Monash University ('there is almost unanimous expert scientific agreement that the observed global warming over the last 100 years is real and is due, at least in part, to increasing greenhouse gases in the atmosphere. There is substantially stronger evidence now of a human influence on climate than at the time of the second assessment report of the IPCC in 1995'⁷);

4 Dr Mitchell (CSIRO), *Transcript of Evidence*, 13 September 2000, p. TR38.

5 Dr Susan Barrell, (BOM), *Transcript of Evidence*, 13 September 2000, p. TR2.

6 Antarctic CRC, *Submission No. 79*.

7 Prof. David Karoly, *Transcript of Evidence*, 13 September 2000, p. TR21.

- Professor Ian Lowe, School of Science at Griffith University ('there is no longer serious disagreement in the science community with the view that greenhouse gas emissions are changing the global climate and demand our attention'⁸);
- Professor David Green, Chairman, Greenhouse Science Advisory Committee ('the Earth's atmosphere is changing composition due to human activities ... all science-based models predict global warming in response to increased concentrations of greenhouse gases'⁹); and
- the Research School of Earth Sciences, Australian National University ('we are of the firm view that 20th century global warming and sea-level rise are observed and, on scientific grounds, attributable to changes in the Earth's atmospheric composition caused by human activities'¹⁰).

Critics of the IPCC

- 2.15 We did receive some evidence critical of the IPCC: questioning both its processes and its findings.
- 2.16 Professor Richard Lindzen, a Professor of Meteorology from the Massachusetts Institute of Technology, questioned the idea of 'scientific consensus' of reports of the IPCC. He claimed that the IPCC has hundreds of scientists, each working on a couple of pages, with none ever polled to assent to the summary. This, he claimed, is used as a bludgeon for questioning. Further, he claimed that scientists permit this to happen for their own self-preservation and to maintain an interest in the science.¹¹
- 2.17 We heard arguments that the IPCC is not representative of all relevant climate change science and that atmospheric science has taken most of the funding for climate change. It was put to us that other science communities, such as geomorphology, glaciology, hydrology and the solar community do not receive comparable levels of funding.¹² Dr Sonja Boehmer-Christiansen, a political scientist from the University of Hull, UK claimed that advice from the IPCC is biased in favour of emission

8 Prof. Ian Lowe, *Transcript of Evidence*, 18 October 2000, p. TR251.

9 Prof. David Green, *Submission No. 58*, p. 5.

10 Research School of Earth Sciences, ANU, *Submission No. 109*, pp. 5-6.

11 Prof. Lindzen, *Transcript of Evidence*, 3 November 2000, p. TR287.

12 Bob Foster and Dr Rowden-Rich, *Transcript of Evidence*, 13 September 2000, p. TR75; Dr Sonja Boehmer-Christiansen (The Lavoisier Group), *Transcript of Evidence*, 13 September 2000, p. TR50

reduction because it is a body with advice coming from government research institutions which require funding.¹³

- 2.18 Some scientists and individuals dispute the claims of the IPCC about current and future climate change.¹⁴ Within Australia, the Lavoisier Group, headed by former Hawke Government minister, the Hon Peter Walsh, is a group which opposes the IPCC's conclusions about climate change and the Kyoto Protocol. It rejected the IPCC estimations of climate change claiming that the figures had reduced significantly over the last ten years.¹⁵ Dr Brian O'Brien, another critic of the IPCC, stated:

Scientific uncertainty is much greater than the outcome of the Kyoto Protocol. Alternatively, you could phrase it, 'Don't bother ratifying the Kyoto Protocol; wait for the scientists to achieve even more reduction in global warming.'¹⁶

- 2.19 Some opponents of the Protocol claim that not only are the forecasts of greenhouse impacts on temperature and sea-level rise exaggerated, but that there is a disturbing pattern of scientists first predicting impending doom then later revising their opinions.¹⁷
- 2.20 In opposition to the majority view that climate change is due to human influence, some witnesses suggested that climate change is a consequence of natural variability. For instance, Mr Bob Foster, a consultant in energy economics and a director of the Lavoisier Group, stated that IPCC models misrepresent climate change because they do not allow for the inertial impacts of ice surges into the sea that redirect oceanic heat and they have overestimated the warming effect of carbon dioxide and the cooling effect of sulphate aerosols. He claimed that the warming in the 20th century was the outcome of cyclical natural influences.¹⁸
- 2.21 Professor Lindzen also claimed that the influence from gases that humans put into the atmosphere are not competitive with natural variations. He stated that the IPCC's atmospheric models are problematic as they do not include all known data and all data is not known. Mr Murray Rowden-Rich agreed that the world is too complex for models to reflect reality and

13 Dr Sonja Boehmer-Christiansen (The Lavoisier Group), *Transcript of Evidence*, 13 September 2000, p. TR50.

14 For example William Hughes, *Submission No. 80*; John Daly, *Submission No. 44*, p. 2.

15 Peter Walsh (Lavoisier Group), *Transcript of Evidence*, 27 September 2000, p. TR 152.

16 Dr O'Brien, *Transcript of Evidence*, 3 November 2000, p. TR270.

17 For example: Dr O'Brien, *Submission No.* , p. ; Robert Foster, *Transcript of Evidence*, 13 September 2000, pp. TR 74; and Hon. Peter Walsh (Lavoisier Group), *Transcript of Evidence*, 27 September 2000, p. TR 153.

18 Robert Foster, *Transcript of Evidence*, 13 September 2000, pp. TR 63-65 and *Submission No. 86.1*, p. 12.

claimed that that sea level rise is inevitable due to an internal collapse in the Antarctic icesheet.¹⁹

- 2.22 Professor Lindzen described observations he made on the effect that water vapour in clouds has on temperature. He referred to this as the iris effect: 'increasing temperature would give rise to increasing clear area and more cooling, while decreasing temperature would give rise to decreasing clear area and less cooling'. He claimed that existing models do not include the iris effect which could reduce predictions of global warming.²⁰

Other views on science

- 2.23 As well as receiving submissions from those who supported the IPCC's assessments and from the IPCC critics, we received a number of submissions from organisations taking a middle path.
- 2.24 The Australian Industry Greenhouse Network (AIGN), for example, stated that although there are uncertainties in the science of climate change, there is sufficient reason to be concerned that increasing levels of anthropogenic greenhouse gas will lead to interference with the world's climate system.²¹ A similar position was put by the Western Australian Government.²²
- 2.25 The Australian Chamber of Commerce and Industry (ACCI) likewise noted that there is uncertainty associated with greenhouse science, concluding, however, that it recognises the 'desire by nations to address greenhouse gas emissions through a range of mitigation measures' and supports this as a 'prudent approach'.²³
- 2.26 The Pulp and Paper Manufacturers Federation of Australia submitted that there is 'little point in the debating the science at this stage' and that the science is sufficiently clear to indicate that the costs of global warming will outweigh the predicted benefits.²⁴ The Australian Gas Association and the Australian Gas Light Company similarly have argued that they are not in

19 Dr Rowden-Rich, *Transcript of Evidence*, 13 September 2000, pp. TR 68 and *Submission No. 49*, p. 1.

20 Professor Lindzen, *Transcript of Evidence*, 3 November 2000, pp. TR290 & TR299 and *Exhibit Nos. 19 and 20*.

21 AIGN, *Submission No. 98*, p.7. The AIGN represents the Australian Aluminium Council, the Australian Automobile Association, the Australian Coal Association, the Australian Institute of Petroleum, the Australian Petroleum Production and Exploration Association, the Business Council of Australian, the Cement Industry Federation, the Electricity Supply Association of Australia, the Federal Chamber of Automotive Industries, the Minerals Council of Australia and the Plastics and Chemical Industries Association of Australia.

22 WA Government, *Submission No. 119*, p.2

23 ACCI, *Submission No. 114*, p.3

24 Australian Pulp and Paper Manufacturers Federation of Australia, *Submission No. 117*, p.2

a position to dispute the scientific assessments, instead focussing in their submissions on the design and scope of the Protocol.²⁵

2.27 The Institution of Engineers, Australia made the point that while climate change science will continue to evolve and become increasingly accurate, the current science is:

... adequate up to the point of strong probability, at least sufficient to justify acting on the probability of its correctness. Most critics of the 'not proven therefore do nothing' school of thought have a vested interest in short term gain.²⁶

Committee observations

2.28 Even the harshest critics of the IPCC do not deny that global warming has occurred.

2.29 The major points of disagreement revolve around:

- the balance of causes – the extent to which global warming has been influenced by natural phenomena as opposed to human activities; and
- projections of future temperatures and sea levels – with critics claiming that the IPCC estimates are exaggerated.

2.30 There are validly held differences of opinion within the scientific community on the weight to be attached to various possible causes of global warming and on the likely range of consequences of global warming.

2.31 It is conceivable that as the scientific debate continues, new dimensions and disciplines will be considered, some of which will influence the predicted outcomes of global warming. The continuing refinement of computer-based climate modelling techniques to include new elements is one such example.

2.32 Nevertheless, the balance of scientific opinion is clearly and substantially in favour of the assessments made by the IPCC.

2.33 We note that the Australian Government is prepared to accept the IPCC's opinion that the world's climate has changed over the last 100 years and that human activity has had a discernible impact on that change.

25 See Australian Gas Association, *Submission No. 115*, p.1, Australian Gas Light Company, *Submission No. 130*, p.10

26 Institution of Engineers, Australia, *Submission No. 135*, p.5

- 2.34 Moreover, the Australian Government has judged that it is reasonable to be involved in coordinated international action on climate change, as foreshadowed in the UNFCCC and provided for by the Kyoto Protocol, to help mitigate the future risks associated with climate change.

The Kyoto Protocol

Aims of the Protocol

- 2.35 The Kyoto Protocol was devised as a means of pursuing the objective of the UNFCCC, which is to achieve:

... stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development proceed in a sustainable manner.²⁷

- 2.36 It does so by establishing greenhouse gas emission limits and reduction commitments for each Party to the Protocol. The Protocol requires that Parties take action to ensure that their greenhouse gas emissions not exceed their assigned limits and reductions, with a view to reducing 'overall [global] emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.'²⁸

Individual country targets

- 2.37 The Protocol describes a range of differentiated targets, from 8 per cent reduction to a 10 per cent increase above 1990 levels of greenhouse gas emissions. For example, the Protocol provides that:
- some countries are to reduce their emissions (countries in the European Union must reduce their emissions by 8 per cent; the United States by 7 per cent; Canada, Hungary, Japan and Poland by 6 per cent);
 - some countries are to stabilise their emissions (including Russia, New Zealand and Ukraine); and

27 United Nations Framework Convention on Climate Change, Done at New York , 9 May 1992, Article 3.3.

28 A copy of the Protocol is at Appendix C.

- some countries are to be allowed to increase their emissions (Norway can increase its emissions by 1 per cent, Australia can increase its emissions by 8 per cent and Iceland by 10 per cent).
- 2.38 Each country's target must be achieved in the period 2008-2012 and will be calculated as an average over the five years. The targets will be measured against a base year of 1990. The six greenhouse gases covered are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
- 2.39 In achieving reduction commitments, parties are able to take account of reductions in greenhouse emissions from sources, and removals of carbon by sinks resulting from direct human-induced land use change and forestry activities.
- 2.40 As noted by Australia's Ambassador for the Environment, Ralph Hillman, the negotiations at Kyoto produced a number of positive results for Australia:
- The concept of differentiation was accepted, sinks were included and we achieved a plus eight per cent target, which recognised Australia's particular economic circumstances.²⁹

Entry into force

- 2.41 The Kyoto Protocol enters into force when 55 Parties have ratified the agreement, including countries listed in Annex I to the UNFCCC (generally described as being industrialised countries) which account for at least 55 percent of this group's total 1990 carbon dioxide emissions.
- 2.42 As at 27 November 2000, 84 countries had signed the Protocol and 30, all developing nations, had ratified the Protocol. Australia has signed but not ratified the Protocol.
- 2.43 The United States emits one third of all emissions of Annex I countries. Therefore, ratification of the Kyoto Protocol by the United States would go a long way to ensuring entry into force. However, if the United States does not ratify, the Protocol could still enter into force if ratified by a sufficient number of other countries, such as the European nations, Russia and Japan. It would be possible for the Protocol to enter into force without the United States, Canada and Australia having ratified.

29 Ralph Hillman (DFAT), *Transcript of Evidence*, 27 September 2000, p. TR98.

Issues under negotiation

- 2.44 There are still many issues associated with the Protocol on which the Parties have yet to reach final agreement. Although these were the subject of much debate at the conference of parties held in The Hague in November 2000 (COP6), agreement was not reached and the conference is set to resume in May or June 2001.
- 2.45 In summary, the unresolved issues discussed in The Hague were:
- whether there should be a ceiling or cap on the flexibility mechanisms to which countries can use to meet their targets. The European Union (EU) is of the view that there should be a quantitative cap on the use of the mechanisms, whereas the umbrella group³⁰ argued strongly against that. Australia continues to be of the view that the international carbon trading mechanisms are an important feature of the Kyoto Protocol in arriving at least cost solutions for the Australian and global economies;
 - what quantity of sinks credits could be generated through sink activities. This is a major issue for United States, Japan and Canada, who made a proposal concerning the introduction of forest management, crop land management and grazing land management in the calculations of sinks. There was separation between the EU and the umbrella group as to the specifics of how many sink credits should be allowed. An agreement was almost reached on the definitions and implementation provisions for afforestation, reforestation and deforestation; the AGO stated that Australia's position was well catered for in this discussion. There was also acceptance of Australia's proposal that revegetation be included as a specific activity;
 - what would happen to a party where it did not meet its target. Several proposals were put forward, but the general acceptance was that parties should make up their emissions credits if they fail to meet them during the first commitment period. Discussions also focussed on a compliance action plan and a possible international compliance committee; and
 - how to fund activities and what those activities should be in developing countries. The subject of technology transfer and how this might be funded was discussed. According to DFAT, there is still a long way to go on including developing countries in the Kyoto Protocol.

30 The umbrella group includes Australia, United States, Japan, Canada, Russia, the Ukraine, New Zealand, Norway and Iceland.

- 2.46 The Minister for the Environment and Heritage, Senator the Hon Robert Hill, outlined Australia's perspective on these issues in a statement he made at COP6:

We need flexibility mechanisms that create an efficient market that can achieve low cost outcomes. The rules should not constrain the market so that it would fail to achieve its promise. Secondly, we should seize the opportunity to realise the multiple environmental and economic advantages that sinks can confer, within a framework that ensures a simultaneous focus upon the reduction of emissions. Sinks reduce atmospheric concentrations of carbon, and their potential should be recognised. On compliance, our point of departure should be that countries will wish to comply, and should be assisted in every way to comply. For Australia, the path to ratification will also need to recognise that climate change is a problem whose solution is beyond the means of the developed countries alone. We need to chart a means to include all countries in the task of limiting emissions.³¹

- 2.47 A paper providing further information on each of the four issues identified by Minister Hill as being obstacles to Australia's ratification is at Appendix D.
- 2.48 We note that another unresolved issue is the continuing debate within Australia about the work being done to establish Australia's 1990 emissions baseline.
- 2.49 One debating point is whether or not Australia's land use change and forestry sector was a net emitter of greenhouse gases in 1990. The outcome of this debate is significant because if it is accepted that this sector was a net emitter in 1990, reduced land clearing and increased tree planting over recent years suggests that it would be relatively easier for Australia to meet its emissions targets in the period 2008 to 2012. On the other hand, if it is determined that this sector was, and continues to be, a net sink rather than a net source of emissions, meeting the emissions targets would present more challenges for the community.³²

31 Senator the Hon Robert Hill, Minister for the Environment and Heritage Australia, *Statement to the Sixth Conference of the Parties to the United Nations Framework Convention on Climate Change*, The Hague, 21 November 2000.

32 See Dr Bill Burrows, *Submission No. 38* and Dr Bill Burrows, *Transcript of Evidence*, 18 October 2000, p. TR224. In *Exhibit No. 26*, Dr Burrows described four possible impacts on Australia's emissions target under the Kyoto Protocol if vegetation thickening sink in estimates of net emissions or removals for the LUC&F sector.

Likely effectiveness

- 2.50 Even if all of the unresolved issues associated with the Protocol are settled at the next session of COP6, and a sufficient number of countries ratified the Protocol so that it enters into force, and all Parties meet their targets, it is generally acknowledged that the pace of climate change will be largely unaffected.
- 2.51 This is for two reasons: the commitments described in the Protocol are relatively modest compared with projected future rates of global warming; and, importantly, the Protocol does not set emission limits or reduction targets for developing countries.
- 2.52 Professor Karoly of Monash University told us that to stabilise concentrations of CO² at double pre-industrial levels (550 parts per million), emissions would have to be reduced to 30 per cent of present levels by the year 2200. He claimed that emissions can be increased above present levels, but to stabilise concentrations in the future, emissions must be below 1990 levels at some stage.³³
- 2.53 One of the CSIRO's scenarios of future emissions, shows that the commitments under the Kyoto Protocol (5 per cent reduction in emissions) do not lead to substantially larger outcomes than under the UNFCCC (stabilise emissions at 1990 levels), if no further action is taken after the first commitment period. The CSIRO concluded:
- greater commitments to reduce emissions beyond those currently in place under the Kyoto Protocol are required to stabilise global concentration of carbon dioxide;
 - given the difficulty experienced by developed countries to reduce emissions, it is inevitable that carbon dioxide concentrations will rise; and
 - communities will need to adapt to continuing climate change.³⁴
- 2.54 The emissions commitments in the Protocol apply only to those Parties listed in Annex I of UNFCCC. These countries, of which Australia is one, are generally described as developed or industrialised countries.³⁵
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33 Prof. Karoly, *Transcript of Evidence*, 13 September 2000, p. TR23.

34 Chris Mitchell (CSIRO), *Transcript of Evidence*, 13 September 2000, p. TR45 and *Submission No. 112*, pp. 5-6.

35 The following countries are listed in Annex I of UNFCCC: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, European Union, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland,

- 2.55 A number of the submissions argue that climate change cannot be tackled effectively if emissions commitments are not established for developing countries. To proceed with the Protocol in its current form will, it is said, undermine the effectiveness of any abatement action taken by developed countries.³⁶
- 2.56 ABARE has estimated that emissions from developing countries will surpass emissions from other countries well before 2010.³⁷ On this basis, they conclude that emissions targets also must be set for developing countries:
- It is important not only in terms of where the negotiation is going but also in terms of where climate change is going, because, if we have a protocol that only constrains emissions from developed countries yet those emissions are less than 50 per cent of global emissions, clearly we really are not fulfilling the objectives of the original Framework Convention on Climate Change.³⁸
- 2.57 Opponents of the Kyoto Protocol contended that since it will not reduce global warming, there should be no moves towards ratification. Professor Lindzen stated:
- It is widely accepted that Kyoto will not do much for climate. It is widely accepted that climate is a long-term issue. There is absolutely nothing in the science that does not say it would be reasonable to set it aside for 20 years and, if need be, come back to it. The cost of doing that in terms of science will be very minimal.³⁹
- 2.58 The Lavoisier Group's recommendation to the Committee was to forestall ratifying the Kyoto Protocol and pursue energy efficiency as an end in itself.⁴⁰
- 2.59 However, supporters of ratification argue that the Protocol is a first step to achieving the objectives of the UNFCCC. For instance, the Sustainable Energy Industry Association (SEIA) claimed that if action under the Kyoto

Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America.

36 For example Jon Stanford (Allen Consulting Group), *Transcript of Evidence*, 13 September 2000, p. TR78; Australian Coal Association, *Submission No. 128*, 2. See also AIGN, *Submission No. 98*, p.1

37 ABARE, *The Kyoto Protocol and Developing Countries*, June 2000, p. 2.

38 Dr Brian Fisher (ABARE), *Transcript of Evidence*, 27 September 2000, p. TR134.

39 Prof. Lindzen, *Transcript of Evidence*, 18 October 2000, p. TR288.

40 Hon. Peter Walsh (Lavoisier Group), *Transcript of Evidence*, 27 September 2000, pp. TR 159-60.

Protocol is delayed, the outcome would be more aggressive action by the global community, with little regard for Australia's circumstances.⁴¹

- 2.60 Supporters also argue that if developed countries, including Australia, were to embrace the Kyoto Protocol, developing countries would be likely to accept emissions targets in the commitment periods after 2012.⁴²

Committee observations

- 2.61 Clearly there a number of very significant issues associated with the Kyoto Protocol that have yet to be resolved.
- 2.62 Even if the Parties manage to negotiate a resolution to these issues at the second session of COP6, it is arguable that the Protocol will remain a flawed agreement – especially as it does not yet require a truly global commitment to reducing greenhouse gas emissions.
- 2.63 The argument is essentially whether it is better to do something now, as a first step towards meeting the commitments of UNFCCC, or to do nothing in the hope that a better outcome can be negotiated in future.
- 2.64 At present, Committee members are divided in their opinion about the position that the Australian Government should adopt in continuing negotiations on the Protocol.
- 2.65 Some members are of the view that it would be premature to endorse coordinated international action on climate change until:
- the unresolved issues are resolved;
 - a clearer picture of the likely social, economic and environmental impacts of the Protocol emerges; and
 - a clearer statement of future global climate change strategies is made.
- 2.66 These members believe that the sensitivity of the atmosphere to greenhouse gases is not yet reliably known. They believe that to say, as the IPCC does, that possible future temperature increases might range from 1.4°C to 5.8°C, is hardly firm enough ground on which to build good policy. Further, to take a precautionary approach and sacrifice Australian jobs by cutting emissions here while developing countries increase emissions makes no sense; more time is needed, more investigation is necessary.

41 David Abba (SEIA), *Transcript of Evidence*, 3 November 2000, p. TR302.

42 Australia Institute, *Submission No. 77*, p. 12; Greenpeace, *Submission No. 127*, p. 14.

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- 2.67 On the other hand, some members are of the view that it is reasonable for the international community to tackle the problem of climate change in stages. They believe that the realities of international politics dictate that this is the way to proceed on the issue.
- 2.68 The members who hold this view believe that the Australian Government must honour its international greenhouse obligations by taking an active role in developing cost-effective solutions to the issues that are, as yet, unresolved.

Social, economic and environmental implications

Introduction

- 3.1 Much of the evidence we received during our review concerned the potential impact on Australia of ratifying the Kyoto Protocol. Some witnesses expressed concern about possible negative impacts associated with the cost of implementing emission controls. In contrast, others argued that ratification would offer economic opportunities deriving from greater energy efficiency and the introduction of new technologies.
- 3.2 In this chapter we summarise the main strands of this evidence.

Modelling economic impact

- 3.3 ABARE has done some work on the costs associated with implementation of the Kyoto Protocol. However, ABARE stated that it can not complete a detailed analysis of the economic impacts of the Kyoto Protocol on Australia until there is certainty on the way in which certain aspects of the Protocol will apply, such as sink activities and flexibility mechanisms.¹
- 3.4 ABARE estimations of carbon leakage² ranged from 14 per cent down to eight per cent, depending on what the constraints are on the flexibility mechanisms. If the mechanisms arrangements are uncapped, transparent, full market based system of emissions trading, as Australia negotiated at

1 Dr Fisher (ABARE), *Transcript of Evidence*, 27 September 2000, p. TR148.

2 Carbon leakage occurs when there is a reduction in emissions in developed countries taken up by an increase in emissions in developing countries.

Kyoto in 1997, then ABARE suggested that leakage from Annex 1 countries as a whole would be eight per cent.³ According to ABARE, the carbon intensive industries, such as coal and aluminium, would be the most negatively affected by the Kyoto Protocol.⁴

3.5 The Allen Consulting Group has also sought to analyse the economic effects of the Kyoto Protocol on Australia and its regions. Some of the main findings of the Allen Consulting Group were that:

- complying with the Protocol would reduce Australia's Gross Domestic Product by around 1.9 per cent;
- some States would suffer more than others, with Gross State Product in Western Australia reducing by 3.3 per cent compared to Tasmania which would increase by 1.5 per cent;
- some industries would suffer severe production declines, particularly aluminium (-24 per cent) and black coal (-17 per cent);
- employment would fall in Queensland and Western Australia more than 3.5 per cent, with over 50,000 jobs lost in non-metropolitan Queensland; and
- employment would decline by over 8 per cent in the LaTrobe Valley, Fitzroy and South-West of Western Australia.

3.6 The Allen Consulting Group concluded that meeting Australia's obligations under the Kyoto Protocol would come at a high cost, particularly in regional and rural Australia. Further, it concluded that Australia should only consider ratifying the Protocol if its negotiating conditions are met, including:

- unfettered use of flexibility mechanisms;
- full credit for reductions in land clearing emissions and sinks; and
- a clear path for incorporating developing countries in a greenhouse gas abatement program.⁵

3.7 Critics of the economic modelling assert that there is no convincing evidence of economic damage resulting from the Kyoto Protocol. They claimed that predictions about the future size of the economy or market prices for commodities cannot be made with any certainty. This is partly because of a view that the balance of the Australian economy may, in any

3 Dr Brian Fisher (ABARE), *Transcript of Evidence*, 27 September 2000, p. TR134.

4 Dr Brian Fisher (ABARE), *Transcript of Evidence*, 27 September 2000, p. TR140.

5 Allen Consulting Group, *Exhibit No. 3.2*, p. 4.

event, change significantly over the next 10 to 15 year period as a result of changing energy prices.⁶

- 3.8 The economic models were criticised as overstating negative impacts while not considering the positive impacts that the Kyoto Protocol can bring to Australia.⁷ Professor Lowe acknowledged that the aluminium industry accounts for 10 per cent of Australia's exports which will be affected, but the effect on the overall economy will be far less than is claimed in economic models.⁸ The Sustainable Energy Industry Australia (SEIA) stated that the Allen Consulting Group's work focused on a small number of industries that are believed to be losers, whereas some industries will be winners and others will be unaffected.⁹

International competitiveness

- 3.9 We received many submissions from individuals, organisations and the Western Australian and Northern Territory Governments, who were concerned about Australia's industry becoming uncompetitive and being forced to move offshore due to the implementation of the Kyoto Protocol.
- 3.10 Both the Western Australian (WA) Government and the Northern Territory (NT) Government were concerned about the potential damage to their resources and energy sectors and their state economy. The WA Government claimed that its minerals and energy sectors would be severely compromised by Australia's Kyoto Protocol target; industries and projects which might otherwise have contributed to Australia's future export earnings could see dramatic lower levels of investment. The WA Government asserted that a potential 76,000 jobs are under threat in Western Australia if resource projects under consideration are limited by the enforcement of Kyoto Protocol abatement measures.¹⁰ The NT Government claimed \$11 billion of potential gas related investments would be threatened under the Kyoto Protocol which means that the Territory's economic development would suffer and resource-sector based jobs and regional development would be lost.¹¹

6 Prof Lowe, *Transcript of Evidence*, 18 October 2000, p TR260; Bill Nagle (AGA), *Transcript of Evidence*, 3 November 2000, p. TR336; Anna Reynolds (CANA), *Transcript of Evidence*, 3 November 2000, p. TR331; Australia Institute, *Submission No. 77*, p. 12.

7 The Sustainable Energy Industry Association, *Submission No.132.1*; REGA, *Submission No. 126.1*.

8 Prof. Lowe, *Transcript of Evidence*, 18 October 2000, pp. TR252 & TR258.

9 Prof. Pears (SEIA), *Transcript of Evidence*, 3 November 2000, p. TR312.

10 Western Australian Government, *Submission No. 119*.

11 Northern Territory Government, *Submission No. 141*.

- 3.11 Industry and business groups claimed that the cost of carbon in developed countries would increase, would be less competitive than in developing countries and industry would move to where they are not constrained by targets.¹² The Australian Aluminium Council (AAC) had serious concerns about the damaging implications of the Kyoto Protocol on the future export earnings of the aluminium industry. The AAC explained that the industry is on the brink of expansion in Australia with three greenfield smelter proposals being discussed. This expansion would result in the Australian alumina industry being the largest in the world and the aluminium industry being the world's fifth largest producer and third largest exporter.¹³
- 3.12 Although the aluminium industry supported the government's objective to reduce greenhouse gases, it asserts that all sectors of the Australian economy must make an equitable contribution to it.¹⁴ The AAC maintained that the competitiveness of the Australian aluminium industry should not be affected for the sake of the Kyoto Protocol:
- ... the world is going to be wanting more aluminium. All the projections show a growth rate of three to four per cent per year, so it is going to be produced somewhere and there is no reason, ... why a fair bit of that investment should not take place in Australia.¹⁵
- 3.13 The Australia Coal Association claimed that international competitiveness of the black coal industry, which is Australia's largest export industry and employs around 18,840 people, would be impacted severely by the Kyoto Protocol.¹⁶ The Latrobe Valley Taskforce asserted that brown coal is a valuable state and national energy resource, producing electricity at world-competitive prices and its competitiveness should be protected.¹⁷
- 3.14 According to the National Farmers Federation, the agriculture sector could also face threats from the economic costs and loss of competitiveness resulting from the requirement to reduce emissions from agricultural activities. These threats, they claimed, would be greatly exacerbated if developing countries are not required to reduce their emissions.¹⁸

12 Minerals Council of Australia, *Submission No. 95*, p.1; Australian Coal Association, *Submission No. 128*, p. 8; Mr Barry Jones (APPEA), *Transcript of Evidence*, 27 September 2000, p. TR196; Norske Skog, *Submission No. 88*, p. 2; Minerals Council, *Submission No. 95*, p.1..

13 Mr David Coutts (AAC), *Transcript of Evidence*, 18 October 2000, p. TR205.

14 Mr Geoffrey Ewing (Comalco), *Transcript of Evidence*, 18 October 2000, p. TR206..

15 Mr David Coutts (AAC), *Transcript of Evidence*, 18 October 2000, p. TR208.

16 Australian Coal Association, *Submission No. 128*, pp. 5-6.

17 Latrobe Valley Generators, *Submission No. 121*, p. 7.

18 National Farmers Federation, *Exhibit No. 17*, p. 3.

- 3.15 DFAT recognised this possible shift in global trade and resource flows from developed countries to developing countries which would undermine the environmental effectiveness of abatement action undertaken in accordance with the Protocol.¹⁹ DFAT responded to these concerns about Australia's industry competitiveness:

There are two elements to an answer. The first is that your concern, one we share of course, underlines how important making sure that the Kyoto mechanisms function effectively will be. Those mechanisms will be very important to achieving a lower cost of carbon, and effectively a lower additional burden on industry in countries that ratify the protocol. The second issue relates to the fact that developing countries do not have targets under the Kyoto Protocol. It is certainly an issue that Australia has worked very hard to address.²⁰

- 3.16 Also, the AGO has been working on policy frameworks to maximise the economic good in Australia and to deal with any structural and regional issues. It has been working on a possible national emission's trading market and how it might provide offsets to sectors that are negatively affected. The AGO claimed that this issue is very much part of active policy focus:

A variety of policy responses are available to government for responding to Kyoto Protocol commitments. These are being investigated with a view to developing the most effective package of measures that will minimise any cost to industry or national welfare associated with participating in an international greenhouse response.²¹

- 3.17 However, some submissions claimed that the carbon leakage theory should be discounted because the fossil fuel industry is not sustainable in the long term and developing countries are not likely to increase their energy intensive industries.²² The Climate Action Network Australia (CANA) asserted that developing countries will be looking at less energy intensive industries, with lighter manufacturing and new technology industries as the path for their development forward.²³ Also, industries concerned about longer term investments would need to consider the

19 DFAT, *Submission No. 112*, p. 6.

20 Christopher Langman, (DFAT), *Transcript of Evidence*, 4 December 2000, p. TR277.

21 Ian Carruthers, (AGO), *Transcript of Evidence*, 4 December 2000, p. TR279 and *Submission No. 112*, p. 15.

22 For example Australian Reproductive Health Alliance, *Submission No. 48*, p. 1; Andrew Helps, *Submission No. 145*.

23 Anna Reynolds (CANA), *Transcript of Evidence*, 3 November 2000, p. TR331.

possibility that developing countries will take on targets in subsequent commitment periods under the Kyoto Protocol.²⁴

Technological development

3.18 The Allen Consulting Group claimed that the ultimate answer to climate change is technological change, complemented by a reasonable timeframe and by a major research and development effort. They claimed that the Kyoto Protocol allows insufficient time for accelerated technological change to occur.²⁵

3.19 Industry groups supported this view and contended that research and development programs are the best way forward for industry to reduce emissions. For example, the Australian Coal Research Program is researching more efficient generation for electricity from coal via gasification technologies which could reduce CO² emissions by more than 20 per cent.²⁶

3.20 The Latrobe Valley Taskforce acknowledged that the coal industry needs to reduce emissions and it is concentrating on implementing efficiency measures and new technologies to do that. However, it believed that the Kyoto Protocol targets should be abandoned and timelines lengthened to retain the competitiveness of the Australian coal industry.²⁷ The aluminium industry also asserted that one of the difficulties with the Kyoto Protocol is the timing involved:

There are going to be very significant technological advances in our industry that will both improve its energy efficiency and, through that, reduce greenhouse emissions quite substantially. ... So it is very important, in whatever solution we come to, to not lose sight of the longer term position that Australia probably should have in this industry, for short-term efforts.²⁸

3.21 During our discussions in the La Trobe Valley, we heard about the technological developments of the Cooperative Research Centre for Clean Power from Lignite. This industry and government partnership is working on reducing greenhouse gas emissions from lignite-fired power stations, while enhancing Australia's competitiveness from low cost energy. The CRC claimed that technologies under development will lead

24 The Australia Institute, *Submission No. 77*, p. 12.

25 Jon Stanford (Allen Consulting Group), *Transcript of evidence*, 13 September 2000, p. TR78.

26 Australian Coal Association, *Submission No. 128*, p. 3.

27 Latrobe Valley Generators, *Submission No. 121*, p. 7.

28 Mr David Coutts (AAC), *Transcript of Evidence*, 18 October 2000, p. TR208.

to larger greenhouse gas emission reduction than can reasonably be expected from renewables. Under a scenario of 1.5 per cent load growth in Victoria, the CRC estimated that by 2040 the application of new technology would reduce annual CO² emissions by 36 per cent.²⁹

Sequestration options

- 3.22 Sequestration was highlighted as one area of technological advancement which could significantly assist in greenhouse abatement. In its submission, the CSIRO drew attention to strategies involving sequestration: when carbon taken out of the atmosphere is stored in either vegetation and the soil (biospheric sequestration), the earth's crust (geological sequestration) or the ocean (marine sequestration). The CSIRO found that all these methods have significant abatement potential but they are still within the research domain.³⁰ The Antarctic CRC has been researching the potential for ocean sequestration of carbon, which they believe has the potential to rival reforestation as a mechanism for sequestration of carbon.³¹
- 3.23 We heard from the Australian Petroleum Production and Exploration Research Centre (APCRC) which claimed that geological sequestration of carbon dioxide can potentially sequester sixty gigatonnes of carbon dioxide in Australia.³² The APCRC demonstrated that geological sequestration could bring significant benefits to the Australian economy in the future particularly if the Kyoto Protocol provides for it to be recognised as a tradable carbon sink.³³
- 3.24 The APCRC claimed that Australia has at least 49 sustainable sites for geological sequestration which would as a sink account for 10,000 times more than that of a million hectares of trees. These sites could have the capacity to absorb all of Australia's carbon dioxide production for the next 1000 years. However, the APCRC stressed that these figures are indicative and research is continuing into these sites and into the costs involved in geological sequestration. Current APCRC predictions of cost are \$10 to \$25 a tonne.³⁴ In summary, Dr Cook of the APCRC stated:

There is more work to be done on the technologies, the economics, the risk assessments, the sequestration times and soon as far as geological sequestration is concerned, but the preliminary results

29 Cooperative Research Centre for Clean Power from Lignite, *Exhibit No. 6*, pp. 4 & 19.

30 CSIRO, *Submission No. 112*, pp. 18-23.

31 Antarctic CRC, *Submission No. 79*.

32 Dr Chris Mitchell (CSIRO), *Transcript of Evidence*, 27 September 2000, pp. TR142-43.

33 APCRC, *Submission No. 75.1*, p.2.

34 Dr Peter Cook (APCRC), *Transcript of Evidence*, 27 September 2000, p. TR186-89.

for the work of the APCRC is that geological sequestration could prove to be one of Australia's most significant sequestration options.³⁵

Economic opportunities

- 3.25 Many submissions asserted that Australia has opportunities to develop and promote new technologies and renewable energy services that will be marketable overseas.³⁶ Dr Jane Andrew from the University of Wollongong claimed that the Kyoto Protocol begins the process of positioning Australian industry in a global economy that will increasingly aim to be sustainable:

We need to be at the forefront of environmental/energy research and development, environmental technological advancements and we need to orient industry towards these goals so that they can maintain international competitiveness over the longer-term as the impacts and responses to global warming become more apparent.³⁷

- 3.26 Greenpeace agreed that, while transition and structural change will be necessary for some industries, the Australian economy will benefit overall, with investment in new technologies, new operational and manufacturing processes and improved levels of efficiency.³⁸ The Renewable Energy Generators of Australia Ltd (REGA) claimed that for Australia to remain internationally competitive, it must move from a resource based economy, with declining terms of trade and employment opportunity, to a knowledge based, value added, sustainable economy.³⁹
- 3.27 Some submissions pointed out that many businesses are taking the issue of climate change seriously and are investing heavily in new energy technologies.⁴⁰ The SEIA claimed that there are opportunities for industry and business to take on a cost-effective response to global warming. SEIA pointed out that companies, such as BP, Shell and BHP are moving to make money out of greenhouse strategies. They are doing this because

35 Dr Peter Cook (APCRC), *Transcript of Evidence*, 27 September 2000, p. TR189.

36 Conservation Initiatives for Sustainability, *Submission No. 10*, p. 3; Orbital Engine Corporation Limited, *Submission No. 24*; Institution of Engineers, *Submission No. 135*.

37 Dr Jane Andrew, *Submission No. 72*, p. 4.

38 Greenpeace, *Submission No. 127*, p. 4.

39 REGA, *Submission No. 126*, p. 9.

40 The Australia Institute, *Submission No. 77.1* p. 3.

they recognise that global warming is a significant issue and they have identified opportunities that are profitable.⁴¹

- 3.28 In Australia, the natural gas industry has separated itself from the fossil fuel lobby and promotes its business through the advocacy of greenhouse gas reduction policies. The Australian Gas Association claimed that increased natural gas use as a substitute for high greenhouse gas emissions fuels and for future energy demand is part of the solution to the challenge of maintaining economic, regional and industrial development while curbing the growth of harmful greenhouse gas emissions.⁴² The Australian Gas Light Company claimed that, over the life cycle from extraction to end use, greenhouse emissions from a major gas fired electricity generator would be approximately 50 per cent less than the emissions from a Victorian brown coal generator and 32 per cent less than the emissions of an average black coal generator.⁴³
- 3.29 Even though the agricultural activities that may be included under the sink provisions in the Protocol are still under negotiation, the National Farmers Federation stated that this provision could potentially offer significant opportunities for the agriculture sector, through access to carbon credits that would be tradeable in an emissions trading scheme.⁴⁴ The Australian Greenhouse Office stated that part of Australia's proposal on sinks under article 3.3 is that new forests included a minimum of one hectare. There are also proposals under article 3.4 for sink activities for areas below that size. If this is accepted, it could provide opportunities for small landowners and farmers to be involved in carbon trading.⁴⁵

Renewable energy

- 3.30 Many submissions referred to renewable energy as a major growth industry.⁴⁶ REGA claimed that the renewable energy industry would bring to Australia huge economic opportunities along with its employment and environmental benefits. REGA claimed that the opportunities will also be of importance to regional Australia because most of the development will take place in areas away from the major urban manufacturing areas.⁴⁷
- 3.31 Professor Lowe argued that emissions reduction methods, provided they are effectively managed and implemented, can produce new jobs and

41 Prof. Pears (SEIA), *Transcript of Evidence*, 3 November 2000, p. TR305.

42 AGA, *Submission No. 115*, p. 1.

43 AGL, *Submission No. 130*, p. 3.

44 National Farmers Federation, *Exhibit No. 17*, p. 5.

45 Ian Carruthers (AGO), *Transcript of Evidence*, 27 September 2000, p. TR124.

46 Carrie Sonneborn, *Submission No. 62*.

47 Hon. Peter Rae (REGA), *Transcript of Evidence*, 13 September 2000, pp. TR85 -87.

create new prosperous and sustainable industries.⁴⁸ Greenpeace claimed that, per unit of output, more jobs are created in new sustainable energy industries than in fossil fuel industries.⁴⁹ Australian Gas Ltd injected an optimistic note on employment in regional areas:

... greenhouse positive policies do not always necessarily equal unemployment. If there are other sources of energy-and gas is a perfect example-they bring employment to rural and regional areas. The PNG pipeline will traverse about 90 per cent of the Queensland coast.⁵⁰

- 3.32 Stanwell Corporation, a generator with \$1.7 billion in assets, has undertaken major investments in renewable energy projects, such as wind farms and co-generation projects. Stanwell Corporation claimed that Australia's renewable energy sector has the potential to generate export income, provide a significant economic stimulus to rural and regional Australia and create employment opportunities.⁵¹ CANA referred to the opportunities for economic growth in Victoria with wind farms:

Some of the good things about wind farms are that they tend to be placed in regional areas. They can also be put on farming land and have grazing happening underneath, providing an additional source of income to farmers. they create jobs. If we can get into manufacturing them, that is a whole new realm of manufacturing industry that we can open up in Victoria.⁵²

Environmental impacts

- 3.33 As noted in Chapter 2, without the involvement of developing countries, the achievement of the commitments described in the Kyoto Protocol will have little impact upon future global warming.
- 3.34 For some submitters, this is basis of an argument that the Kyoto Protocol is fundamentally flawed and ought to be set aside. The Australian Aluminium Council suggested that the Protocol, as it stands, would in fact be damaging to the environment. It would encourage industries to move from developed countries to countries with less stringent environmental

48 Prof. Lowe, *Submission No. 137*, p. 7

49 Greenpeace, *Submission No. 127*, p. 7.

50 Leith Wood (AGL), *Transcript of Evidence*, 3 November 2000, p. TR345.

51 Stanwell Corporation, *Submission No. 120*, p. 3.

52 Esther Abram (CANA), *Transcript of Evidence*, 3 November 2000, p. TR324.

controls and less experience in best practice with the consequence that pollution and greenhouse gas emissions would increase.⁵³

- 3.35 The Australian Industry Greenhouse Network argued that extension of the Protocol to include all countries with significant levels of greenhouse gas emissions is not only a trade and economic imperative; it is also an environmental requirement.⁵⁴
- 3.36 However, we also received evidence that developing country involvement should not be a precondition to ratification and that those countries (such as Australia) that had profited from burning fossil fuels should take a lead in combating global warming.⁵⁵ Clive Hamilton put it in these terms:
- The moral principles that guide environmental policy are the 'polluter pays' principle and the 'ability to pay' principle. ... On these grounds, countries which are responsible for a higher level of per capita emissions and which are richer should do more to reduce their emissions, because they are more responsible and they are in a position to do so.⁵⁶
- 3.37 Also, supporters of the Protocol look to the second commitment period for more positive results in responses to global warming, including developing countries. They claim that as developing countries will be pressured into taking on targets after 2012, the advantages that some industries may see in moving offshore will disappear.⁵⁷
- 3.38 The extent of Australia's contribution to global greenhouse gas emissions has been the subject of some conflicting analysis:
- opponents of the Protocol have argued that as Australia is the source of only 2 per cent of total global emissions, any mitigation measures taken by Australia will have a negligible effect⁵⁸; whereas
 - supporters of the Protocol claim that Australia carries a significant responsibility, pointing to evidence that, in 1995, Australia ranked 18th among 180 nations in terms of total CO₂ output and 9th in per person CO₂ emissions; and that between 1990 and 1997, Australia's energy

53 Geoffrey Ewing (Comalco), *Transcript of Evidence*, 18 October 2000, p. TR209..

54 AIGN, *Submission No. 98*, p. 1.

55 Conservation Initiatives for Sustainability, *Submission No. 10*, p. 2.; Cities for Climate Protection, *Submission No. 31*; Wildlife Preservation Society of Queensland, *Submission No. 41*; David Wanless, *Submission No. 54*; Dr Jane Andrew, *Submission No. 72*.

56 Clive Hamilton (Australia Institute), *Transcript of Evidence*, 3 November 2000, p. TR365.

57 Greenpeace, *Submission No. 127*, p. 14.

58 LaTrobe Valley Taskforce, *Exhibit No. 8*, p. 8; Australian Industry Greenhouse Network, *Submission No. 98*, p.1; ACCI, *Submission No. 114*, p. 2; Chamber of Commerce and Industry of Western Australia, *Submission No. 129*, p.1.

related emissions and annual growth in energy use were trending higher than OECD averages.⁵⁹

3.39 CANA acknowledged one point in the analysis presented by Kyoto opponents – that the Protocol will lead to only a small reduction in emissions from the developed world. However, they go on to argue that, if all nations participate, ‘it does not take many one and two per cents to actually add up to 100 per cent’.⁶⁰

3.40 The view that Australia should accept its responsibility, as a wealthy nation with one of the highest per capita emission rates, demonstrate its commitment, and take action to ratifying the Kyoto Protocol was expressed in many of the submissions we received.⁶¹ Such action, it is said, will not only demonstrate Australia’s commitment to tackling global climate change but will encourage other nations to do the same:

As a wealthy nation with the highest per capita emissions in the world, Australia must be seen to do its fair share, otherwise other nations, no matter how big their emissions, will feel less obligation to do their fair share.⁶²

3.41 Some advocates went on to express concern about the harmful impacts on the environment if the Kyoto Protocol is not ratified.⁶³ These concerns included extreme weather events, rising seas, threats to ecosystems and coral bleaching. The CSIRO expressed similar views, stated that if climate change is ignored:

The sorts of things you would see with confidence are greater warming of Australia in the centre of the continent compared with the margins and greater warming as we go further south. Understanding what might happen to Australia for rainfall, for example, we are quite uncertain about. There is a tendency ... to show Australia drying ... is a tendency for an increase in rainfall

59 Anna Reynolds (CANA), *Transcript of Evidence*, 3 November 2000, p. TR318-20 and *Exhibit No. 21*. Also see Australia Institute, *Submission No. 77.1*, p. 5.

60 Anna Reynolds (CANA), *Transcript of Evidence*, 3 November 2000, p. TR320.

61 See Prof. Karoly, *Transcript of Evidence*, 13 September 2000, p. TR29; Prof Lowe, *Transcript of Evidence*, 18 October 2000, p. TR251; Clive Hamilton, *Transcript of Evidence*, 3 November 2000, p. TR365; Anna Reynolds (CANA), *Transcript of Evidence*, 3 November 2000, p. TR319; Conservation Initiatives for Sustainability, *Submission No. 10*, p. 4; Joan Vandewerdt, *Submission No. 2*; Australian Reproductive Health Alliance, *Submission No. 48*; AGL, *Submission No. 130*, p. 1.

62 The Australia Institute, *Submission No 77*, p. 5.

63 For example AID/WATCH, *Submission No. 70*; Albury-Wodonga Environment Centre, *Submission No. 81*; Australian Coalition for Economic Justice, *Submission No. 124*; Greenpeace, *Submission No. 127*, p. 4; Dennis Hannon, *Submission No. 47*; Helen Merrett, *Submission No. 76*.

intensity. ... The current projections (for oceans rising) are about 40cms by the end of the century.⁶⁴

- 3.42 The Humane Society International was concerned about the effects of global warming on Australian wildlife and the possible loss of habitat for many species.⁶⁵ The Australian Reproductive Health Alliance also claimed that the Protocol is essential to the health and wellbeing of world populations in general.⁶⁶

Committee observations

- 3.43 Debate about the potential social, economic and environmental impacts of the Kyoto Protocol is passionate, often contradictory and, in many respects, likely to continue until the impacts are, one way or another, actually realised.
- 3.44 If Australia were to ratify the Protocol, some sectors of the economy will be under great pressure to reduce greenhouse gas emissions - by changing operational practices, finding greater efficiencies and implementing new technologies. It is not yet clear whether those industries with high rates of fossil fuel use will be able to adapt sufficiently to create sustainable futures. Some members of the Committee are concerned that such industries might collapse: paying the ultimate price for Australia's compliance with the Kyoto Protocol.
- 3.45 On the other hand, it is possible also that new business opportunities will emerge for energy efficient industries or through the development of a national emissions trading market.
- 3.46 Those who argue that the costs of mitigation are greater than the benefits of new opportunities have, at present, more support from the economic modelling that has been done to date. But the models are not without their critics and even those who have conducted the modelling acknowledge that it is not possible to complete an accurate analysis until the final design of the Protocol is agreed upon.
- 3.47 As suggested in our observations at the conclusion of Chapter 2, issues such as the treatment of carbon sinks and the extent of flexibility mechanisms may significantly influence the domestic cost of implementing the Protocol. These issues need to be resolved before a final

64 Chris Mitchell (CSIRO), *Transcript of Evidence*, 27 September 2000, p. TR141.

65 Humane Society International Inc. *Submission No. 52*.

66 Australian Reproductive Health Alliance, *Submission No. 48*, p. 1.

best estimate of the economic, social and environmental impact of the Protocol can be calculated.

- 3.48 In any event, continuing investment in the development of technologies that promote the cleaner combustion of fossil fuels and the development of alternative sources of energy is a wise focus for the national research effort.

ANDREW THOMSON MP
Committee Chairman

27 March 2001



Appendix A - Additional Comments by Senator Andrew Bartlett

Whilst the Committee's discussion paper usefully outlines various views, it is my opinion that a stronger statement must be made about the urgency of the climate change issue and the need for stronger action by the Australian government.

There is, and will continue to be, uncertainties about the causes of climate change and the extent and nature of its impacts. Extra support for scientific research is therefore important.

However, lack of certainty about the extent of climate change should not be used as a reason to delay action. Similarly, uncertainty over some of the detail of the Kyoto Protocol should not be used as a reason not to proceed towards ratification.

There is clearly broad scientific consensus throughout the world that human-induced climate change is a reality. It is also clear that the Kyoto Protocol alone will not be sufficient to address the problem and that further action will need to be taken if major negative impacts of climate change are to be avoided.

Ratification of the Kyoto Protocol would be an important initial step towards getting effective constraints on global greenhouse emissions, but more needs to be done.

The Government and the Parliament of Australia should be making a strong, unequivocal statement in support of stronger action globally to reduce greenhouse emissions.

Australia should take a leadership role in negotiations with an aim of achieving ratification of the Kyoto Protocol and to urge ratification by other countries. Australia can also take a leadership role in encouraging developing countries to commit, at an appropriate time, to binding emission reduction targets as part of a global strategy. This is particularly important given Australia's place in the Asia-Pacific region and the lack of commitment to the Kyoto Protocol from the USA.

The November 2000 report of the Senate Environment, Communications, Information Technology and the Arts References Committee, "*The Heat Is On: Australia's Greenhouse Future*" outlines many of the actions which need to be taken to adequately address the climate change issue.

Whilst it is useful and important for the Joint Standing Committee on Treaties to be examining some of the specifics of the Kyoto Protocol, the urgency of the situation is such that concerted action should be happening now to further reduce Australia's greenhouse emissions and to encourage other nations to do the same.

Senator Andrew Bartlett
Australian Democrats, Qld



Appendix B - Inquiry process & lists of submissions, exhibits and witnesses

Inquiry process

On 29 June 2000 we resolved to inquire into whether ratification of the Kyoto Protocol is in Australia's interest.

Our inquiry into the Kyoto Protocol was advertised in all major metropolitan newspapers on 15 July 2000 and on our web site. As at 27 March 2001 we had received 145 submissions in response to our invitation to comment on the implications of ratification of the Kyoto Protocol. Copies of most submissions are available electronically from our web site at www.aph.gov.au/house/committee/jsct. Hard copies are also available from the Committee Secretariat. A list of submissions and exhibits is below.

We took evidence at public hearings on 13 September 2000 in Melbourne, 18 October 2000 in Brisbane, and 27 September, 3 November and 4 December 2000 in Canberra. A list of witnesses who gave evidence at the hearings is below. A transcript of the evidence taken at the hearings can be obtained from our website or by contacting the Committee Secretariat. We also had discussions with representatives from the local government and industry in the Latrobe Valley on 14 September 2000.

List of submissions

Submission No.	Organisation/Individual
1	Mr Geoffrey Penhall
2	Ms Joan Vanderwerdt
3	Ravi Singh
4	Ms Karen Winnett
5	Mr Robert Brooks
6	Mr David Karr
7	Native Forest Network Southern Hemisphere
8	Mr Phil Baker
9	Mr Geoff Pelly
10	Conservation Initiatives for Sustainability Pty Ltd
11	Mr Howard Flinders
12	Mr Jonathan Doig
13	Ms Sophie Underwood
14	Osborne Associates
15	Ceramic Fuel Cells Ltd
16	Ms Liz Blanks
17	Ms Leanne Olds
18	Edith Cowan University
19, 19.1	Ms Alyson Macdonald
20	Dr Clyde Anderson
21	Ms Carolyn Macdonald
22	Susan Clennett
23	Professor Warwick McKibbin
24	Mr Dave Arnall
25	Rainforest Information Centre, Lismore
26	Mr Robert Rutkowski
27	EnviroStar Energy Limited
28	Mr G Lloyd-Smith
29	Ms Rachael O'Mara
30	Ms Melinda Denham
31	Ms Maria Simonelli
32	Ms Maureen Beatty
33	Mrs Rosemary Drabsch
34	Ms Tina Lesses
35, 35.1	National Association of Forest Industries
36	Ms Lisa McDermott
37	Ms Amy Atkinson
38	Dr Bill Burrows

39	Dr Robert Langley
40	Dr Keith Cockley
41	Ms Jill Chamberlain
42	Mr DZ Knochs
43	J Williams
44	Mr John Daly
45	Mr Charles Holub
46	Ms Eileen Kelly
47	Bellingen Environment Centre
48	Ms Dianne Proctor
49	Dr Murray Rowden-Rich
50	Professor David Karoly
51	Ms Jo Hill
52	Human Society International
53	Mr & Mrs M & B Macdonald
54	Mr David Wanless
55	Mr Ian Snake
56	Sutherland Shire Council
57	Mr Ron Van Delft
58	Professor David Green, Research School of Earth Sciences
59	Australian Petroleum Production and Exploration Association
60	Mr Stuart Hill
61	Mr Robert Ludwig
62	Murdoch University
63	Bicycle Federation of Australia (ACT)
64	The Colong Foundation for Wilderness Ltd
65	Ms Danielle Beinart
66	Mr John Dival
67	Mr Gerhard Weissmann
68	Mr Nigel Radford
69	Ms Lyn Amos
70	AID/WATCH
71	Dr Brian O'Brien
72	Dr Jane Andrew
73	E M Aujard
74	Mrs Jocelyn Clarkson
75, 75.1	Australian Petroleum Cooperative Research Centre
76	Ms Helena Merrett
77, 77.1	The Australia Institute Ltd
78, 78.1	The Lavoisier Group Inc

79	Antarctic CRC
80	Mr Warwick Hughes
81	Albury-Wodonga Environment Centre
82	Epic Energy Corporate
83	Mr Rick Calitz
84	S McMahon
85	McKean & Park
86, 86.1	Bob Foster
87	Ms Margaret Dingle
88	Norske Skog
89	Mr Brian Carter
90	Mr Martin White
91	Total Environment Centre
92	Ms Stacie Wang
93	Thao Le Thanh
94	Mr Andrew Jeeves
95	Minerals Council of Australia
96	Cement Industry Federation
97	Women's Planning Network Victoria Inc
98	Australian Industry Greenhouse Network
99	Carter Holt Harvey
100	Mr & Mrs G King
101	Mr Ewald Schober
102	Ms Julie Schober
103	Mr Keith Mounsher
104	Mr David Thorp
105	Mr Peter Keogh
106	Ms Jeanette Weise
107	Ms Sonia Blackburn
108	Mr & Mrs McNaughton
109	Professor David Green
110	Electricity Supply Association of Australia Limited
111	Australian Property Institute
112	Commonwealth Government (Australian Greenhouse Office, Department of Foreign Affairs and Trade, CSIRO)
112.1, 112.2, 112.3	Australian Greenhouse Office
113	ABARE
114	Australian Chamber of Commerce and Industry
115	The Australian Gas Association
116	Dr Sonja Boehmer-Christiansen
117	Pulp & Paper Manufacturers of Australia

118	Bureau of Meteorology
119	Ministry of the Premier and Cabinet
120	Stanwell Corporation Limited
121	Latrobe Valley Generators
122	Sustainable Cities & Industries Campaign
123	CRC for Greenhouse Accounting
124	Australian Coalition for Economic Justice
125	Rio Tinto
126, 126.1	Renewable Energy Generators Australia Ltd
127	Greenpeace Australia
128	Australian Coal Association
129	Chamber of Commerce and Industry (WA)
130	The Australian Gas Light Company
131	Australian Aluminium Council
132, 132.1	The Sustainable Energy Industry Association
133	Australian Industry Group
134	Climate Action Network Australia
135	Institution of Engineers Australia
136	Dr Ross McKittrick
137	Prof Ian Lowe
138	Professor Jan Narveson
140	Prof Philip Laird
141	Northern Territory Government
142	International Trade Strategies Pty Ltd
143	Mr David Rowe
144	Mr David Packham
145	Mr Andrew Helps

List of exhibits

Exhibit No.	From	Description
1	Mr Brian Carter	Book: Brian Carter, <i>The Modern Ecosystem: An Ultimate Landscape</i> , 1989.
2	Mr Brian Carter	Book: Verne McLaren, <i>Let the Earth Live</i> , 1982.
3	Allen Consulting Group	<i>Meeting the Kyoto Target: Impact on the Australian Economy</i> , Address to the 3rd Annual Emissions Trading Forum by Jon Stanford, Director, The Allen Consulting Group, 13 June 2000.
3.1	Allen Consulting Group	Copy of presentation to the Committee, Public Hearing, Melbourne, 13 September 2000.
3.2	Allen Consulting Group	<i>Meeting the Kyoto Target: Impact on Regional Australia</i> , Report to the Resources Industry., Executive Summary and Media Release by Minerals Council of Australia, 11 October 2000.
4	Mr Charles Guest, ANU	Article by Charles Guest, Senior Fellow, National Centre for Epidemiology and Population Health, Australian National University, <i>Special pleading at Kyoto: Australia's economic argument on greenhouse gases is a health hazard</i> .
5	Mr Alan Oxley	Alan Oxley, International Trade Strategies Pty Ltd, <i>The Kyoto Chimera</i> , presented at The Lavoisier Group Conference, Melbourne, 24 May 2000.
6	Dr David Brockway	Copy of presentation by Dr David Brockway, Chief Executive Officer, CRC for Clean Power from Lignite, to the Committee, Private Briefing, Latrobe Valley, 14 September 2000.
7	Mr Ron Steenbergen	Copy of presentation by Renewable Energy Generators Australia Ltd to the Committee, Public Hearing, Melbourne, 13 September 2000.

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| 8 | Mr Barry Dunstan | Copy of presentation by Mr Barry Dunstan, Latrobe Valley Taskforce, to the Committee, Private Briefing, Latrobe Valley, 14 September 2000. |
| 9 | Mr Alan Eagle | Copy of presentation by Mr Alan Eagle, Environment Manager, Australian Paper, to the Committee, Private Briefing, Latrobe Valley, 14 September 2000. |
| 10 | Mr Andrew Stephens | Copy of presentation by Mr Andrew Stephens, Economic Development Manager, Latrobe City Council, to the Committee, Private Briefing, Latrobe Valley, 14 September 2000. |
| 11 | Latrobe Shire Council | Submission to the Australian Senate Employment, Education & Training Reference - Legislation Committee, Inquiry into Regional Employment & Unemployment. |
| 12 | Dr Murray Rowden-Rich | Papers presented at Public Hearing, Melbourne, 13 September 2000. |
| 13 | Australian Greenhouse Office | <i>How Real is Climate Change: What Does Science Tell Us?</i> , Transcript of address by Dr John Zillman, Bureau of Meteorology, Dr Graeme Pearman, CSIRO Division of Atmospheric Research and Dr John Church, CSIRO Marine Research. |
| 14 | Professor David Karoly | Papers presented at Public Hearing, Melbourne, 13 September 2000. |
| 15 | Mr Robert Foster | Bob Foster, <i>The Kyoto Protocol: don't forget the science</i> , October 2000. |
| 16 | Mr Alan Oxley | <i>Moving Beyond Kyoto: A Responsible Approach to Climate Change</i> , Speech to the James A. Baker Institute of Public Policy, Rice University, by US Senator Chuck Hagel, 7 September 2000. |
| 17 | National Farmers Federation | Copy of letter from Dr Wendy Craik, Executive Director, National Farmers Federation to Hon. John Howard, Prime Minister, 10 October 2000. |

18	Mr Jeffrey Callaghan, Bureau of Meteorology	Tropical Cyclone Impacts along the Australian East Coast from November to April 1858 to 2000.
18.1	Mr Jeffrey Callaghan, Bureau of Meteorology	Papers: Long Term Variations in Tropical Cyclone Impacts; Southern Oscillation Index 1876 to present; and Damaging tropical cyclones in the South Pacific east from Fiji 1980 -1998.
19	Prof. Richard Lindzen	Papers presented at Public Hearing, Canberra, 3 November 2000.
20	Prof. Richard Lindzen	Prof. Richard Lindzen, Massachusetts Institute of Technology, <i>Does the earth have an adaptive infrared iris?</i> , 20 February 2000.
21	Climate Action Network Australia	Papers presented at Public Hearing, Canberra, 3 November 2000.
22	Australian Aluminium Council	<i>Australian Aluminium Industry: Contribution to the National Economy</i> , Report to Australian Aluminium Council by ACIL Consulting.
23	Comalco	Comalco, <i>Annual Report 1999 and Health, Safety, Environment and Communities Report 1999</i> .
23	Dr Sonja Boehmer- Christiansen	Papers on Climate Change.
25	Dr Brian O'Brien,	Papers to support Submission No. 71.
26	Dr Bill Burrows	Papers presented to Committee at Public Hearing, Brisbane, 18 October 2000.

List of witnesses at public hearings

Wednesday, 13 September 2000 - Melbourne

Individuals

Dr Sonja Boehmer-Christiansen, Independent Academic, University of Hull

Mr Robert Foster, Consultant

Dr Murray Rowden-Rich

Professor David Karoly, Director, Centre for Dynamical Meteorology, Department of Mathematics & Statistics, Monash University

Allen Consulting Group Pty Ltd

Mr Jon Stanford, Director

Miss Catherine Rooney, Senior Manager

Bureau of Meteorology

Dr Susan Barrell, Supervising Meteorologist, Policy & Secretariat Section

Dr Bryant McAvaney, Senior Principal Research Scientist

Ms Mary Voice, Head of the National Climate Centre

CSIRO

Dr Chris Mitchell, Manager, Greenhouse Key Accounts, Greenhouse Mitigation

Renewable Energy Generators Australia Ltd

The Hon Peter Rae, Chairman

Mr Ron Steenbergen, Environmental Officer

Wednesday, 27 September 2000 - Canberra

Individuals

Professor Warwick McKibbin, Convenor of Economics in the Research School of Pacific & Asian Studies

ABARE

Dr Brian Fisher, Executive Director

Mr Vivek Tulpule, Research Director, International Trade & Industries Directorate

Australian Petroleum Cooperative Research Centre

Dr Peter Cook, Executive Director

Australian Petroleum Production and Exploration Association

Mr Barry Jones, Executive Director

Commonwealth Government**Australian Greenhouse Office**

Ms Gwen Andrews, Chief Executive, Greenhouse Policy Group

Mr Ian Carruthers, Senior Executive Manager, Greenhouse Policy Group

Mr David Harrison, Special Adviser, Emissions Trading Unit

CSIRO

Dr Chris Mitchell, Manager, Greenhouse Key Accounts, Greenhouse Mitigation

Department of Foreign Affairs and Trade

Mr Ralph Hillman, Ambassador the the Environment

Department of Industry, Science and and Resources

Mr Stephen Irwin, General Manager, Greenhouse Response Branch, Energy & Environment Division

National Association of Forest Industries

Mr Warren Lang, Acting Executive Director

The Lavoisier Group

The Hon Peter Walsh, President

Mr Neville Evans, Secretary

Wednesday, 18 October 2000 - Brisbane**Individuals**

Prof Ian Lowe, School of Science, Griffith University

Mr Jeffrey Callaghan, Senior Meteorologist, Severe Weather Section, Bureau of Meteorology, Brisbane

Dr Bill Burrows, Senior Principal Scientist, Woodland Ecology, Department of Primary Industries, Queensland

Australian Aluminium Council

Mr David Coutts, Executive Director

Mr Geoffrey Ewing, General Manager, External Affairs, Comalco

Friday, 3 November 2000 - Canberra**Individuals**

Professor Richard Lindzen

Dr Brian O'Brien

Australian Chamber of Commerce and Industry

Ms Karen Curtis, Director, Industry Policy

Mr Andrew Tytherleigh, Environment Advisor

Australian Gas Association

Mr Bill Nagle, Chief Executive

Australian Gas Light Company

Mr Peter Shaw, Environmental Policy Officer

Mrs Leith Wood, Manager, Government & Environmental Affairs

Australia Institute Ltd

Dr Clive Hamilton, Executive Director

Climate Action Network Australia

Ms Anna Reynolds, Co-ordinator

Ms Esther Abram, Director, Environment Victoria

Ms Felicity Wishart, Coordinator, Queensland Conservation Council

Sustainable Energy Industry Association (Australia) Ltd

Mr David Abba, Chief Executive Officer

Professor Alan Pears, Policy Adviser

Monday, 4 December 2000 - Canberra**Australian Industry Greenhouse Network**

Mr John Eyles, Executive Director

Commonwealth Government**Agriculture, Fisheries and Forestry Australia**

Mr Volker Aeuckens, Senior Adviser, Greenhouse

Australian Greenhouse Office

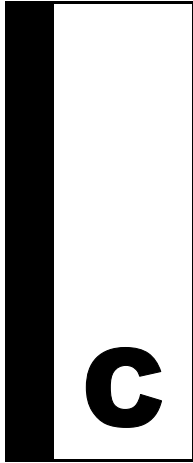
Mr Ian Carruthers, Senior Executive Manager, Greenhouse Policy Group

Department of Foreign Affairs and Trade

Mr Christopher Langman, Assistant Secretary, Environment Branch

Department of Industry, Science and Resources

Mr Stephen Irwin, General Manager, Greenhouse Response Branch,
Energy & Environment Division



Appendix C - The Kyoto Protocol

Kyoto Protocol to the United Nations Framework Convention on Climate Change

The Parties to this Protocol,

Being Parties to the United Nations Framework Convention on Climate Change, hereinafter referred to as “the Convention”,

In pursuit of the ultimate objective of the Convention as stated in its Article 2,

Recalling the provisions of the Convention,

Being guided by Article 3 of the Convention,

Pursuant to the Berlin Mandate adopted by decision 1/CP.1 of the Conference of the Parties to the Convention at its first session,

Have agreed as follows:

Article 1

For the purposes of this Protocol, the definitions contained in Article 1 of the Convention shall apply. In addition:

1. “Conference of the Parties” means the Conference of the Parties to the Convention.
2. “Convention” means the United Nations Framework Convention on Climate Change, adopted in New York on 9 May 1992.
3. “Intergovernmental Panel on Climate Change” means the Intergovernmental Panel on Climate Change established in 1988 jointly by the World Meteorological Organization and the United Nations Environment Programme.

4. “Montreal Protocol” means the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted in Montreal on 16 September 1987 and as subsequently adjusted and amended.
5. “Parties present and voting” means Parties present and casting an affirmative or negative vote.
6. “Party” means, unless the context otherwise indicates, a Party to this Protocol.
7. “Party included in Annex I” means a Party included in Annex I to the Convention, as may be amended, or a Party which has made a notification under Article 4, paragraph 2(g), of the Convention.

Article 2

1. Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

(a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:

- (i) Enhancement of energy efficiency in relevant sectors of the national economy;
- (ii) Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, taking into account its commitments under relevant international environmental agreements; promotion of sustainable forest management practices, afforestation and reforestation;
- (iii) Promotion of sustainable forms of agriculture in light of climate change considerations;
- (iv) Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;
- (v) Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention and application of market instruments;
- (vi) Encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol;

- (vii) Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector;
- (viii) Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy;

(b) Cooperate with other such Parties to enhance the individual and combined effectiveness of their policies and measures adopted under this Article, pursuant to Article 4, paragraph 2(e)(i), of the Convention. To this end, these Parties shall take steps to share their experience and exchange information on such policies and measures, including developing ways of improving their comparability, transparency and effectiveness. The Conference of Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, consider ways to facilitate such cooperation, taking into account all relevant information.

2. The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.

3. The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph.

4. The Conference of the Parties serving as the meeting of the Parties to this Protocol, if it decides that it would be beneficial to coordinate any of the policies and measures in paragraph 1(a) above, taking into account different national circumstances and potential effects, shall consider ways and means to elaborate the coordination of such policies and measures.

Article 3

1. The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.

2. Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments under this Protocol.
3. The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.
4. Prior to the first session of the Conference of the Parties serving as the meeting of the Parties to this Protocol, each Party included in Annex I shall provide, for consideration by the Subsidiary Body for Scientific and Technological Advice, data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the Intergovernmental Panel on Climate Change, the advice provided by the Subsidiary Body for Scientific and Technological Advice in accordance with Article 5 and the decisions of the Conference of the Parties. Such a decision shall apply in the second and subsequent commitment periods. A Party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990.
5. The Parties included in Annex I undergoing the process of transition to a market economy whose base year or period was established pursuant to decision 9/CP.2 of the Conference of the Parties at its second session shall use that base year or period for the implementation of their commitments under this Article. Any other Party included in Annex I undergoing the process of transition to a market economy which has not yet submitted its first national communication under Article 12 of the Convention may also notify the Conference of the Parties serving as the meeting of the Parties to this Protocol that it intends to use an historical base year or period other than 1990 for the implementation of its commitments under this Article. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall decide on the acceptance of such notification.

6. Taking into account Article 4, paragraph 6, of the Convention, in the implementation of their commitments under this Protocol other than those under this Article, a certain degree of flexibility shall be allowed by the Conference of the Parties serving as the meeting of the Parties to this Protocol to the Parties included in Annex I undergoing the process of transition to a market economy.
7. In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the assigned amount for each Party included in Annex I shall be equal to the percentage inscribed for it in Annex B of its aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A in 1990, or the base year or period determined in accordance with paragraph 5 above, multiplied by five. Those Parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount.
8. Any Party included in Annex I may use 1995 as its base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, for the purposes of the calculation referred to in paragraph 7 above.
9. Commitments for subsequent periods for Parties included in Annex I shall be established in amendments to Annex B to this Protocol, which shall be adopted in accordance with the provisions of Article 21, paragraph 7. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall initiate the consideration of such commitments at least seven years before the end of the first commitment period referred to in paragraph 1 above.
10. Any emission reduction units, or any part of an assigned amount, which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party.
11. Any emission reduction units, or any part of an assigned amount, which a Party transfers to another Party in accordance with the provisions of Article 6 or of Article 17 shall be subtracted from the assigned amount for the transferring Party.
12. Any certified emission reductions which a Party acquires from another Party in accordance with the provisions of Article 12 shall be added to the assigned amount for the acquiring Party.
13. If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, this difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods.
14. Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly

those identified in Article 4, paragraphs 8 and 9, of the Convention. In line with relevant decisions of the Conference of the Parties on the implementation of those paragraphs, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, consider what actions are necessary to minimize the adverse effects of climate change and/or the impacts of response measures on Parties referred to in those paragraphs. Among the issues to be considered shall be the establishment of funding, insurance and transfer of technology.

Article 4

1. Any Parties included in Annex I that have reached an agreement to fulfil their commitments under Article 3 jointly, shall be deemed to have met those commitments provided that their total combined aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of Article 3. The respective emission level allocated to each of the Parties to the agreement shall be set out in that agreement.
2. The Parties to any such agreement shall notify the secretariat of the terms of the agreement on the date of deposit of their instruments of ratification, acceptance or approval of this Protocol, or accession thereto. The secretariat shall in turn inform the Parties and signatories to the Convention of the terms of the agreement.
3. Any such agreement shall remain in operation for the duration of the commitment period specified in Article 3, paragraph 7.
4. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization, any alteration in the composition of the organization after adoption of this Protocol shall not affect existing commitments under this Protocol. Any alteration in the composition of the organization shall only apply for the purposes of those commitments under Article 3 that are adopted subsequent to that alteration.
5. In the event of failure by the Parties to such an agreement to achieve their total combined level of emission reductions, each Party to that agreement shall be responsible for its own level of emissions set out in the agreement.
6. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization which is itself a Party to this Protocol, each member State of that regional economic integration organization individually, and together with the regional economic integration organization acting in accordance with Article 24, shall, in the event of failure to achieve the total combined level of emission reductions, be responsible for its level of emissions as notified in accordance with this Article.

Article 5

1. Each Party included in Annex I shall have in place, no later than one year prior to the start of the first commitment period, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. Guidelines for such national systems, which shall incorporate the methodologies specified in paragraph 2 below, shall be decided upon by the Conference of the Parties serving as the meeting of the Parties to this Protocol at its first session.

2. Methodologies for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol shall be those accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties at its third session. Where such methodologies are not used, appropriate adjustments shall be applied according to methodologies agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Protocol at its first session. Based on the work of, *inter alia*, the Intergovernmental Panel on Climate Change and advice provided by the Subsidiary Body for Scientific and Technological Advice, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall regularly review and, as appropriate, revise such methodologies and adjustments, taking fully into account any relevant decisions by the Conference of the Parties. Any revision to methodologies or adjustments shall be used only for the purposes of ascertaining compliance with commitments under Article 3 in respect of any commitment period adopted subsequent to that revision.

3. The global warming potentials used to calculate the carbon dioxide equivalence of anthropogenic emissions by sources and removals by sinks of greenhouse gases listed in Annex A shall be those accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties at its third session. Based on the work of, *inter alia*, the Intergovernmental Panel on Climate Change and advice provided by the Subsidiary Body for Scientific and Technological Advice, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall regularly review and, as appropriate, revise the global warming potential of each such greenhouse gas, taking fully into account any relevant decisions by the Conference of the Parties. Any revision to a global warming potential shall apply only to commitments under Article 3 in respect of any commitment period adopted subsequent to that revision.

Article 6

1. For the purpose of meeting its commitments under Article 3, any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic

emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy, provided that:

- (a) Any such project has the approval of the Parties involved;
- (b) Any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur;
- (c) It does not acquire any emission reduction units if it is not in compliance with its obligations under Articles 5 and 7; and
- (d) The acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3.

2. The Conference of the Parties serving as the meeting of the Parties to this Protocol may, at its first session or as soon as practicable thereafter, further elaborate guidelines for the implementation of this Article, including for verification and reporting.

3. A Party included in Annex I may authorize legal entities to participate, under its responsibility, in actions leading to the generation, transfer or acquisition under this Article of emission reduction units.

4. If a question of implementation by a Party included in Annex I of the requirements referred to in this Article is identified in accordance with the relevant provisions of Article 8, transfers and acquisitions of emission reduction units may continue to be made after the question has been identified, provided that any such units may not be used by a Party to meet its commitments under Article 3 until any issue of compliance is resolved.

Article 7

1. Each Party included in Annex I shall incorporate in its annual inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, submitted in accordance with the relevant decisions of the Conference of the Parties, the necessary supplementary information for the purposes of ensuring compliance with Article 3, to be determined in accordance with paragraph 4 below.

2. Each Party included in Annex I shall incorporate in its national communication, submitted under Article 12 of the Convention, the supplementary information necessary to demonstrate compliance with its commitments under this Protocol, to be determined in accordance with paragraph 4 below.

3. Each Party included in Annex I shall submit the information required under paragraph 1 above annually, beginning with the first inventory due under the Convention for the first year of the commitment period after this Protocol has

entered into force for that Party. Each such Party shall submit the information required under paragraph 2 above as part of the first national communication due under the Convention after this Protocol has entered into force for it and after the adoption of guidelines as provided for in paragraph 4 below. The frequency of subsequent submission of information required under this Article shall be determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol, taking into account any timetable for the submission of national communications decided upon by the Conference of the Parties.

4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall adopt at its first session, and review periodically thereafter, guidelines for the preparation of the information required under this Article, taking into account guidelines for the preparation of national communications by Parties included in Annex I adopted by the Conference of the Parties. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall also, prior to the first commitment period, decide upon modalities for the accounting of assigned amounts.

Article 8

1. The information submitted under Article 7 by each Party included in Annex I shall be reviewed by expert review teams pursuant to the relevant decisions of the Conference of the Parties and in accordance with guidelines adopted for this purpose by the Conference of the Parties serving as the meeting of the Parties to this Protocol under paragraph 4 below. The information submitted under Article 7, paragraph 1, by each Party included in Annex I shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amounts. Additionally, the information submitted under Article 7, paragraph 2, by each Party included in Annex I shall be reviewed as part of the review of communications.

2. Expert review teams shall be coordinated by the secretariat and shall be composed of experts selected from those nominated by Parties to the Convention and, as appropriate, by intergovernmental organizations, in accordance with guidance provided for this purpose by the Conference of the Parties.

3. The review process shall provide a thorough and comprehensive technical assessment of all aspects of the implementation by a Party of this Protocol. The expert review teams shall prepare a report to the Conference of the Parties serving as the meeting of the Parties to this Protocol, assessing the implementation of the commitments of the Party and identifying any potential problems in, and factors influencing, the fulfilment of commitments. Such reports shall be circulated by the secretariat to all Parties to the Convention. The secretariat shall list those questions of implementation indicated in such reports for further consideration by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall adopt at its first session, and review periodically thereafter, guidelines for the review of implementation of this Protocol by expert review teams taking into account the relevant decisions of the Conference of the Parties.
5. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, with the assistance of the Subsidiary Body for Implementation and, as appropriate, the Subsidiary Body for Scientific and Technological Advice, consider:
 - (a) The information submitted by Parties under Article 7 and the reports of the expert reviews thereon conducted under this Article; and
 - (b) Those questions of implementation listed by the secretariat under paragraph 3 above, as well as any questions raised by Parties.
6. Pursuant to its consideration of the information referred to in paragraph 5 above, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall take decisions on any matter required for the implementation of this Protocol.

Article 9

1. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall periodically review this Protocol in the light of the best available scientific information and assessments on climate change and its impacts, as well as relevant technical, social and economic information. Such reviews shall be coordinated with pertinent reviews under the Convention, in particular those required by Article 4, paragraph 2(d), and Article 7, paragraph 2(a), of the Convention. Based on these reviews, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall take appropriate action.
2. The first review shall take place at the second session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. Further reviews shall take place at regular intervals and in a timely manner.

Article 10

All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7, of the Convention, shall:

- (a) Formulate, where relevant and to the extent possible, cost-effective national and, where appropriate, regional programmes to improve the quality of local emission factors, activity data and/or models which reflect the socio-

economic conditions of each Party for the preparation and periodic updating of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties, and consistent with the guidelines for the preparation of national communications adopted by the Conference of the Parties;

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change:

- (i) Such programmes would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change; and
- (ii) Parties included in Annex I shall submit information on action under this Protocol, including national programmes, in accordance with Article 7; and other Parties shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emissions, and enhancement of and removals by sinks, capacity building and adaptation measures;

(c) Cooperate in the promotion of effective modalities for the development, application and diffusion of, and take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries, including the formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain and the creation of an enabling environment for the private sector, to promote and enhance the transfer of, and access to, environmentally sound technologies;

(d) Cooperate in scientific and technical research and promote the maintenance and the development of systematic observation systems and development of data archives to reduce uncertainties related to the climate system, the adverse impacts of climate change and the economic and social consequences of various response strategies, and promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation, taking into account Article 5 of the Convention;

(e) Cooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programmes, including the strengthening of national capacity building, in particular human and institutional capacities and the exchange or secondment of personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change. Suitable modalities should be developed to implement these activities through the relevant bodies of the Convention, taking into account Article 6 of the Convention;

(f) Include in their national communications information on programmes and activities undertaken pursuant to this Article in accordance with relevant decisions of the Conference of the Parties; and

(g) Give full consideration, in implementing the commitments under this Article, to Article 4, paragraph 8, of the Convention.

Article 11

1. In the implementation of Article 10, Parties shall take into account the provisions of Article 4, paragraphs 4, 5, 7, 8 and 9, of the Convention.

2. In the context of the implementation of Article 4, paragraph 1, of the Convention, in accordance with the provisions of Article 4, paragraph 3, and Article 11 of the Convention, and through the entity or entities entrusted with the operation of the financial mechanism of the Convention, the developed country Parties and other developed Parties included in Annex II to the Convention shall:

(a) Provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in advancing the implementation of existing commitments under Article 4, paragraph 1(a), of the Convention that are covered in Article 10, subparagraph (a); and

(b) Also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of advancing the implementation of existing commitments under Article 4, paragraph 1, of the Convention that are covered by Article 10 and that are agreed between a developing country Party and the international entity or entities referred to in Article 11 of the Convention, in accordance with that Article.

The implementation of these existing commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among developed country Parties. The guidance to the entity or entities entrusted with the operation of the financial mechanism of the Convention in relevant decisions of the Conference of the Parties, including those agreed before the adoption of this Protocol, shall apply *mutatis mutandis* to the provisions of this paragraph.

3. The developed country Parties and other developed Parties in Annex II to the Convention may also provide, and developing country Parties avail themselves of, financial resources for the implementation of Article 10, through bilateral, regional and other multilateral channels.

Article 12

1. A clean development mechanism is hereby defined.

2. The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.

3. Under the clean development mechanism:

(a) Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and

(b) Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3, as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

4. The clean development mechanism shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Protocol and be supervised by an executive board of the clean development mechanism.

5. Emission reductions resulting from each project activity shall be certified by operational entities to be designated by the Conference of the Parties serving as the meeting of the Parties to this Protocol, on the basis of:

(a) Voluntary participation approved by each Party involved;

(b) Real, measurable, and long-term benefits related to the mitigation of climate change; and

(c) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.

6. The clean development mechanism shall assist in arranging funding of certified project activities as necessary.

7. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities.

8. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that a share of the proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.
9. Participation under the clean development mechanism, including in activities mentioned in paragraph 3(a) above and in the acquisition of certified emission reductions, may involve private and/or public entities, and is to be subject to whatever guidance may be provided by the executive board of the clean development mechanism.
10. Certified emission reductions obtained during the period from the year 2000 up to the beginning of the first commitment period can be used to assist in achieving compliance in the first commitment period.

Article 13

1. The Conference of the Parties, the supreme body of the Convention, shall serve as the meeting of the Parties to this Protocol.
2. Parties to the Convention that are not Parties to this Protocol may participate as observers in the proceedings of any session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. When the Conference of the Parties serves as the meeting of the Parties to this Protocol, decisions under this Protocol shall be taken only by those that are Parties to this Protocol.
3. When the Conference of the Parties serves as the meeting of the Parties to this Protocol, any member of the Bureau of the Conference of the Parties representing a Party to the Convention but, at that time, not a Party to this Protocol, shall be replaced by an additional member to be elected by and from amongst the Parties to this Protocol.
4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall keep under regular review the implementation of this Protocol and shall make, within its mandate, the decisions necessary to promote its effective implementation. It shall perform the functions assigned to it by this Protocol and shall:
 - (a) Assess, on the basis of all information made available to it in accordance with the provisions of this Protocol, the implementation of this Protocol by the Parties, the overall effects of the measures taken pursuant to this Protocol, in particular environmental, economic and social effects as well as their cumulative impacts and the extent to which progress towards the objective of the Convention is being achieved;
 - (b) Periodically examine the obligations of the Parties under this Protocol, giving due consideration to any reviews required by Article 4, paragraph 2(d), and

Article 7, paragraph 2, of the Convention, in the light of the objective of the Convention, the experience gained in its implementation and the evolution of scientific and technological knowledge, and in this respect consider and adopt regular reports on the implementation of this Protocol;

(c) Promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under this Protocol;

(d) Facilitate, at the request of two or more Parties, the coordination of measures adopted by them to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under this Protocol;

(e) Promote and guide, in accordance with the objective of the Convention and the provisions of this Protocol, and taking fully into account the relevant decisions by the Conference of the Parties, the development and periodic refinement of comparable methodologies for the effective implementation of this Protocol, to be agreed on by the Conference of the Parties serving as the meeting of the Parties to this Protocol;

(f) Make recommendations on any matters necessary for the implementation of this Protocol;

(g) Seek to mobilize additional financial resources in accordance with Article 11, paragraph 2;

(h) Establish such subsidiary bodies as are deemed necessary for the implementation of this Protocol;

(i) Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies; and

(j) Exercise such other functions as may be required for the implementation of this Protocol, and consider any assignment resulting from a decision by the Conference of the Parties.

5. The rules of procedure of the Conference of the Parties and financial procedures applied under the Convention shall be applied *mutatis mutandis* under this Protocol, except as may be otherwise decided by consensus by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

6. The first session of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be convened by the secretariat in conjunction with the first session of the Conference of the Parties that is scheduled after the date of the entry into force of this Protocol. Subsequent ordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be held every

year and in conjunction with ordinary sessions of the Conference of the Parties, unless otherwise decided by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

7. Extraordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be held at such other times as may be deemed necessary by the Conference of the Parties serving as the meeting of the Parties to this Protocol, or at the written request of any Party, provided that, within six months of the request being communicated to the Parties by the secretariat, it is supported by at least one third of the Parties.

8. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State member thereof or observers thereto not party to the Convention, may be represented at sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol as observers. Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by this Protocol and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties serving as the meeting of the Parties to this Protocol as an observer, may be so admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure, as referred to in paragraph 5 above.

Article 14

1. The secretariat established by Article 8 of the Convention shall serve as the secretariat of this Protocol.

2. Article 8, paragraph 2, of the Convention on the functions of the secretariat, and Article 8, paragraph 3, of the Convention on arrangements made for the functioning of the secretariat, shall apply *mutatis mutandis* to this Protocol. The secretariat shall, in addition, exercise the functions assigned to it under this Protocol.

Article 15

1. The Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation established by Articles 9 and 10 of the Convention shall serve as, respectively, the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Protocol. The provisions relating to the functioning of these two bodies under the Convention shall apply *mutatis mutandis* to this Protocol. Sessions of the meetings of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Protocol shall be held in conjunction with the meetings of, respectively, the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of the Convention.

2. Parties to the Convention that are not Parties to this Protocol may participate as observers in the proceedings of any session of the subsidiary bodies. When the subsidiary bodies serve as the subsidiary bodies of this Protocol, decisions under this Protocol shall be taken only by those that are Parties to this Protocol.

3. When the subsidiary bodies established by Articles 9 and 10 of the Convention exercise their functions with regard to matters concerning this Protocol, any member of the Bureaux of those subsidiary bodies representing a Party to the Convention but, at that time, not a party to this Protocol, shall be replaced by an additional member to be elected by and from amongst the Parties to this Protocol.

Article 16

The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, as soon as practicable, consider the application to this Protocol of, and modify as appropriate, the multilateral consultative process referred to in Article 13 of the Convention, in the light of any relevant decisions that may be taken by the Conference of the Parties. Any multilateral consultative process that may be applied to this Protocol shall operate without prejudice to the procedures and mechanisms established in accordance with Article 18.

Article 17

The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article.

Article 18

The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, approve appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance with the provisions of this Protocol, including through the development of an indicative list of consequences, taking into account the cause, type, degree and frequency of non-compliance. Any procedures and mechanisms under this Article entailing binding consequences shall be adopted by means of an amendment to this Protocol.

Article 19

The provisions of Article 14 of the Convention on settlement of disputes shall apply *mutatis mutandis* to this Protocol.

Article 20

1. Any Party may propose amendments to this Protocol.

2. Amendments to this Protocol shall be adopted at an ordinary session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. The text of any proposed amendment to this Protocol shall be communicated to the Parties by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate the text of any proposed amendments to the Parties and signatories to the Convention and, for information, to the Depositary.

3. The Parties shall make every effort to reach agreement on any proposed amendment to this Protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting. The adopted amendment shall be communicated by the secretariat to the Depositary, who shall circulate it to all Parties for their acceptance.

4. Instruments of acceptance in respect of an amendment shall be deposited with the Depositary. An amendment adopted in accordance with paragraph 3 above shall enter into force for those Parties having accepted it on the ninetieth day after the date of receipt by the Depositary of an instrument of acceptance by at least three fourths of the Parties to this Protocol.

5. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits with the Depositary its instrument of acceptance of the said amendment.

Article 21

1. Annexes to this Protocol shall form an integral part thereof and, unless otherwise expressly provided, a reference to this Protocol constitutes at the same time a reference to any annexes thereto. Any annexes adopted after the entry into force of this Protocol shall be restricted to lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character.

2. Any Party may make proposals for an annex to this Protocol and may propose amendments to annexes to this Protocol.

3. Annexes to this Protocol and amendments to annexes to this Protocol shall be adopted at an ordinary session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. The text of any proposed annex or amendment to an annex shall be communicated to the Parties by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate the text of any proposed annex or amendment to an annex to the Parties and signatories to the Convention and, for information, to the Depositary.

4. The Parties shall make every effort to reach agreement on any proposed annex or amendment to an annex by consensus. If all efforts at consensus have

been exhausted, and no agreement reached, the annex or amendment to an annex shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting. The adopted annex or amendment to an annex shall be communicated by the secretariat to the Depositary, who shall circulate it to all Parties for their acceptance.

5. An annex, or amendment to an annex other than Annex A or B, that has been adopted in accordance with paragraphs 3 and 4 above shall enter into force for all Parties to this Protocol six months after the date of the communication by the Depositary to such Parties of the adoption of the annex or adoption of the amendment to the annex, except for those Parties that have notified the Depositary, in writing, within that period of their non-acceptance of the annex or amendment to the annex. The annex or amendment to an annex shall enter into force for Parties which withdraw their notification of non-acceptance on the ninetieth day after the date on which withdrawal of such notification has been received by the Depositary.

6. If the adoption of an annex or an amendment to an annex involves an amendment to this Protocol, that annex or amendment to an annex shall not enter into force until such time as the amendment to this Protocol enters into force.

7. Amendments to Annexes A and B to this Protocol shall be adopted and enter into force in accordance with the procedure set out in Article 20, provided that any amendment to Annex B shall be adopted only with the written consent of the Party concerned.

Article 22

1. Each Party shall have one vote, except as provided for in paragraph 2 below.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States that are Parties to this Protocol. Such an organization shall not exercise its right to vote if any of its member States exercises its right, and vice versa.

Article 23

The Secretary-General of the United Nations shall be the Depositary of this Protocol.

Article 24

1. This Protocol shall be open for signature and subject to ratification, acceptance or approval by States and regional economic integration organizations which are Parties to the Convention. It shall be open for signature at United Nations Headquarters in New York from 16 March 1998 to 15 March 1999. This Protocol shall be open for accession from the day after the date on which it is

closed for signature. Instruments of ratification, acceptance, approval or accession shall be deposited with the Depositary.

2. Any regional economic integration organization which becomes a Party to this Protocol without any of its member States being a Party shall be bound by all the obligations under this Protocol. In the case of such organizations, one or more of whose member States is a Party to this Protocol, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Protocol. In such cases, the organization and the member States shall not be entitled to exercise rights under this Protocol concurrently.

3. In their instruments of ratification, acceptance, approval or accession, regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by this Protocol. These organizations shall also inform the Depositary, who shall in turn inform the Parties, of any substantial modification in the extent of their competence.

Article 25

1. This Protocol shall enter into force on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Parties included in Annex I which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession.

2. For the purposes of this Article, "the total carbon dioxide emissions for 1990 of the Parties included in Annex I" means the amount communicated on or before the date of adoption of this Protocol by the Parties included in Annex I in their first national communications submitted in accordance with Article 12 of the Convention.

3. For each State or regional economic integration organization that ratifies, accepts or approves this Protocol or accedes thereto after the conditions set out in paragraph 1 above for entry into force have been fulfilled, this Protocol shall enter into force on the ninetieth day following the date of deposit of its instrument of ratification, acceptance, approval or accession.

4. For the purposes of this Article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States members of the organization.

Article 26

No reservations may be made to this Protocol.

Article 27

1. At any time after three years from the date on which this Protocol has entered into force for a Party, that Party may withdraw from this Protocol by giving written notification to the Depositary.
2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depositary of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.
3. Any Party that withdraws from the Convention shall be considered as also having withdrawn from this Protocol.

Article 28

The original of this Protocol, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

DONE at Kyoto this eleventh day of December one thousand nine hundred and ninety-seven.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have affixed their signatures to this Protocol on the dates indicated.

Annex A

Greenhouse gases

Carbon dioxide (CO) 2

Methane (CH) 4

Nitrous oxide (N O) 2

Hydrofluorocarbons (HFCs)

Perfluorocarbons (PFCs)

Sulphur hexafluoride (SF) 6

Sectors/source categories

Energy

Fuel combustion

Energy industries

Manufacturing industries and construction

Transport

Other sectors

Other

Fugitive emissions from fuels

Solid fuels

Oil and natural gas

Other

Industrial processes

Mineral products

Chemical industry

Metal production

Other production

Production of halocarbons and sulphur hexafluoride

Consumption of halocarbons and sulphur hexafluoride

Other

Solvent and other product use

Agriculture

Enteric fermentation

Manure management

Rice cultivation

Agricultural soils

Prescribed burning of savannas

Field burning of agricultural residues

Other

Waste

Solid waste disposal on land

Wastewater handling

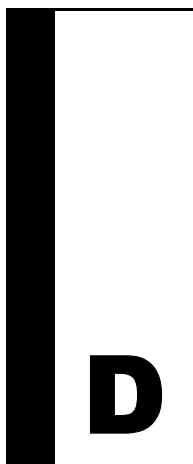
Waste incineration

Other

Annex B

Party	Quantified emission limitation or reduction commitment (percentage of base year or period)
Australia	108
Austria	92
Belgium	92
Bulgaria*	92
Canada	94
Croatia*	95
Czech Republic*	92
Denmark	92
Estonia*	92
European Community	2
Finland	92
France	92
Germany	92
Greece	92
Hungary*	94
Iceland	110
Ireland	92
Italy	92
Japan	94
Latvia*	92
Liechtenstein	92
Lithuania*	92
Luxembourg	92
Monaco	92
Netherlands	92
New Zealand	100
Norway	101
Poland*	94
Portugal	92
Romania*	92
Russian Federation*	100
Slovakia*	92
Slovenia*	92
Spain	92
Sweden	92
Switzerland	92
Ukraine*	100
United Kingdom of Great Britain and Northern Ireland	92
United States of America	93

*Countries that are undergoing the process of transition to a market economy.



Appendix D - Issues under negotiation

Flexibility mechanisms

The Kyoto Protocol established three innovative mechanisms that developed countries may use to lower the costs of meeting their national emission targets - the clean development mechanism (CDM), joint implementation and emissions trading.

Clean Development Mechanism

The CDM assists developed countries to reduce emissions through cooperative projects with developing countries. Developed countries claim reductions against their emissions total, while developing countries benefit from projects which contribute to sustainable development. CDM will function under the authority of the COP, which will facilitate projects and certify reduction credits.

One of the advantages of the CDM is that it should bring on technology transfer. Therefore, a country with a target can undertake a project in a developing country and take the credits for that project, which in many cases will involve cleaner technologies in terms of greenhouse gases. DFAT claimed that the CDM is significant because it will involve developing countries in greenhouse action and give developed countries access to low-cost abatement opportunities in developing countries, thereby lowering the global cost of reaching their Kyoto targets. It will also lead to substantial flows of investment and technology to developing countries.¹

Developing countries are also seeking financial and technology flows as part of a package. They are seeking funding for adaptation to climate change and for

¹ Ralph Hillman (DFAT), *Transcript of Evidence*, 27 September 2000, p. TR98.

building institutional capacity to deal with greenhouse. They also want technology transfer beyond what will come from the CDM.

The EU, with support of most developing countries and most green non-government organisations has sought to limit the extent to which emissions trading and the CDM can be used. They argue that the US will avoid substantial emission reductions at home by purchasing Russian emission credits arising from the collapse of the Russian economy. However, Australia and other members of the umbrella negotiating group are committed to the uncapped free use of emissions trading and other flexibility mechanisms.²

Another issue to be resolved is whether only projects relating to emissions limitation should be eligible for the CDM, or if reforestation and other sink activities should be allowed too. The EU and other developing countries also have concerns about the permanence of sinks such as forests which may not last as long as the amount of time that the pollution is in the atmosphere.

Emissions trading

Emissions trading is a mechanism to assist developed countries in meeting their targets by debiting or crediting each Party's greenhouse emissions. Developed countries that reduce emissions more than is required by their national target will be able to sell their excess emissions credits to countries that find it more difficult or expensive to reduce their own emissions.

ABARE modelling suggests that emissions trading alone would reduce the global cost of meeting Kyoto targets by 80 percent and for Australia by 20 percent.³

On 23 August 2000, Senator Minchin announced that the government would only introduce a mandatory national emissions trading system if the Kyoto Protocol is ratified by Australia, has entered into force and there is an established international emissions trading regime. The AGO is exploring the design issues of an emissions trading system through an extensive program of consultation with government, industry and the community.⁴

Joint implementation

Joint implementation refers to projects between developed countries where the parties may fulfil their commitments jointly. The emission reductions or carbon credits generated from the projects are to be transferred between the parties, provided they are additional to the domestic efforts to achieve reductions.

2 Ralph Hillman (DFAT), *Transcript of Evidence*, 27 September 2000, p. TR99.

3 ABARE, *Economic Impacts of the Kyoto Protocol – Accounting for the three major greenhouse gases*, May 1999.

4 AGO, *Submission No. 112.1*.

Sinks

Sinks are native vegetation processes which remove carbon from the atmosphere. Sinks are of critical importance to Australia because definitions and rules to be adopted will impact on the size of Australia's abatement task as well as the costs. Senator Hill spoke of the importance of the definitions of Australia's vegetation in the Kyoto Protocol:

For example, many of Australia's forests are very different to those of northern latitude developed countries. Our 50 million hectares of savanna woodlands are made up of widely spaced trees. Rules that work well for the dense forests of Canada or Sweden might not be appropriate for these open Australian woodlands.⁵

Currently, removals by sinks are limited to afforestation, reforestation and deforestation. Australia is seeking definitions for afforestation, reforestation and deforestation that:

- are sufficiently flexible to allow inclusion of the diversity of Australia's forest estate and those of other developed countries;
- are consistent with the National Forest Inventory;
- will allow Australia to gain credit for reducing rates of land clearing during the commitment period (2008-2012); and
- ensure that carbon sequestered and emitted by these activities can be measured at low cost through the National Carbon Accounting System and other existing data sources.⁶

The AGO has provided us with a copy of its submissions of 1 August and 16 September 2000 to the UNFCCC Secretariat on how greenhouse sinks provisions of the Kyoto Protocol, including Articles 3.3 and 3.4 should be implemented.⁷

Additional human-induced activities related to removals of greenhouse gas emissions by sinks in the agricultural soils and the land use change and forestry sectors are still being negotiated by COPs. Australia supports the inclusion of additional sink activities. Dr Burrows claimed that grazed woodlands in Queensland are a substantial sink. He claimed that there is a minimum sink of 150 million tonnes of carbon dioxide per year in Australia's grazed woodlands which is presently unaccounted for. This would significantly reduce the published net emissions of 520 million tonnes of carbon dioxide per year.⁸

5 Senator the Hon Robert Hill, Opening Address, High Level Forum on Greenhouse Sinks, 18 April 2000.

6 AGO, *Submission No. 112*, p. 8.

7 AGO, *Submission No. 112.2*.

8 Dr Bill Burrows, *Transcript of Evidence*, 18 October 2000, p. TR224.

The challenge is to provide sufficient certainty on the measurement of the positive effects of sinks. Reliable measurement and verification of carbon sinks is an important element attached to the Kyoto Protocol provisions on sinks. The CRC for Greenhouse Accounting works with the Australian National University, CSIRO, the AGO, the Bureau of Rural Sciences and state departments to improve understanding of the carbon cycle and to develop verifiable methods for measuring carbon fluxes, sources and sinks.

Compliance

A key question on compliance under the Kyoto Protocol is what the consequences of non compliance should be. A compliance system is required to help parties comply with their emission abatement targets and to sanction those parties that fail to meet their targets. One of the most difficult issues to be resolved is the consequences if a party failed to meet its target. Proposals have ranged from facilitative means designed to help parties overcome the implementation problems to enforcement or harsh penalties, such as financial penalties or removal of access to emission trading. Australia favours non-punitive consequences which help a Party improve its performance and repair the environmental damage of the breach.

Another important issue is the composition of a possible supernational compliance body of enforcement of the Kyoto Protocol. Australia's position is that such a body should consist of a majority from Annex 1 countries, therefore, decisions on compliance would be made by individuals whose countries also have obligations and targets.⁹

Developing countries

The absence of emission commitments under the Protocol for developing countries has the potential to undermine the global environmental effectiveness of abatement action undertaken in developed countries, and impact upon the competitiveness of some Australian industries.

The United States has made it clear that it would not ratify the Protocol unless developing countries take on targets. However, the developing country negotiating bloc strongly resist taking on targets. They contend that as developed countries are historically responsible for the rise in greenhouse gases, they should bear the burden of taking on emission reduction. For the EU, Japan, New Zealand and Norway, the question is not a ratification issue, as long as a reasonable package of decisions covering the flexibility mechanisms, sinks and compliance is accepted.¹⁰

9 Ralph Hillman (DFAT), *Transcript of Evidence*, 27 September 2000, p. TR114.

10 Ralph Hillman (DFAT), *Transcript of Evidence*, 27 September 2000, p. TR100.