



**Stern Review on the Economics of Climate  
Change**

**Australian Academy of Technology Sciences and  
Engineering**

**March 2006**

## **Stern Review on the Economics of Climate Change Response by**

### **Australian Academy of Technological Sciences and Engineering**

The Australian Academy of Technological Sciences and Engineering (ATSE) is pleased to have the opportunity to respond to the Stern Review on the Economics of Climate Change, What is the Economics of Climate Change?, Discussion Paper, 31 January 2006. We note that the Discussion Paper is a very comprehensive and balanced document which provides a forum for debate and policy formulation on the issue of climate change.

The Australian Academy of Technological Sciences and Engineering (ATSE) is an association of 733 professional men and women of achievement in the application of science, technology and engineering to Australian life. The Academy and the three other established learned Academies (Science, Social Sciences and Humanities) between them cover virtually all aspects of Australian professional life except the medical specialities. ATSE's mission is to promote the application of scientific and engineering knowledge to practical purposes.

Since its establishment in 1976, ATSE has provided advice on a wide range of scientific and technological matters to government and industry. Our activities relevant to Climate Change include:

- A National Symposium (1995), 'Greenhouse Abatement Measures: No Regrets Action Now' ,
- A major publication, 'Climate Change Science: Current Understanding and Uncertainties' (March 1995). A report of a study in association with the Australian Academy of Science and the Academy of the Social Sciences in Australia
- Climate Change Science Workshop (April 2002)
- ATSE policy on Climate Change (Last Revised February 2006)
- ATSE Focus (Number 140, March 2006 Edition)

The Academy welcomes and encourages individual debate amongst its Fellowship with respect of the many issues pertaining to climate change; for example, see ATSE Focus, March 2006 edition, which is attached. The views expressed in the Focus publication are not necessarily those of the Academy, rather they are the independent views of a number of our Fellows. In addition, the Academy has produced a Statement on Climate Change, which was prepared by an expert group of Fellows of ATSE and endorsed by the Council of the Academy at its meeting on 18 May 2004; the Policy Statement is attached.

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*The statement below was prepared by an expert group of Fellows of the Australian Academy of Technological Sciences and Engineering (ATSE). It was endorsed by the Academy Council at its meeting on 18 May 2004 for publication in ATSE Focus for information and wider comment. It underwent minor revision in the light of comments received and now represents the current Academy Policy on Climate Change.*

**The Australian Academy of Technological Sciences and Engineering (ATSE) is convinced that the implications of climate change (both natural variability and human induced change) for Australia cannot be ignored. The Academy accepts the broad thrust**

**of the consensus of expert opinion on the science of climate change prepared by the Intergovernmental Panel on Climate Change (IPCC) but believes considerable care is needed to avoid overstatement of both the level of confidence and the uncertainties in the science. It supports the IPCC's peer assessment process and encourages the expert science community to continue to refine and, as necessary, adjust their assessment of the state of knowledge, particularly on observed, and possible future, climate change at the national and regional scale in the light of progress in the monitoring and modeling of climate processes.**

**While the Academy has, so far, adopted a 'no regrets' approach to climate change mitigation and emphasized the importance of careful planning for adaptation to unmitigated climate change, it fully recognizes the concept international strategies for greenhouse gas emission reduction as a global public good. While having taken no stance on Australian ratification of the Kyoto Protocol to the Framework Convention on Climate Change, the Academy strongly supports the stimulus for development of low greenhouse gas emission technologies and enhanced carbon dioxide sequestration that commitment to the targets of the Kyoto Protocol provides. It supports a strong Australian commitment to the development of low or zero greenhouse gas emission technologies for the longer term.**

The Academy has taken a strong interest in the scientific, technological and engineering aspects of the climate change issue since the potential implications of greenhouse warming became the subject of intense national and international debate in the 1980's. Several of its Fellows have been deeply involved in the international assessment of information relevant to the climate change debate through their participation in the work of the Intergovernmental Panel on Climate Change (IPCC), the United Nations System body set up in 1988 to provide all countries with the opportunity to take part in the international scientific assessment of the climate change issue. The Academy carried out a major study of current understanding and uncertainties in the climate change debate in 1995 and reviewed and reassessed its conclusions in 2002. It also convened a major national symposium on the policy response to the greenhouse issue in 1995 and collaborated closely with Australia's three other learned Academies, through the National Academies Forum (NAF), in organising a National Conference on Climate Change Impacts and Adaptation in December 2002. The Academy, along with a number of its individual Fellows, continues to play a leading role in progressing the national understanding of the science, impacts and policy implications of enhanced greenhouse warming and climate change.

The Academy's 1995 Report 'Climate Change Science: Current Understanding and Uncertainties' (1) was prepared, from a special Australian perspective, in parallel with the IPCC's Second Assessment Report and in full awareness of the international debate on the emerging content of the IPCC Assessment. Its 2002 Update Report (2) was prepared with the help of the number of Australian scientists who have contributed as authors or peer reviewers to the IPCC's Third Assessment Report (3), as well as a number of Australian climate scientists who had not been involved with the IPCC assessment and several Australian critics of the IPCC Report.

The Academy Update reviewed the individual scientific conclusions of the IPCC (including the IPCC assessment of observed and projected rates of global warming) and areas of concern and disagreement such as on the validity of the reconstruction of the historical record of the last 1000 years, the uncertainty of the role of aerosols in offsetting greenhouse warming and the validity of model projections of global climate through the twenty-first century. The Academy has concluded that the prospect of human-induced climate change remains a sufficiently serious

issue for Australia that it (the Academy) should give priority to contributing its expertise to formulation of a well-informed and balanced national response.

The Academy is committed, therefore, to building on the outcome of its 1995 Symposium (4) to support the development of a scientifically well-informed and balanced Australian response to the climate change issue. In particular, the Academy supports:

- a. the development of a better scientific understanding of Australian and global climate through enhanced monitoring and research and active Australian participation in the international research effort;
- b. continuing Australian support for the IPCC Assessment process (5) and the comprehensive and transparent involvement of Australian scientists, technologists, economists and policy experts in future IPCC assessments;
- c. strategic commitment to the development of low-greenhouse-gas-emission technologies in the Australian energy industry and agricultural sectors and continuing support for Australian research on greenhouse gas sequestration; and
- d. a special Australian focus on the challenges of adaptation to unmitigated climate change (6), including both the natural variability of Australian climate and the human-induced climate change which is, at present, expected to result from the global build-up of greenhouse gas concentrations in the atmosphere.

The Academy recognises the importance of energy efficiency and the scope for more efficient energy use to help minimize Australia's greenhouse gas emissions as well as making better use of its fossil fuel resources. It also recognizes that, while strongly supportive of, and optimistic on the long-term prospects for, renewable and low emission energy sources, the medium-term future will necessarily depend heavily on coal so that it is incumbent on Australia to explore and employ whatever technologies are potentially available to reduce the climatic impact of continued use of fossil fuels.

The Academy will be pleased to continue to work with its sister Academies (especially the Australian Academy of Science and the Academy of Social Sciences in Australia), Engineers Australia, the environmental community, industry and government to ensure that this important, complex and sensitive issue is addressed on the basis of objective and responsible consideration of all relevant scientific, technological, environmental, social and economic information.

## References

1. Climate Change Science: Current Understanding and Uncertainties: Steering Committee of the Climate Change Study. ATSE, Melbourne, 1995, 100pp.
2. Climate-Change Science: An Update of Current Understanding and Uncertainties: Participants at the Workshop held in Melbourne on 4 April 2002. ATSE, Melbourne, 2002, 7pp.
3. Climate Change 2001: Synthesis Report. Contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press 2001, 397pp.
4. Greenhouse Gas Abatement Measures: No Regrets Action Now. Proceedings of the Symposium held in Melbourne on 17-18 October 1995. ATSE, Melbourne, 1995, 305pp.
5. The IPCC Third Assessment Report on the Scientific Basis of Climate Change (J W

- Zillman) Australian Journal of Environmental Management, (8 Sept 2001) pp169-185.
6. Living with Climate Change. Proceedings of a National Conference on Climate Change Impacts and Adaptation. National Academies Forum 2003, 248pp.

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