

Submission

to

Senate Employment, Workplace Relations and Education
References Committee

Inquiry into the Office of the Chief Scientist

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Australian
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**Submission to the Senate Standing Committee on
Employment, Workplace Relations and Education References**

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Submission from Australia Conservation Foundation

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Introduction

The following is a formal submission by the Australia Conservation Foundation (ACF) to the Senate Committee Inquiry into the Office of the Chief Scientist.

ACF has been a leading national environment organisation for over 30 years and has active programs in all States and Territories that promote, defend, conserve and celebrate our unique environment and our shared natural and cultural inheritance.

ACF welcomes this opportunity to contribute to the Senate Committee Inquiry into the Office of the Chief Scientist and holds the view that the dual employment role of the Chief Scientist gives rise to both a potential conflict of interest and the very real – and deeply damaging - public perception of such a conflict.

ACF believes that the Chief Scientist's dual employment role has led to an over-reliance by the Australian Government on an unproven technology to reduce greenhouse emissions – geosequestration - and that this has come at a major cost to Australia's renewable energy industry.

It is unlikely that an individual can hold two related but disparate positions without having a conflict, and we believe it would be extremely difficult to create clear demarcations between two distinct roles. In his dual role as Chief Technologist for Rio Tinto and Chief Scientist for the Australian Government the Chief Scientist is faced with a clear conflict of interest.

ACF believes that this conflict of interest must be directly addressed by the Australian Government. ACF further believes that the Chief Scientist should be a full time position.

Dangerous Climate Change

"Climate change is the most severe problem that we are facing today, more serious than the threat of terrorism."

Sir David King, Chief Scientific Adviser, UK Government, 2004

The reality of climate change emerged as an international issue in the late 1980s and the key international policy initiatives to combat climate change are enshrined in the climate change convention.¹

Human pollution through greenhouse gases has already created a 0.6°C rise in the average global temperature since the 1880s. Even this level of change is already causing impacts in Australia including the increased severity of recent drought and bushfires and destruction and damage to our coral reefs. To avoid severe and irreversible damage to our unique continent and our rich natural heritage major reductions in greenhouse gas emissions are urgently required.

The Intergovernmental Panel on Climate Change identified a range of impacts to ecosystems and human health and that extreme weather events are more likely to occur if global temperatures increase above 2°C. This dangerous temperature threshold needs to be avoided to lower the risk of large and irreversible changes

¹ Article 2 of the Framework Convention on Climate Change (FCCC)

occurring. Figure 1 illustrates a range of potential impacts for a given change in temperature for a number of Australia's World Heritage listed environments.²

Figure 1: Potential Impact of Temperature Changes on Australia World Heritage Sites

	Temperature Change →		
	1°C	2°C	3°C
Kakadu Freshwater Wetlands: ³	Small to moderate damage	Up to 50% loss	
Wet Tropics Rainforests:		Up to 50% reduction in range of 21 regionally unique vertebrates	
Great Barrier Reef:	Small to moderate damage	Moderate to severe damage	

Need for Major Emission Reductions

Australia is very vulnerable to climate change. Avoiding the impacts of a 2-3°C increase in global temperature requires that significant carbon dioxide emission reductions be made within the next 20 years.

The Kyoto Protocol is the first step along a very long road towards significantly reducing global greenhouse gas emissions. In order to avoid a 2°C increase in global temperature above pre-industrial levels, industrialised nations will need to reduce their carbon dioxide emissions in the order of 20-60% below 1990 levels by 2020.

Assuming that developing nations emissions peak and begin to fall by the middle of the century then by 2050 carbon dioxide reductions from the current industrialised nations, including Australia, must be 60-90% below 1990 levels.

Role of Geo-Sequestration

Achieving major reductions in greenhouse gases will require the application of a wide-range of different policies, measures and technologies.⁴ Geo-Sequestration may play a role in this however before this can be accessed many unresolved issues need to be addressed, including:

Cost Effectiveness: There is a broad international consensus that an approach combining energy efficiency, cogeneration, renewable energy and low emission fossil

² See: Hare W (2003) **Assessment of Knowledge on Impacts of Climate Change – Contribution to the Specification of Art. 2 of the UNFCCC**. Special Report prepared for WGBU. Potsdam, Berlin, Germany; Williams SE, Hilbert DW (2004) **Climate Change Threats to the Biological Diversity of Tropical Rainforests in Australia**. Laurance WF, Peres C (eds) *Emerging Threats to Tropical Forests*, in press; Hoegh-Guldberg O (2004) **Coral Reefs in a Century of Rapid Environmental Change**. *Symbiosis*, 37, in press.

³ This estimate is highly uncertain. See: Hare W (2003) **Assessment of Knowledge on Impacts of Climate Change – Contribution to the Specification of Art. 2 of the UNFCCC**. Special Report prepared for WGBU. Potsdam, Berlin, Germany.

⁴ See plenary address to the American Association for the Advancement of Science (AAAS) by Sir David King, Chief Scientific Adviser to the UK Government: http://www.britainusa.com/science/articles_show.asp?SarticleType=1&Article_ID=4786&i=

fuel generation (e.g. gas generation) offers the greatest potential for large-scale emission reductions.⁵

Timeliness: Geo-sequestration is also not expected widely available for use before at least 2015.⁶ Such a delay in significant action on climate change would almost guarantee that we suffer from dangerous climate change.

Opportunity Cost: There are serious concerns about the feasibility of sequestering a significant proportion of Australia's emissions underground.⁷ Continuing investment in a long-term coal industry also has wider economic effects, eg. coal fired electricity is a relatively poor creator of jobs per dollar invested⁸ compared to the major job potential available through development and deployment of energy efficiency and renewable energy.⁹

Permanence: Carbon dioxide must be stored safely and permanently for thousands of years if it is to be effective in stabilising atmospheric concentrations of carbon dioxide.

Liability: It is unclear how governments can guarantee that proponents will take liability for the lifetime of the storage and how they will guarantee that the environmental cost of failed projects is recovered.

Intergenerational equity: Geo-sequestration shifts the responsibility to manage our waste on to future generations. This is not consistent with sound public policy development however there has been little or no public discussion whether society views this as acceptable. Also the more we rely on geo-sequestration the greater the amount of waste that will need to be managed by future generations.

Overall, it remains to be seen whether geo-sequestration can play a major if any role stabilising the climate.

ACF is concerned that the Chief Scientist and the governing PMSEIC body is overly and inappropriately focusing on only one as yet unproven technology to reduce greenhouse emissions and that this has come at a major cost to Australia's renewable energy industry. The growing government support for geo-sequestration over renewable energy is demonstrated by:

The Federal government has committed \$45 million to geo-sequestration research since November 2002.

"Capture and sequestration of CO₂" is considered to be one of Australia's National Research Priorities.

⁵ See Intergovernmental Panel on Climate Change (2001) **Third Assessment Report**. Geneva; United Nations Development Programme (2002) **World Energy Assessment**. Geneva.

⁶ MacGill I, Outhred H, Passey R (2003) **Climate Change and the Australian Electricity Industry: What Role for Geosequestration?** ERGO Draft Discussion Paper, Sydney.

⁷ MacGill I, Outhred H, Passey R (2003) **Climate Change and the Australian Electricity Industry: What Role for Geosequestration?** ERGO Draft Discussion Paper, Sydney.

⁸ MacGill I, Watt M, Passey R (2002) **Jobs and Investment Potential of Renewable Energy: Australian Case Studies**. ACRE AEPG Report. Sydney.

⁹ For example: It has been estimate that an Mandatory Renewable Energy Target of 10% by 2010 could create over 20,000 jobs in the wind energy industry alone. A paper for the Ministerial Council on Energy, concluded that energy efficiency savings could deliver a \$1.8 billion benefit to GDP, create around 9,000 jobs and reduce emissions from the stationary energy sector by 9% over the next 12 years. See: Passey R (2003) **Creating Jobs for Australians: A summary of submissions to the Mandatory Renewable Energy Target (MRET) Review Focussing on Job Creation Potential**. Report for Greenpeace Australia/Pacific, Sydney and SEAV (2003) **Towards a National Framework on Energy Efficiency – Issues and challenges**. Melbourne.

The Federal Government support for R&D into renewable energy has been cut back to the point where there is no dedicated funding. In addition, the Energy Research and Development Corporation was abolished in 1997 and in 2002 an application to renew funding for the Australian Centre for Renewable Energy was rejected.

The government clearly has a role in supporting socially beneficial R&D. A difficult balance must be struck between the risks of governments attempting to pick winners against the need to focus limited public resources. As noted by researchers from the Tyndall Centre in the UK:¹⁰

“In principle, it is essential that the government does not ‘pick winners’. A diverse portfolio of basic research, development, demonstration, and technologies should be supported to allow large uncertainties associated with future directions of technical change, as well as rapidly shifting market conditions. It is, however, equally important that this need for diversity does not dilute public R&D effort because it is thought to be a good idea to do a bit of everything.”

With its focus on geo-sequestration the government is attempting to pick a winner. This is not a prudent approach and comes at the cost of Australia’s renewable energy industry and the development of a comprehensive greenhouse strategy.

Summary: A Conflict of Interest

Rio Tinto is a major global resource company with extensive interests in coal and obviously as a significant interest in maintaining Australia’s depends on coal fired electricity generation. Rio Tinto states that it “... *has significant exposure to existing and emerging greenhouse gas reduction measures*”, is opposed the expansion of the Mandatory Renewable Energy Target (because picks it a “technology winner”) and supports “*energy efficiency programs and fossil fuel technologies; with particular emphasis on carbon dioxide capture and storage and other technologies that will effectively reduce greenhouse gas emissions*”.¹¹ [emphasis added]

The corporate interests and imperatives of Rio Tinto are not the same as the Australian national interest and this distinction is not clear in the current approach to greenhouse issues.

It is unlikely that an individual can hold two related but disparate positions without having a conflict of interest. In his dual role as Chief Technologist for Rio Tinto and Chief Scientist for the Australian Government the Chief Scientist is faced with a clear conflict of interest.

¹⁰ Watson J, Scott A (2001) **An Audit of UK Energy R&D: Options to Tackle Climate Change**. Tyndall Briefing Note No.3, UK.

¹¹ Rio Tinto. Submission to the Renewable Energy (Electricity) Act 2000. <http://www.mretreview.gov.au/pubs/mret-submission51.pdf>