



THE GARNAUT REVIEW

Mitigation and Adaptation

ENVIRONMENTALLY SPEAKING 17

Special Supplement

Australia has a larger interest in a strong mitigation outcome than other developed countries. We are already a hot and dry country; small variations in climate are more damaging to us than to other developed countries. We live in a region of developing countries, which are in weaker positions to adapt to climate change than wealthy countries with robust political and economic institutions. The problems of our neighbours would inevitably become our problems. And the structure of our economy means that our terms of trade would be damaged more by the effects of climate change than would those of any other developed country.



So we have much to contribute and much to lose as we face the diabolical policy challenge of climate change.

On Friday October 3, 2008, Professor Ross Garnaut presented his recently released report at an event hosted by the Committee for Economic Development of Australia (CEDA). The introduction was given by the NSW Deputy Premier who proclaimed the State's commitment to addressing climate change. A glowing vote of thanks came from the former Prime Minister, Bob Hawke, who told the audience that the current economic ills were no excuse for deferring necessary structural reform. He also admitted that 'the times they are a changin'. Professor Garnaut took 18 questions from the floor with the last of these coming from the Co-Director of Australian Youth Climate Coalition. She suggested that the Professor's recommended emission targets were too low and that it would be younger generations bearing the burden of too little action, too late. Garnaut replied: "***you don't get a good result by wishing it...I've tried to articulate the most likely way to get to the most ambitious targets.***"

'The times they are a changin' but 'business as usual' could well prevail in the short term. Garnaut was asked to conduct a review examining the impacts of climate change on the Australian economy. Although he has chosen emotive words like 'diabolical' to refer to the challenge, his own approach is measured but not without optimism and good faith. The first test of faith will come in December 2009 at the United National Climate Change Conference in Copenhagen.

Success at Copenhagen, writes Garnaut, *requires agreement to large emissions reductions from developed countries, plus agreement on a framework for early contributions to mitigation from China and as soon as possible from other successful developing countries....It has to be a credible agreement. This means that the sum of national commitments must 'add up' to the environmental objective.....Achievement of a comprehensive agreement around a 550 ppm objective would be a step forward of historic dimension.....And after Copenhagen, there will be more big decisions to be made.*



When asked about the part that Australia could play at Copenhagen, Garnaut said that there was a **diplomatic role** for the Prime Minister in the lead up and that he would expect Australia to commit around \$3 billion to international research into climate science, renewables, and backstop technologies.

Garnaut's has drawn criticism from many quarters. He has been labeled as too heavy-handed by some and too weak by others.

Dr Matthew Clarke, of Deakin University, observes that *while many will claim that Garnaut has not been tough enough, his report calls for a reduction in Australia's per capita carbon emissions of 90% by 2050. This surely must be applauded. Garnaut also calls for deeper cuts as a second step.* By contrast, **Dr Andrew Glikson**, Earth and paleo-climate scientist at the Australian National University in Canberra says that "a target of

450 ppm is dangerous, being the atmospheric greenhouse gas level at which the ice sheets began to form in the late Eocene some 34 million years ago. A target of 550 ppm CO₂ is a recipe for disaster."

Aside from the global agreement required at Copenhagen, the main policy recommendation has been an **efficient implementation of mitigation policies within Australia, and in particular to design of an emissions trading scheme**. (ETS). As the cartoon from The Big Issue suggests there is skepticism about an ETS particularly given shortcomings of the European Union scheme, introduced in 2005. Garnaut has said that if the ETS is unsuccessful then a Carbon Tax would have to be considered. Because lower income households spend a larger proportion of their income on energy intensive products compared to higher income households, **Garnaut recommends that half the revenue from the sale of permits would be distributed to lower income households to assist in reducing energy consumption as well as providing compensatory payments.**

Australia's reliance on coal, both for domestic electricity generation and for export dollars is legendary and many are now pinning their hopes on Carbon Capture and Storage (CCS) as the salvation for our mega coal footprint. The Queensland and NSW governments have demonstrated a commitment to increasing coal exports with capacity at Port Waratah in Newcastle having risen from 66 million tonnes per annum (mtpa) in 1996 to 102 mtpa in 2007. In March this year in an open letter to Kevin Rudd (http://www.aussmc.org/Hansen_letter_to_Rudd.php), Dr James Hansen, the director of NASA'S Goddard Institute for Space Studies, called on the Australian government to halt plans for the mining of coal, the export of coal and the construction of new coal-fired power plants. Dr Hansen, one of the world's leading climate scientists, described the need to phase out coal use that does not include the capture and storage of CO₂ as "a global imperative". Tim Flannery and other notable scientists argue that Australia should lead the way in CCS and share the research with large coal users such as China. Greenpeace dismisses CCS and argues that **every dollar the government spends on CCS is a dollar that could have been spent on renewables or efficiencies**. For example if Kevin Rudd chose to fund 100% of the cost of insulation for 1,000,000 households at a cost of \$500 each, the average saving would be up to 2000GWh, which would also reduce greenhouse emissions by 2 million tonnes. So not only would over a million Australians save money on their electricity bills, but nationally we would have immediately cut our greenhouse pollution.

Garnaut emphasizes the importance of CCS but also states that even if carbon capture and storage and commercial-scale biosequestration of carbon wastes fail, so that fossil fuels become unimportant in the global energy equation, Australia may still be a country of relatively low energy costs. We seem to have exceptionally low-cost resources, in abundance compared with population, for most renewable energy: deep hot rocks (geothermal), solar, wind, wave, biomass and second-generation biofuels. Nuclear is not on the agenda for present but under certain conditions could be reconsidered.

Garnaut believes we will be driving electric cars and trucks in the future and is optimistic about a range of other initiatives. These include the restoration of our Mulga lands, and the establishment of Mallee forests for biosequestration and production of eucalyptus oil. Bio-char for soil enrichment, the restoration of wetlands, and other proposals from the Wentworth Group of Scientists, among others, were mentioned. A backstop technology with great potential is *the use of algae to convert carbon rich wastes or carbon dioxide from the air into stable carbohydrates, would utilize the biological processes that converted an earlier carbon-rich atmosphere of earth to the oxygen-rich air that made life possible for mammals and therefore humans.*

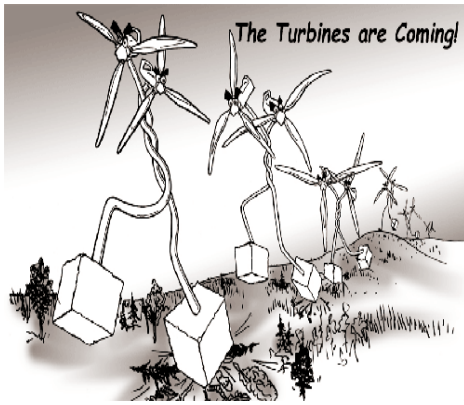


The transformation of our rural landscapes would see a reduction in sheep, beef and dairy farming and an increase in kangaroo harvesting. **"We can still eat our steak and lamb chops if we are willing to pay..", he said with a smile.**

The Report cites the work of Edwards and Wilson (2008) who have modelled the potential for kangaroos to replace sheep and cattle for meat production in Australia's rangelands, where kangaroos are already harvested. They conclude that by 2020 beef cattle and sheep numbers in the rangelands could be reduced by 7 million and 36 million respectively, and that this would create the opportunity for an increase in kangaroo numbers from 34 million today to 240 million by 2020. They estimate that meat production from 175 million kangaroos would be sufficient to replace the forgone lamb and beef meat production, and that meat production from kangaroos would become more profitable than cattle and sheep when emissions permit prices exceed \$40 per tonne CO₂-e. The net reduction in greenhouse gas emissions would be about 16 Mt CO₂-e per year.



Another of Garnaut's major themes is that there will be no success in mitigation, at a national or international level, without good governance This is important in both the international and **national** spheres. When questioned about governance Garnaut said that there was a major challenge for Federal-State cooperation. In the report he writes about the establishment of a genuinely national energy market across all of the regions that can be connected at



reasonable cost to the main centres of generation and demand in eastern and south-eastern Australia—the electricity markets of New South Wales, Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory. This will require deeper and more dense interconnectivity between subregional markets, allowing electricity production to expand from sources at which it can be supplied at lowest cost in the new, carbon-price-inclusive environment. Deeper interconnectivity will support efficient expansion and use of potential for pump storage in Australia's main hydroelectric assets in the Snowy Mountains and Tasmania, thus easing the constraints associated with intermittency of wind and solar power. The test of the emergence of a national market is economically low differentials in electricity prices, and close correlation in changes in electricity prices, across regions.

EDUCATION

This is another area where Federal-State cooperation will be critical. The work of the Dusseldorp Skills Forum (Hatfield-Dodds et al. 2008) writes Garnaut, *has indicated that more than 2.5 million jobs will need to be filled over the next two decades. ... Many of these jobs will be in industry subsectors that barely exist today and some that lie within the imagination of farsighted entrepreneurs.* The need to supply appropriately skilled people for these jobs is in addition to the need to develop new knowledge and skills in existing roles and sectors around the issues that emerge from the implementation of climate change policies..... **The implications of these changes for Australia's education and training sector are yet to be fully appreciated.** These implications, and the necessary response from government, business, labour and our educational and training institutions, need to be comprehensively understood and integrated into the long-term planning of these bodies.

TRANSPORT

This is an area where Garnaut's position differs from the Federal government. Garnaut writes: *In transport markets, too, there will be resistance to price changes in response to the emissions constraint. Recent Australian experience illustrates the sensitivity of this issue, with the Australian Government's proposal in the Green Paper on a Carbon Pollution Reduction Scheme effectively to exclude transport fuels from the early operations of the Australian emissions trading scheme. Such exclusions create arguments for other exclusions, and can quickly lead to a plethora of market-distorting interventions. They are to be avoided.*

He suggests to Australian governments that: *Now is a good time for the Commonwealth Government and the governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory to examine why intercity passenger train services in Australia are inferior to those in European and high-income Asian countries, with a view to removing barriers to the emergence of high-quality inter-regional rail services in Australia.*



(The largest container ship to enter Botany Bay, the MSC Fabienne with a capacity of 5000 containers, on its first visit, Anzac Day 2004, leaving fully loaded with empty containers)

The infrastructure impacts affect a wide range of assets, including commercial and residential buildings, water supply and electricity infrastructure, and ports.

Botany is particularly affected because it is surrounded by low-lying wetlands. In a recent CSIRO climate change study of Sydney, Botany Bay and Rockdale municipalities were singled out as the most susceptible to rising sea level. The NSW State Government in the last few years has approved a number of expensive and critical infrastructure developments around Botany Bay without reference to climate change projections. In May 2006 the University of Sydney held a workshop on "Critical Transportation Infrastructure in a Global Warming Future: Protecting NSW Seaports and their Hinterland" The Principal Environmental Scientist working on the EIS for the Port Expansion noted "that for the purposes of the EIS, spatial and temporal boundaries were tightly defined around the physical infrastructure and less on deeper connections with other structures. ... This was certainly the case with assessing the alternative to develop Newcastle Port instead of augmenting Port Botany. ... **from a climate change perspective, the Newcastle option might have more weight.** ... impacts of Climate Change are not usually considered in the EIS process. The EIS process focussed on assessing the impact of a development on the environment, not that of the peculiarities of the environment on the development (that is seen as project feasibility and although part of the process is still not the focus)."

To facilitate many of Garnaut's recommendations and support innovation the Federal Government must reconfigure Federal and State relationships, be prepared to use its powers under the Environment Protection and Biodiversity

Conservation Act, and weed out current and aspiring 'Humphrey Applebys' – the unflappable symbol of a machine that has no gears, only brakes.¹



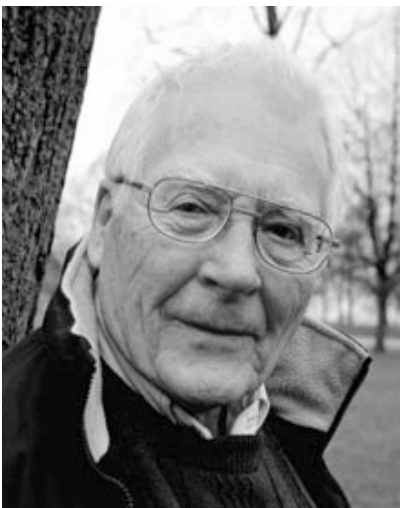
The terms of reference for the Garnaut Review were not all-encompassing. They could never have delivered neat solutions. Western consumer-based societies have taken many steps to get where they are today and can't be transformed so easily. *It is estimated that only one per cent of materials flowing through the US economy are still in use within the year of manufacture.*² To change this, we need a profound shift to cultural values which focus on quality, and durability. Garnaut was not asked to look at the impacts of Peak Oil, or to model some of the more alarming consequences of climate change events. Insurance companies have already been doing this. Garnaut has not examined major biodiversity loss and its consequent impacts, nor increasing impacts of pest species. He has not addressed

issues which may compete for climate change project resources, such as healthcare crises in childhood obesity and depression and the impacts of an aging population. He does suggest the need for more compact, higher density cities and towns but determining settlement size and planning decisions which achieve appropriate outcomes for better health and social interaction are beyond his brief. He is an economist not Harry Potter. Though he clearly takes a humanitarian approach to the looming refugee crisis. When asked about population impacts he made it clear that Australia would have obligations to provide refuge for neighbours displaced by Climate Change events. *Poorer states, he writes, could well be overwhelmed by the task confronting them, in which case Australia is likely to experience the ripple effects of climate induced political disturbances and even violent conflict in the region.*

During times of universal deceit telling the truth becomes a revolutionary act – George Orwell.

The Garnaut review is a landmark document and the website – www.garnautreview.org.au - has gathered together a wealth of material in submissions and other documents. The first step has been made and now it is time for leadership. At the CEDA event on October 3, there were around 500 participants. More than 15% came from NSW government departments and agencies - Sydney Ports, Sydney Water, Energy Australia, Planning NSW, RTA, Premiers and Cabinet, NSW Treasury, State and Regional Development, the DECC. If we are to make the necessary adjustments in a civilized way each of us has a part to play with full accountability for decisions made not just as individuals but as small business men and women, corporate leaders and particularly as political representatives and public servants – each of us will need to step up in the long emergency³ ahead.

James Lovelock is a world renowned international environmental scientist, Fellow of the Royal Society, and author of a number of books including *"The Revenge of Gaia"*. The following comes from an article published in Rolling Stone (November 1, 2007). "In some ways, it's 1939 all over again," he says. "The threat is obvious, but we've failed to grasp what's at stake. **We're still talking about appeasement.**"



Then, as now, the lack of political leadership is what's most striking to Lovelock. Although he respects Al Gore's efforts to raise people's consciousness, he believes no politician has come close to preparing us for what's coming. "We'll be living in a desperate world in no time," Lovelock says. He believes the time is right for a global-warming version of Winston Churchill's famous "I have nothing to offer but blood, toil, tears and sweat" speech he gave to prepare Great Britain for World War II.



"People are ready for this....they understand what's happening far better than most politicians."

¹ "A good civil servant must be able to use language not as a window into the mind but as a curtain drawn across it" – Sir Humphrey Appleby

² WME, September 2008, pp20-21 "The want and waste junkies"

³ *The Long Emergency: Surviving the Converging Catastrophes of the Twenty-first Century*, by James Kunstler, explores peak oil, water scarcity, impacts of climate change events, pandemics, global instability.