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- **Interim Report to the Commonwealth, State and Territory Governments**
- **Issues Paper 6 - Emissions Trading Scheme Discussion Paper**

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australian network of environmental defender's offices

Submission on the Garnaut Climate Change Review – Issues Paper 4 Research and Development: Low Emissions Energy Technologies

11th April 2008

The Australian Network of Environmental Defender's Offices (ANEDO) consists of nine independently constituted and managed community environmental law centres located in each State and Territory of Australia.

Each EDO is dedicated to protecting the environment in the public interest. EDOs provide legal representation and advice, take an active role in environmental law reform and policy formulation, and offer a significant education program designed to facilitate public participation in environmental decision making.

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Introduction

The Australian Network of Environmental Defender's Offices Inc (ANEDO) is a network of 9 community legal centres in each state and territory, specialising in public interest environmental law and policy. ANEDO welcomes the opportunity to provide comment on the *Garnaut Climate Change Review – Issues Paper 4 on Research and Development: Low Emissions Energy Technologies* ('Issues Paper 4') and explore the role of the government and the market in 'how innovation happens.'¹

ANEDO would like to propose **additional principles** for consideration when forming policy to support research and development in low-emission technologies. In particular, ANEDO would like to stress the importance of the following factors:

- 1) Historical responsibility,
- 2) Polluter pays
- 3) Technical and financial resources,
- 4) Previous favourable treatment,
- 5) Cooperation and coordination, and
- 6) The need for an independent review panel and environmental impact assessments.

1. Historical Responsibility

One commonly used principle at the international level of climate law, found in the UN Framework Convention on Climate Change (UNFCCC) is that of historical responsibility.

Article 3.1 of the UNFCCC provides that developed countries should "take the lead in combating climate change", which means taking the lead in mitigation of Greenhouse Gas (GHG) emissions.² It is based on two reasons set out in Principle 7 of the Rio Declaration: historic responsibility, and technical and financial resources. Although the UNFCCC and Rio Declaration are international agreements that pertain to national responsibility within the context of a global community, it is nonetheless pertinent to federal policy formation that provides innovation assistance as one means of combating climate change. Developed countries are often responsible for emissions generated and discharged by corporations based and significantly operating within their borders.

Corporations involved in the fossil-fuel industry (*defined as corporations that are substantially involved in fossil fuel exploration, exportation, stationary-energy production*

1 Garnaut Climate Change Review – Issues Paper 4 on Research and Development: Low Emissions Energy Technologies ('Issues Paper 4') p1.

2 Article 3.1, UNFCCC 91992) available at <http://unfccc.int/resource/docs/convkp/conveng.pdf>

and energy-intensive industry) could be held accountable for two particular aspects of historical responsibility;

1. Directly profiting from the externalities of GHG emissions.
2. Profiting from the infrastructural support and favourable treatment from previous government policies.

2. Polluter Pays

In Australian environmental law there is a simple principle engrained throughout the State and Federal levels; the polluter pays principle.³ It can also be found in the frameworks of most developed countries, promulgated in the guiding principles for economic aspects of environmental policies by the Organisation for Economic Cooperation and Development (OECD).⁴ Australia has a tradition of upholding this principle at the international level, as it did in 1972 at the UN Conference on the Human Environment.⁵ Yet due to continued market failure to internalise the cost of GHG emissions⁶ many fossil fuel corporations were able to charge lowered prices for energy, resulting in greater demand and greater revenue.⁷ Revenue for the fossil-fuel corporations were exacerbated by the exclusion of traditional environmental responsibility upheld in Australian laws, and laws of most other developed countries.

Case Study

One of the first studies on corporate responsibility for GHG emissions found that the world's largest private oil company, Exxon Mobil and its predecessors were responsible for 4.7 to 5.3 percent of the world's man-made carbon dioxide emissions between 1882 and 2002.⁸ The company's lifetime carbon dioxide emissions have been around 20.3 billion tonnes, about three times current annual global emissions from fossil fuels.⁹

Yet in 2007 Exxon Mobil broke its own world record for the largest corporate profits ever.¹⁰ Along with Royal Dutch Shell, BP, Chevron and Conoco Phillips, Exxon

3 For example see the Protection of the Environment Operations Act 1997. At the International Level see Principle 16 of the Rio Declaration (1992). List other examples

4 Gilpin, Alan 'Environmental Policy in Australia' (1980) p19

5 Gilpin, Alan 'Environmental Policy in Australia' (1980) p19

6 Stern Review on the Economics of Climate Change, 'Summary of Conclusions' (2007) available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_summary.cfm.

7 Reidy, Institute of Sustainable Futures, 'Energy and Transport subsidies in Australia' April 2007, executive summary. Taking appropriate account of Australia's comparative advantage' p7.

8 Friends of the Earth, 'ExxonMobil's Contribution to Global Warming Revealed.' (2004) available at http://www.foe.co.uk/resource/press_releases/exxonmobils_contribution_t_28012004.html

9 Ibid.

10 ExxonMobil, 'Summary: 2007 Annual Report' available at <http://ir.exxonmobil.com/phoenix.zhtml?c=115024&p=irol-irhome>.

Mobil was criticised in the US “for taking advantage of tax subsidies and not investing in renewable resources amid record prices for oil and gasoline.”¹¹ Now that it is globally accepted that addressing climate change requires mitigation of GHG emissions, a ‘portfolio’¹² approach should take into account the historical responsibility and financial resources of fossil-fuel corporations.

3. Technical and Financial Resources

A second major reason why developed countries should lead in mitigating anthropogenic climate change is their technical and financial resources.

The Issues paper notes “younger and smaller firms, which often develop breakthrough technologies outside of current mainstream solutions, are at a distinct disadvantage due to the lack-of existing private funds.”¹³ This is not the case with fossil-fuel corporations, who lead the nation in terms of financial revenue and are in possession of technically and scientifically skilled employees.

In Australia, fossil-fuel corporations have a large demand for skilled engineers and scientists. Some corporations, such as Australia’s second largest coal company, Rio-Tinto are investing in primary schools students to generate future innovation.¹⁴ Our largest corporation, BHP Billiton employs 35,000 people globally and takes in an annual profit of over 10 billion.¹⁵ It continually expands, as one analyst has noted, because “the company's global footprint...and visibility to global markets” has allowed it to “invest through the business cycle in value adding opportunities.”¹⁶ Many of these fossil fuel corporations are able to expand on business opportunities; there is no reason why such opportunities cannot be centred on low-emission technologies.

Energy generation in particular has operated on a business as usual high-emission system for decades. The Issues Paper notes that the energy-generation sector has an extremely low private investment in research and development, at 0.4% of turnover.¹⁷ Yet even with such a low investment, research in low-emission technologies has begun.

11 Hargreaves, Steve ‘Congress, critical of tax breaks, lays into oil execs’ available at http://money.cnn.com/2008/04/01/news/companies/oil_hearing/index.htm.

12 Issues Paper 4, Garnaut Climate Change Review, p5.

13 Issues paper 4, above n12, p12.

14 Rio Tinto, Media Release: Rio Tinto Coal Australia helps bring innovation to CQ schools’ (March 2008) available at http://www.riotintocoalaustralia.com/media/38_media_releases_975.asp.

15 Wade, Matt ‘BHP hits jackpot of a lifetime’ available at <http://www.smh.com.au/news/business/bhp-hits-jackpot-of-a-lifetime/2005/08/24/1124562918827.html>.

16 Ferret: All things Manufacturing and Industrial, ‘BHP Billiton \$10 Billion Profit’ (Aug 2006) available at <http://www.ferret.com.au/c/BHP-Billiton/BHP-Billiton-US10-billion-profit-n711509>.

17 Issues Paper 4, above n12, p3.

Some technologies like carbon dioxide injection have been under development for thirty years as a method of enhanced oil recovery.¹⁸ Large carbon capture and storage projects are currently underway in Norway, Canada and Algeria.¹⁹ Australia has already opened its first carbon capture demonstration plant in the Otway Basin.²⁰ While the \$40 Million demonstration plant was launched in Victoria by the Federal Minister for Energy, California cut the ribbon on the largest solar commercial power project in the world.²¹

Unlike in Australia, the Californian regulators passed the California Solar Initiative (CSI). It provides \$3.2 billion (USD) “for solar energy rebates in the state for the next 11 years, providing for the installation of approximately 3000 MW of solar energy, roughly the power equivalent of six large natural-gas fired power plants.”²²

It is true that the Australian Government has recently supported a few ventures in renewable energy but this is a recent occurrence, and remains small in number compared to other energy sectors projects.²³ As Professor Garnaut has stated “in a democracy, or any political system, vested interests apply pressure to the policy-making process.”²⁴ In Australia that pressure, in terms of previous attempts to map climate change policy and any local Emissions Trading Scheme, was “by the big emitters.”²⁵

4. Favourable Treatment

As the Issues Paper notes, the lack of proliferation of low-emission technologies has been hindered in part by an artificially low cost of fossil fuel energy.²⁶ Reidy’s report on Energy and Transport subsidies last year noted that the “governments in Australia provide substantial financial support for the production and use of fossil fuels, through direct payments, favourable tax treatment and other actions.”²⁷ Reidy found that of

18 Co-generation, Tri-generation and Renewable Energy Project Development Services, ‘Enhanced Oil Recovery’ available at http://www.cogeneration.net/enhanced_oil_recovery.htm.

19 ‘The Future of Coal: An interdisciplinary Study at MIT’ (2007), see generally Chapter 4.

20 ‘CO2 Plant ‘a step towards’ clean coal’ SMH (07/04/08) available at <http://news.smh.com.au/co2-plant-a-step-towards-clean-coal/20080402-2364.html>.

21 Wilkonson, Mark ‘Solar expert wants same support as coal’ SMH (05/04/08) available at <http://www.smh.com.au/news/environment/solar-expert-wants-same-support-as-coal/2008/04/04/1207249460474.html>.

22 Broehl, Jesse and Oths, ‘California Passes Long-Term Solar Energy Plan’ available at <http://www.renewableenergyworld.com/rea/news/story?id=41631>.

23 Department of Environment, Water, Heritage and the Arts ‘Renewable Energy Projects’ available at <http://www.environment.gov.au/settlements/renewable/projects/index.html>.

24 Weisse, Rebecca ‘Garnaut’s Big Idea’ (22/03/08) available at <http://www.theaustralian.news.com.au/story/0,25197,23413840-30417,00.html>.

25 Ibid.

26 Issues Paper 4, above n12 p6.

27 Reidy, Institute of Sustainable Futures, ‘Energy and Transport subsidies in Australia’ April 2007, executive summary. Taking appropriate account of Australia’s comparative advantage’ p27.

the estimated \$10 billion of energy and transport subsidies provided in one financial year, 96% went to fossil fuel production and consumption. Of the amount going to fossil fuels, 70% of it was perverse meaning the subsidies increase greenhouse gas emissions and have an adverse economic impact. ANEDO strongly supports the introduction of legislative and policy measures as a matter of urgency to remove the current “massive tax breaks and payments that promote greenhouse pollution and undermine effective action.”²⁸

There has been a default system of “pre-mature locking in”²⁹ for a long time. The previous Government’s long term strategy on energy and innovation, *Securing Australia’s Energy Future* had clearly picked winners.³⁰ Of a \$500 million fund to drive innovation in lowering emissions, \$134 million was earmarked for renewable energy technology.³¹

The fossil-fuel corporations have left “young and small”³² renewable energy companies with little choice but to set up elsewhere. A study conducted two years ago by the Total Environment Centre and others, revealed the high rate of abandonment as a result of the lack of support from the NSW government in particular and which according to Richard Corkish, the head of renewable energy engineering at the University of NSW is continuing today.³³ In a much used example, Zhengrong Shi the solar energy billionaire, helped develop solar technology in Australia but has since been lured back to China where he has the largest photovoltaic manufacturing factory in the country.

5. Coordination and Co-operation

In Australia there does not appear to be a ‘coordination failure’ by fossil-fuel corporations either.³⁴ Since 2003, the establishment of the Coal21 partnership between around 15 competing coal and power-generation companies, as well as research facilities and governments demonstrates their ability to work together.

28 See Don Henry ACF, National Press Club, 9th April 2008, for example calling for abolition of the fringe benefits tax concession for personal use of company cars, reviewing the fuel tax credits scheme for mining companies, abolishing the aviation fuel subsidy, and calling on the resource sector to boost R&D.

29 Issues Paper 4, above n12, p5.

30 Peatling, Stephanie, ‘Coal remains king in a solar age’ SMH (16/06/04) available at <http://www.smh.com.au/articles/2004/06/15/1087244918788.html>.

31 Ibid.

32 Issues Paper 4, above n12.

33 Wilkinson, Marian ‘Solar Expert wants same support as coal’ SMH (05/04/08) available at <http://www.smh.com.au/news/global-warming/solar-expert-wants-same-support-as-coal/2008/04/04/1207249460474.html>.

34 Issues Paper 4, above n12, p10.

By comparison the US Federal Government has been pulling out of investments in Carbon Capture and Storage. The Department of Energy officially ended a \$1.8 billion (USD) clean-coal project. The FutureGen Industrial Alliance (similar to the Coal21 partnership) was cooperating with the Energy Department to develop a coal-fired power plant designed to gasify and store carbon emissions deep within the Earth. The process is quite similar to the technologies undertaken by Coal21. The US Energy Department maintained that ballooning cost estimates resulted in their pull out.³⁵

6. Independent Panel and Assessment

In order to ensure that ‘scarce public resources’ are well allocated ANEDO recommends the creation of an impartial and independent review panel. As previously quoted, Professor Garnaut stated “in ... any political system, vested interests apply pressure to the policy-making process.”³⁶ To ensure that the criteria, drawn from the discussions and recommendations of this review process, sets the precedent for innovation support, an impartial and independent panel should be convened. In addition to prioritising funding according to sound principles discussed in this submission, the panel should also vet projects of potentially detrimental environmental impacts.

ANEDO further suggests a form of Environmental Impact Assessment be considered. This could draw upon processes that are required under various pieces of environmental legislation around Australia, or could involve the establishment of environmental criteria that the Independent Panel must apply when considering the potential impacts of a project. This will ensure that a comprehensive assessment of the ecological sustainability of renewable and low emission energy technology is undertaken. Many ‘innovations’ that enter the foray of mitigation solutions can be potentially disastrous. For example, environmental impacts of biofuel projects are causing concern. Attempts at ‘global engineering’ like many technologies involving algae³⁷ or particle cooling,³⁸ require vetting to ensure limited resources are well spent. This includes unproven technologies, such as carbon capture and storage, and technologies unsuitable for our nation, such as nuclear energy.

Untested nature

Carbon Capture and Storage (CCS) has been listed by the IPCC as a “promising but unproven” technological option for reducing GHG emissions. There are outstanding questions regarding effectiveness and cost and CCS is unlikely to make a

35 Boak, Joshua and Garcia, Monique ‘US pulls the plug on funding for FutureGen’ Chicago Tribune, http://www.chicagotribune.com/business/chi-thu_futuregenjan31,0,2119234.story.

36 Weis, above n24.

37 Turner, Liz ‘After 30 years, algae-to-fuel finally gets the green light’ Greenfuels Forecast, available at <http://www.greenfuelsforecast.com/ArticleDetails.php?articleID=481>.

38 Keith, David ‘A surprising idea for “solving” climate change’ (Nov. 2007) <http://www.ted.com/index.php/talks/view/id/192>.

significant contribution to GHG emissions reductions for 10 years or more (IPCC suggests between 2015 and 2040 for CCS to potentially make a significant contribution). However, given the need to reduce GHG emissions quickly, the Government's first priority should be investment in existing technology options (renewables, etc) over unproven options (such as CCS), which should be a second priority at best.

Funding R&D

The current demand for fossil fuels, and the resulting high level prices of coal and oil has resulted in larger profit margins. When similar profits were last seen by such corporations, the US congress passed a windfalls profit tax, lasting from 1980 to 1988.³⁹ There are current talks in the US of a similar tax, with revenue to go towards the expensive bill posed by climate change mitigation.⁴⁰

There could be similar 'windfall tax' scenario available to Australian policy makers. The Garnaut Interim report maintains "there is no tradition in Australia for compensating capital for losses associated with economic reforms of general application ...nor, it should be said, for taking away windfall gains from changes in Government policy."⁴¹ One option might be to mandate that a certain percentage of profits are to be spent on low-emission technologies. This necessary expenditure could then assist with investing in longer term mitigation technologies, rather than simply the bare minimum required in the first Emissions Trading period.

Summary

We should not underestimate our ability as a nation to innovate. Sir Nicolas Stern stated last year:

"There is lots you can do. There is lots you can do on energy efficiency. There's lots you can do in development of new technologies and I believe that Australia will be in a very good position to develop geothermal, to do carbon capture and storage for coal, to develop solar and so on. So my guess is that Australia would push forward, and could push forward, very effectively and become a world leader and make some money out of these new technologies."⁴²

39 Thronthike, Joseph J, 'Historical Perspective: The Windfall Profit Tax – Career of a concept.' Available at <http://www.taxhistory.org/thp/readings.nsf/cf7c9c870b600b9585256df80075b9dd/edf8de04e58e4b14852570ba0048848b?OpenDocument>.

40 <http://www.usnews.com/articles/business/economy/2008/02/01/exxons-profits-measuring-a-record-windfall.html>

41 Garnaut Review: Interim Report, p50.

42 Stern, Nicolas featured on Lateline Interview available at <http://www.abc.net.au/lateline/content/2007/s1884213.htm>.

The Issues paper raised the need for a 'fair go' for all innovators in creating technologies to de-carbonise our economy. Yet without a policy reflecting historical responsibility, financial and technological resources and coordination capabilities a fair go will be difficult to achieve.

Recommendations

1. Australian Government, both State and Federal, should prioritise renewable energy technologies over untested innovations.
2. Australian Governments should look to facilitate (not fund) partnerships with fossil-fuel corporations, who already have the technical and financial resources and ability to cooperate on low-emission technology research and development.
3. An Independent Panel be created to assess proposed innovation projects, and a mandatory process for consideration of environmental impacts be established for new innovations to ensure they not only assist in mitigation and adaptation to climate change but do so with minimal environmental consequences.