COMMENTS

AUSTRALIA'S NATIONAL GREENHOUSE RESPONSE: IMPLICATIONS FOR THE ENERGY SECTOR

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Pursuant to the Framework Convention on Climate Change, Australia and other developed countries committed to adoption of national policies to limit the anthropogenic emission of greenhouse gases. The forthcoming Third Conference of the Parties may result in the imposition of further obligations on the parties. Given that Australia is heavily dependant on fossil fuels domestically, with eighty per cent of internal electricity needs being met by coal and a trend towards energy intensive downstreaming of raw materials processing, this country's national policy has significant implications for the energy sector. This comments considers the implications of the 1992 National Greenhouse Response Strategy and the present review of this national policy.

It is now generally accepted that the anthropogenic release of greenhouse gases (which include carbon dioxide, methane, ozone, nitrous oxide and chlorofluorocarbons) enhance the greenhouse effect and cause changes in the global climate.[1] While Australia is responsible for less than two percent of the total world greenhouse gas emissions, on a per capita basis its carbon dioxide emissions, a major greenhouse gas, are among the highest in the world.[2] A significant amount of carbon dioxide emissions can be attributed to the burning of fossil fuels. A major source of carbon dioxide emissions in Australia is the use of energy, fuelled by coal and gas fired power generation.[3] As a result, steps taken within Australia to reduce greenhouse gas emissions necessarily focus attention on the energy supply and demand and the ongoing dependence this of sector on carbon intensive fossil fuels.

Of course, the effects of climate change will be felt globally and, while regional impacts may differ[4], they will only be effectively combated with a global response. Tentative steps towards such a response are

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1 This general conclusion was reached by the Intergovernmental Panel on Climate Change (the "IPCC") in 1990 (Houghton J et al (eds) *Climate Change: The IPCC Scientific Assessment* (Cambridge: Cambridge University Press, 1990). Despite revised estimates in predictions about the effect of greenhouse gases, the IPCC has not altered this conclusion.

2 Department of Primary Industries and Energy *Sustainable Energy Policy for Australia: Greenpaper* (December, 1996) http://www.dpie.gov.au/resources.energy/energy/greenpaper/foreword/html at para 2.3.24.

3 Intergovernmental Committee on Ecologically Sustainable Development *Call for Public Submissions for the 1996 Major Review of the National Greenhouse Response Strategy* (1996) http://www.erin.gov.au/portfolio/eds/climate/govt/callfor.html.

4 Australia is vulnerable to potential regional impacts, such as increasing drought conditions which could significantly impact the agriculture sector, and increasing storms and flooding which could impact on the extensive coastal areas (Intergovernmental Negotiating Committee for the Framework on Climate Change *Executive Summary of the National Communication of Australia,*

taken by the 1992 Framework Convention on Climate Change ("FCCC"), to which Australia is a party. Although this Convention does not contain legally binding emission targets or timetables, it sets as an objective the "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".[5] To that end, the developed country Parties to the Convention commit to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs" recognising that "a return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases" will contribute to the modification of long term trends. [6] Although not explicit, this provision has been characterised as implying the target of a return to 1990 emission levels by the year 2000.[7] Stronger reduction targets are currently being negotiated with a view to agreement at the Third Conference of the Parties, scheduled to take place in Kyoto, Japan, in December of this year.

1. THE NATIONAL GREENHOUSE RESPONSE STRATEGY

Australia's national policy on anthropogenic greenhouse gas emissions is found in the National Greenhouse Response Strategy (the "NGRS").[8] Reflecting the constitutional structure of the country and the resulting need to involve all levels of government, the Strategy was developed by the Council of Australian Governments ("COAG"), representing Commonwealth, State, Territory and local governments.[9] This body formally endorsed the NGRS in December 1992.

1.1 Goals and Underlying Principles

The NGRS sets as its overall goal:[10]

> to contribute towards effective global action to limit greenhouse gas emissions and enhance greenhouse gas sinks; to improve knowledge and understanding of the enhanced greenhouse effect; and to prepare for potential impacts of climate change in Australia.

Submitted under Article 4 and 12 of the United Nations Framework Convention on Climate Change (26 October, 1994) http://www.unfcccc.de/fccc/docs/nc/aus01.htm).

5 FCCC Article 2.

6 FCCC Article 4.2(a).

7 Several delegates to the Convention wanted this target to be made explicit but last minute negotiations resulted in the non-binding and "unspecific aspiration" which resulted (John Vogler *The Global Commons: A Regime Analysis* (England: John Wiley & Sons Ltd, 1995) at 143.

8 The resolution to prepare the NGRS predates Australia's signing of the FCCC, but the two processes are intertwined, with the former serving as the vehicle through which Australia's commitments under the FCCC to formulate, implement, publish and regularly update national and regional programmes to limit the anthropogenic emissions of greenhouse gases and to promote the conservation of sinks and reservoirs are being met. (*Supra*, note 3).

9 COAG is made up of the Prime Minister, the heads of governments of states and territories and the President of the Australian Local Government Association. The endorsement of the Strategy by the Australian Local Government Association can not bind local government authorities to observe its terms. (COAG *National Greenhouse Response Strategy* (Commonwealth Government, 1992) at 5).

10 Ibid at 10.

Several specific goals and principles[11] guide the development of the response measures, upon which sectoral objectives and strategies are based. While each of these goals and principles are important, two are of particular note. First, the guiding principle of precaution is adopted, providing:

> where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Acceptance of this principle to guide policy on the issue of climate change is essential, as many questions still remain regarding short and long term effects and scientific predictions may not be fully borne out until well into the next century. To the extent that such questions remain, acceptance of this principle affirms the Governments' commitment to take pro-active measures addressing the potential impacts of climate change without using the remaining scientific uncertainty as a reason to postpone a response.

A second significant core principle is that response measures are to be directed towards the following interim planning target:[12]

> to stabilise greenhouse gas emissions (not controlled by the Montreal Protocol on Substances that Deplete the Ozone Lay) based on 1988 levels by the year 2000 and to reduce these emissions by 20 per cent by the year 2005 ... subject to Australia not implementing response measures that would have net adverse economic impacts nationally or on Australia's trade competitiveness, in the absence of similar action by major greenhouse producing countries.

This target, originally adopted in 1990, differs from the implicit target in the FCCC in that it contemplates not only the stabilisation of greenhouse gas emissions but a 20 per cent reduction by the year 2005.[13] Although such a reduction now appears very optimistic, it is also heavily qualified by considerations of economic impacts and trade competitiveness. In this respect it reflects an underlying policy in line with Australia's current position at the international level on reduction targets.[14] In each instance there is a failure to recognise the converse proposition, the adoption of more stringent greenhouse response measures than other major greenhouse producing countries may also serve to enhance Australia's trade competitiveness.

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11 The goal, core objectives and guiding principles of the *National Strategy for Ecologically Sustainable Development*, which Strategy was also adopted by COAG in December, 1992, are incorporated by reference.

12 N.G.R.S. at 8-9 and 11.

13 This interim target is a variation of the target recommended by the 1988 Toronto Convention of reducing 1988 carbon dioxide emissions levels by 20 percent by the year 2000. Several countries adopted this measure prior to the 1992 Climate Change Convention (Laura Horn "The United Nations Convention on Climate Change - The First Step" (1993) 10 *EPLJ* 70 at 71 and 74).

14 Australia is currently resisting suggested international targets which have developed country reduce emissions by 15 percent below 1990 levels by the year 2010 on the basis that pursing such targets would severely harm the national economy.

1.2 Implementing the First Phase of Measures

The NRGS was not drafted with the intention of providing all the measures required to meet its goal. Rather, it contemplates a "phased approach to the introduction of measures" to allow for the best long term outcome.[15] The Strategy introduces a first phase of measures. It focuses on the so called "no regrets" measures, which are those which have a net benefit or, at least, no net cost.[16] Insurance measures compliment the no-regrets measures, focusing on the reduction of uncertainties regarding climate change impacts and the provision of contingency plans.[17] The first phase measures share the characteristics of having low economic and social costs and causing minimal disturbance to the community as a whole or any single industry sector or particular geographical region.[18] Naturally, these type of measures are the most appealing for Governments to initiate.

1.2.1 Measures Directed at the Energy Sector

The first phase measures focus particularly on energy production, distribution and use, which is not surprising given the large contribution of these activities to greenhouse gas emissions. This focus also reflects the potential to introduce no-regret measures into these areas and the fact that the type of emissions involved are better understood and more readily quantifiable.[19] In particular, high priority is given to implementing an integrated least cost approach to energy planning; pricing energy to better reflect economic, social and environmental costs; removing barriers to the free and fair trade of natural gas within the country; promoting greater use of cogeneration schemes in energy supply;[20] improving energy performance in households, industry, commercial and transport; and providing information to energy users.[21]

To date, these initiatives have been advanced through a number of programs initiated at all levels of Government. Of particular importance in this regard are the national electricity market reforms, which include the introduction of competition in the generation sector and the establishment of an independent interstate transmission network.[22] This restructuring, overseen by the National Grid Management Council, seeks to allow efficiency measures and renewable energy options to be adopted in situations where they are the most cost-effective.[23] The hope is that these changes will provide for "cleaner" forms of energy such as solar power, to compete with coal based electricity generation. In addition, the natural gas market has also been restructured, with a view to increasing the use of natural gas in both electricity generation and industrial co-generation. It is anticipated that these changes will allow natural gas to account for

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15 Supra note 4.
16 N.G.R.S. at 12.
17 Ibid.
18 Ibid
19 Ibid at 13.
20 Two-thirds of the energy created when fossil fuels are burnt to create electricity is wasted. Co-generation uses the waste heat to produce power, resulting in reduced greenhouse gas emissions and other savings.
21 N.G.R.S. at 13-14.
22 Supra note 4.
23 Ibid.

16 per cent of primary energy consumption by the year 2000.[24] Several States have also undertaken renewable energy initiatives and energy efficiency strategies, with a view to reducing energy consumption and removing barriers to encourage wider use of sustainable energies.[25]

2. GREENHOUSE 21C

In March 1995, Greenhouse 21C, often referred to as the Greenhouse Challenge, was released to expand the 1992 NGRS. The most important feature of this initiative is its focus on building partnerships with industry to promote best practise management to achieve voluntary reduction of greenhouse gas emissions. Initiatives detailed in relation to energy again affirm the central role of the energy sector in the central role of the energy sector in the climate change equation. In addition to recommitting to existing strategies, the Commonwealth government foreshadowed the development of a White Paper on National Sustainable Energy Policy to provide a more stable and certain framework for energy planning and investments.[26] Greenhouse 21C also committed to the establishment of a task force to accelerate gas market reform to help achieve emission savings from switching to gas from other fossil fuels and allocated monies to support the development of the renewable energy sector.

3. REVIEW OF THE NATIONAL GREENHOUSE RESPONSE STRATEGY

In 1996 the Intergovernmental Committee for Ecologically Sustainable Development initiated a major review of the NGRS, with a view to introducing the next phase of response measures. A Discussion Paper was released in March, 1997 re-opening all aspects of the existing strategy for comment and reconsideration.[27] While the overall goals will remain roughly the same, an "enhanced, strengthened and more broadly based greenhouse response"[28] to direct Australia into the next century is expected to be released sometime this year.[29]

That the NGRS is in need of review is unquestioned. The measures implemented to date are not adequate for Australia to meet the FCCC implied target[30] or, indeed, the interim planning target which guided the development of the NGRS. In addition, changes during the past five years mean that several new issues must now be addressed, particularly in relation to the micro-economic and competition policy reforms. Nevertheless, the development of this Strategy prior to the upcoming Third Conference of the Parties to

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24 FCCC Review Team *Report on the In-depth Review of the National Communication of Australia* (14 December 1995) http://www.unfccc.de/fccc/docs/idr/aus01.htm.

25 Intergovernmental Committee on Ecologically Sustainable Development *Progress in Implementing the National Greenhouse Response Strategy and Issues to be Considered in the 1996 Major Review of the NGRS* (Dec, 1995) http://www.erin.gov.au/portfolio/esd/climate/greenhouse/ngrs95.html at Appendix II.

26 Development of the White Paper is proceeding in tandem with the revised National Greenhouse Strategy. A Green Paper was released in 1996 and it is anticipated that the White Paper will be available in September, 1997.

27 The deadline for public submissions on the Discussion Paper closed 11 April 1997.

28 Intergovernmental Committee on Ecologically Sustainable Development *Future Directions for Australia's National Greenhouse Strategy: Discussion Paper* (March, 1997) http://www.erin.gov.au/portfolio/esd/climate/dp/ngs96.html.

29 The Discussion Paper states that the updated Strategy will be finalised by mid-1997 but indications are that it will not be released until late in the year.

30 Supra, note 28.

the FCCC raises questions. While acknowledging that the resulting strategy should provide for any internationally agreed commitments,[31] it will be finalised only months prior to the deadline for the negotiation of a Protocol on reduction targets. The Discussion Paper suggests flexibility in the Strategy to allow adjustments for to any commitments agreed to at that time. In the meantime, measures for short and long term emission outcomes are being formulated without an explicit target past the year 2000. The interim planning target included in the 1992 NGRS is said to have been "overtaken" by implied target in the FCCC and no new target is stated. The Discussion Paper states that governments, stakeholder groups and the broader community must do more to reduce greenhouse gas emissions, but in the absence of a target, the rationale underlying decisions on how much more is required is unclear.

While the use of economic instruments is considered,[32] the focus of the Discussion Paper continues to be on "no regret" measures. The premise continues to be that the benefit of a no regret measure will balance or outweigh its cost but the characteristics which the Governments will rely upon to identify such measures have been made explicit. Benefits and costs will not be limited to those which are financial in nature but will also include those which are social and environmental. Further, the calculations of benefits and costs are from the perspective of the community, rather than an individual, over the short, medium and long terms.[33] Given these characteristics, the identification of a "no regret" measure is a difficult task. Quantifying non-economic benefits and costs is a value laden exercise, made more difficult by the fact that specific environmental impacts over the long term remain speculative in nature. Yet, it is precisely this quantification which is required to determine whether a net benefit accrues to the community before a response measure can be categorised as one of no regrets.

Despite the focus of the first phase no-regrets measures on the energy sector, and the energy efficiencies which resulted, emissions from the non-transport energy sectors rose from 36.4 percent of Australia's total emissions in 1990 to 37.8 percent in 1994.[34] This represents an increase of 1 percent per annum over this period. Electricity was the largest contributor to the emissions from the non-transport energy use sectors, accounting for 66 percent of the total with natural gas, solid fuels and petroleum accounting for 13 per cent, 14 per cent and 7 per cent respectively.[35] These emission figures mean that energy use and supply continues to be an area of significant focus for the formulation of the new strategy, with measures attempting to provide short term greenhouse benefits balanced with more long term solutions.

3.1 Developing the Renewable Energy Sector

Of course, a primary objective in this respect remains the abatement of greenhouse gas emissions arising from energy production and distribution.[36] To meet this objective, the Discussion Paper contemplates several specific measures to support the development of the renewable energy sector and assist the development of small-scale energy co-generation. These include promoting the use of stand-alone power systems; undertaking a national assessment program of wind, solar, biomass, tidal, wastes and geothermal resources and technologies to assist their exploitation; establishing a Renewable Energy Task Force to report on strategic development of renewable energy industries in Australia; and promoting the benefits of small-scale cogeneration.

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31 Ibid.
32 The introduction of a carbon tax is not on the agenda of any present Australian government, Ibid.
33 Ibid.
34 Ibid.
35 Ibid.
36 Ibid.

Ongoing monitoring of competitive energy markets is also proposed, to ensure that the benefits of restructuring are environmental as well as economic and that structural, market, legislative and regulatory barriers to sustainable energy supply are addressed. Many of the micro-economic and competition policy reforms which have taken place since 1992 in the energy sector, such as the development of an interconnected competitive electricity market in New South Wales, Victoria, ACT, Queensland and South Australia and the privatisation of publicly owned electricity and gas utilities, have been driven by the goal of improving efficiency and competitiveness. These goals are not necessarily consistent with improving greenhouse emission outcomes.[37] While, on its face, a fully competitive energy sector allows renewable energies and co-generation services to compete, structural barriers such as the exclusion of externality costs in fossil fuel energy pricing continue to favour the supply of traditional forms of energy.[38] The full removal of this type of barrier, however, is fraught with difficulties. Valuing environmental impacts which are occurring presently is a difficult enough challenge, let alone calculating the costs of long term effects. Assuming this can be done, building in these costs to fossil fuel dependent energy source would translate into higher energy prices. Yet, the relatively low cost of energy, and specifically electricity, by world standards provides Australia with a competitive advantage which has facilitated the development of industry and commerce in the country.[39] Measures which serve to increase these prices could impact on that advantage, with resulting social costs. Users from lower socioeconomic groups would also be adversely impacted. Nevertheless, failure to calculate the true cost of more conventional energy supplies means that it will be difficult for renewable energy technologies, which often have high capital costs associated with them, to compete in an open market. The inherent difficulty in ensuring that they can do so accounts for the continued attention on removing such barriers in the new strategy.

3.2 Increasing Efficiencies in Conventional Energy Supply

The Discussion Paper also considers the need to abate greenhouse gas emissions from existing electricity supply industries. While not yet formulated, several types of strategies aimed at increasing efficiency and reducing energy loss are suggested for both the electricity and gas supply industries respectively. Implementation of these types of measures may ultimately be the most important given that, for the foreseeable future, renewable energy will not replace coal generated electricity or other conventional forms of energy supply. The Discussion Paper recognises this fact and acknowledges that the large contribution of greenhouse gas emissions from these industries means that increasing efficiencies in production, even by a small percentage, will result in significant emission savings.[40] To help monitor the effectiveness of such measures, greenhouse gas emission reporting are suggested for the electricity supply, gas, oil and coal industries. In relation to each industry, specific reports will be required. For example, the oil industry will report on venting and flaring in production and refining while the coal industry will need to monitor and report on methane emissions produced from coal mining.[41] It is

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37 In 1995 the Industry Commission estimated that the micro-economic reforms in the electricity and gas sectors would increase GDP by $5.8 annually. Supra note 2 at para 3.1.5.

38 Supra note 25.

39 Supra note 2 at para 1.0.4.

40 Supra note 28.

41 Ibid.

anticipated that such reporting could be carried out through existing mechanisms, such as licensing requirements or cooperative arrangements.

Measures also aim to meet objectives of improving the cost-effectiveness and competitiveness of energy technologies and services which abate greenhouse gas emissions. These focus on assisting manufacturers and providers in developing energy efficiency and renewable energy technologies and overcoming financial barriers to access the market with such technologies. Finally, improving efficiency of energy use and adopting behaviours which abate greenhouse gas emissions is to be facilitated through the provision of information, adoption of best practice measures and improving energy efficiencies within domestic, commercial and industrial sectors.

4. CONCLUSION

Ultimately, moves to reduce greenhouse gas emissions raise the prospect of moving away from the use of carbon intensive fuels and towards renewable energy sources. The inescapable consequence is that the energy sectors dependant on fossil fuels will be affected. Even the "no regret" measures of low economic impact focused on in the first phase of the NGRS have such implications. Energy users are encouraged towards greater efficiencies, thereby reducing demand. Reforms are encouraging users towards natural gas sourced energy. Continued attention is focused on allowing suppliers of renewable energy sources access to the market.

The dilemma Australia is faced with is to balance support for economically important traditional forms of energy supply while promoting development of the renewable energy sector. Short term solutions may look to the development of technologies to reduce greenhouse gas emissions from fossil fuel intensive energy supply. This is appealing because it allows for continuing economic performance and the exploitation of a readily available resource. However, the Governments can also not afford to lose sight of the fact that the development of renewable energy sources may present significant long term financial and environmental benefits for Australia, both domestically and internationally. To that end, they must continue to pursue efficiencies within the energy sector reliant on conventional energy sources while fostering the development of renewable energy sources with at least equal vigour. It is only by taking this course, I believe, that Australia will truly have no regrets.