

**Launch of R Lyster and A Bradbook, *Energy Law and the Environment*,
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Let us do a stocktake. What is the state of our environment in relation to energy at the end of 2006? Let us focus on one developed economy, that of New South Wales.

The recent New South Wales State of the Environment Report 2006 published by the Department of the Environment and Conservation NSW, provides the following snapshot. Fossil fuels currently provide 95% of the NSW's primary energy needs.¹ The single largest source of greenhouse gas emissions is the stationary energy sector. That sector contributes around 48% of the State's total emissions, the majority of which (approximately 77%) comes from the generation of electricity. The stationary energy sector also:

- is a major source of regional air pollutants, such as Oxides of Nitrogen (NO_x), Sulfur Oxides (SO_x), fine particles and heavy metals including mercury,
- uses large quantities of fresh water, and
- produces large amounts of waste ash.²

Electricity production has by far the largest overall impact on the environment of the activities covered by the stationary energy sector.³

As an illustration, there are eight coal fired power stations within the greater metropolitan area. At current generating levels, these power stations

¹ Department of Environment and Conservation (DEC) NSW, *New South Wales State of the Environment 2006*, section 2.3, p 1 available at <http://www.epa.nsw.gov.au/soe/soe2006/>.

² DEC NSW, n 1, section 2.3, p 3.

³ DEC NSW, n 1, section 2.3, p 3.

contribute large air pollutant loads, including 46% of the New South Wales total of NO_x, 87% of total SO_x and 20% of total mercury as well as fine particles, fluoride and other pollutants. The power stations are all water cooled. Those located inland consume in total more than 70 gigalitres of fresh water each year, a considerable amount of which is lost through evaporation. The cooling waters that are discharged to the environment can include high thermal load. It is predicted that the environmental impact from these power stations will increase over the next decade as demand increases.⁴

In Australia, energy consumption is increasing due to population growth, economic growth and behavioural and lifestyle changes.⁵ In NSW, electricity consumption has risen from around 58,000 Gwh in 1994-1995 to around 77,000 Gwh in 2005-2006.⁶ An example of the changes in behaviour and lifestyle is evidenced by the fact that New South Wales households with air-conditioners rose from 31% in 1994 to 54% in 2005 and the number of homes with more than one cooling unit in operation also increased. The ownership of dishwashers also increased from 25% to 43% over the same period.⁷

Not only is electricity consumption steadily increasing, the rate of growth in electricity consumption is also expanding. Nationally, for example, it increased by 1.9% in 2001-2002, 3.4% in 2002-2003 and 5% in 2003-2004.⁸

The rising demand for energy has led to increased total emissions from energy production. Nationally, greenhouse gases from the stationary energy sector increased by 43% from 1990-2004 because of rising energy consumption. Greenhouse gas emissions from electricity generation alone rose by 51% over this period.⁹

⁴ DEC NSW, n1, section 2.3, p 5.

⁵ DEC NSW, n1, section 2.3, p 2.

⁶ DEC NSW, n1, section 2.3, Figure 2.10, p 8.

⁷ DEC NSW, n1, section 2.3, p 8.

⁸ Commonwealth Department of Environment and Water Resources, *Commonwealth State of the Environment Report 2006*, p 13, see also Figure 6 available at

<http://www.environment.gov.au/soe/2006/publications/report/index.html>.

⁹ DEC NSW, n1, section 2.3, p 9.

Faced with these alarming statistics, energy production and consumption can be seen to be a critical contributor to current unsustainable practices and environmental problems. Conversely, achieving sustainable development requires addressing the unsustainable practices in energy production and consumption. This has now been realised internationally, nationally and provincially.

Rosemary Lyster and Adrian Bradbook's book, *Energy Law and the Environment*, addresses these concerns. It illuminates the contribution of energy production and consumption to climate change and unsustainable development. It discusses the international, national and provincial legal responses intended to address unsustainable practices in energy production and consumption.

The book fills a void in the legal literature. For too long, environmental law has overlooked the relevance of energy production and consumption to sustainability and has failed to realise the significant role that sustainable energy production and consumption can play in the advancement of sustainable development.

The book begins (Chapter 1) with an overview of current energy production and use in Australia. It then (Chapter 2) explains the role that various energy technologies play in achieving sustainable development. These include energy efficiency technologies, renewable energy resources and advanced fossil fuel and nuclear technologies.

The authors perceptively note that even with renewable energy sources, there are still environmental issues to be addressed. Wind energy, for example, can be seen to be an environmentally benign resource in that it avoids atmospheric carbon emissions (except in the manufacture of wind turbines) and causes no air pollution. Nevertheless, wind energy development can still cause environmental concern, including death to birds, noise and visual

pollution. The Bald Hills Wind Farm Project in Victoria¹⁰ and the Taralga wind farm case in New South Wales¹¹ are two examples. Biomass is another renewable energy source. However, that too can cause environmental concerns particularly with odour. The *Northcompass Inc v Hornsby Shire Council*¹² case is an illustration of the concern arising from this renewable energy source.

The authors note that the achievement of sustainable development in the energy context will depend not simply on one energy source, but a combination of measures involving a range of different resources.

The authors note that law has an important role to play in furthering sustainable energy development.

Having set the policy parameters for the debate, the authors examine the international, national and provincial legal responses. In Chapter 3, the international law responses to energy production and consumption in achieving sustainability are examined. This includes a brief examination of customary international law, including the duty established in the *Trail Smelter* decision¹³ that nation states take adequate steps to control and regulate sources of global pollution or serious transboundary harm within their territory or subject to their jurisdiction. There is then a longer examination of international conventions.

¹⁰ The Bald Hills Wind Farm development was initially refused and then later approved with conditions in relation to the Orange-Bellied Parrot, see: L. Moore, 'Orange-Bellied Parrot defeats Wind Farm', 15 June 2006, Royal Institution of Chartered Surveyors, <http://www.rics.org/Management/Disputeavoidancemanagementandresolution/Disputemanagementandresolution/lmoore001.html>; Senator the Hon. Ian Campbell, Minister for the Environment and Heritage, 'Varied Bald Hills Wind Farm Proposal Approved with Strict Conditions', 21 December 2006, <http://www.environment.gov.au/minister/env/2006/mr21dec06.html>. On the topic of wind farms generally see: A. Wawryk, 'Planning for Wind Energy: Controversy over Wind Farms in Coastal Victoria', (2004) 9 *The Australasian Journal of Natural Resources Law and Policy*, 103.

¹¹ *Taralga Landscape Guardians Inc v Minister for Planning and Res Southern Cross Pty Ltd* [2007] NSWLEC 59.

¹² *Northcompass Inc v Hornsby Shire Council* [1996] NSWLEC 213.

¹³ (1941) 35 AJIL 684.

The Convention on Long Range Transboundary Air Pollution in 1979¹⁴ is one major international agreement regulating the emission of substances causing acid rain. It is the first international convention seeking to regulate the environmental consequences of energy production. Another convention of critical importance is the United Nations Framework Convention on Climate Change (UNFCCC)¹⁵ in 1992 and the Kyoto Protocol¹⁶ made thereunder in 1997. Australia is, of course, a signatory to and has ratified the Climate Change Convention but has not ratified the Kyoto Protocol. The authors summarise the Convention and Kyoto Protocol and evaluate the Australian Government's response to the Kyoto Protocol. The authors examine the Energy Charter Treaty¹⁷ and Protocol on Energy Efficiency and Related Environmental Aspects,¹⁸ to which Australia is also a party.

In addition to both customary and convention law, there is a body of international soft law or non-binding declarations. These include various outcomes of the United Nations Conference on Environment and Development (UNCED)¹⁹ held in 1992 in Rio de Janeiro, such as the Rio Declaration and Agenda 21, and the subsequent World Summit on Sustainable Development (WSSD) in 2002 in Johannesburg, including the Johannesburg Plan of Implementation.²⁰ Finally, the authors examine the G8 Gleneagles Plan of Action "Climate Change, Clean Energy and Sustainable Development".²¹

Increasingly, these international legal and policy measures set the framework for debate and action at national level. Climate change is, of course, the quintessential example of the global interrelationship of humans and their environment. It demands a global response.

¹⁴ (1979) 18 ILM 1442.

¹⁵ (1992) 31 ILM 849; 1771 UNTS 108 (in force 29 May 1992).

¹⁶ (1998) 37 ILM 22; UN Doc FCCC/CP/1997/L.7/Add.1 (in force 16 February 2005).

¹⁷ (1995) 34 ILM 260.

¹⁸ (1995) 34 ILM 446.

¹⁹ A/CONF. 151/26 (Vol III).

²⁰ A/CONF/L/6/Rev.2.

²¹ http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf

²¹ G8 Gleneagles 2005, www.g8.gov.uk.

Chapter 4 evaluates the national response of the Australian government to issues of energy, climate change and the environment. It provides a useful summary and analysis of the Australian government's response, including the decision to refuse to ratify the Kyoto Protocol as well as alternate action being pursued by the government. The chapter analyses the legislative response of the Commonwealth, including the *Environment Protection and Biodiversity Conservation Act 1999* and the *Renewable Energy (Electricity) Act 2000*.

Achieving sustainability in the energy production and consumption sectors will not occur by regulation alone; the market must also be conducive to promote and not impede sustainability. Chapter 5 addresses the ways in which the Australian government has restructured the Australian electricity and gas sectors. The authors explore the need to link any economic decisions involved in restructuring with environmental considerations. This, of course, echoes the clarion call from the Brundtland Report, *Our Common Future* of the need to integrate environmental and economic considerations. The authors illustrate how a blinkered focus on low price power can result in power with high environmental cost. Low priced power is not the same as low cost power. The authors argue effectively that micro-economic reform should be undertaken having regard to the need to protect the natural environment. The authors conclude with a call for the design of a sustainable energy market for Australia. This involves, according to the authors, a need for enforceable legal measures rather than voluntary programs. This is a timely call, given the current Australian government's preference for voluntary programs.

The authors then turn in Chapter 6 to the provincial response, that is the response of the various State Governments in Australia to energy and the environment. These responses include the greenhouse gas initiatives in each of the States. The States have announced that a multi-jurisdictional greenhouse gas emissions trading scheme will be developed. New South Wales has established a greenhouse benchmarks scheme. That scheme is implemented by Part 8A of the *Electricity Supply Act 1995*. Part 8A was introduced by the *Electricity Supply (Amendment) Greenhouse Gas Emission*

Reduction) Act 2003. The States have also developed Greenhouse Strategies. New South Wales has a Greenhouse Plan.²² This was developed by the New South Wales Greenhouse Office.²³ Other states also have Greenhouse Strategies. These are examined by the authors.

Attacking the issue of climate change involves a holistic approach, including one which integrates planning and development assessments and greenhouse gas emissions. The authors examine the initiatives for such integration in each of the States.

Sustainability also involves increasing the market share of renewable energy sources, so called “Green Power”. The authors examine the State Government’s initiatives to increase the Green Power schemes.

The authors also examine other sustainable energy initiatives, including geothermal energy initiatives, large scale wind farms and burning of biomass energy.

All of the above responses are supply side measures. However, as the authors note, demand side management and energy efficiency is also required. I have earlier noted how the demand for energy has been increasing exponentially in the last decade. The authors examine the initiatives on demand side management and energy efficiency of the States of Australia.

The authors conclude their book with a question. What would it be like to have a sustainable energy law future for Australia? This question is the focus of chapter 7. The authors analyse major energy policy statements made by the Australian government to give an insight into the way in which energy policy law in Australia is likely to develop. They critically analyse these policy

²² The NSW Greenhouse Plan is available at <http://www.greenhouse.nsw.gov.au/actions>.

²³ The NSW Government Greenhouse Office can be accessed at <http://thecabinetoffice.clients.squiz.net/greenhouse>.

pronouncements and indicate ways in which, in their opinion, the energy policy dialogue needs to shift in order to secure a truly sustainable energy law future for Australia. This is an important chapter bringing together their experience and knowledge gained over many years of research, writing and teaching. It sets a framework for debate that Australian governments and civil society need to engage in if Australia is to have a truly sustainable future.

The authors' contribution to energy law and the environment is topical and timely. It comes at a time when the world and Australia is, rightly, deeply concerned about climate change and the contribution to climate change caused by energy production and consumption.²⁴

I commend this thoughtful and well written book. I have great pleasure in officially launching the book.

²⁴ See the *Stern Report into Global Warming*, HM Treasury, London, 2006 http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cf also see the Intergovernmental Panel on Climate Change, IPCC WGI Fourth Assessment Report, *Climate Change 2007: The Physical Science Basis*, 'Summary for Policymakers' available at <http://www.ipcc.ch/>.