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Australia's energy policy options: a realist perspective

By Chris Lewis
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If any issue makes me mad it is the environment. Not merely because nothing ever seems to be done to address environmental degradation in a major way, but because it is "the" issue that complicates the goals of liberalism: that being to promote international economic growth and bring peace and prosperity to a greater proportion of the world's population. The obvious contradiction between economic development and environmental degradation is indeed the prime reason why I choose to write sparingly on the environment as it is difficult to downplay the importance of the economic imperative.

As recent debate indicates, in regards to various environmental policy proposals, it may be that very little is done. While Australian polls indicate majority support for the Labor government's emissions trading scheme (albeit down to 50 per cent in a November 2009 Morgan poll) consumers may be less supportive once higher costs are disclosed.

My hope is that we will do much more to reduce our carbon footprint, at least in per capita terms. However, such a wish may be unrealistic based on recent policy trends. Australia's bid to reduce greenhouse gas emissions is complicated by a reliance on the export of raw materials to developing nations (such as China) which will mean that anything Australia does at the domestic level will be merely a bandaid solution.

But can it be any other way in this era where even rich nations (including Australia) are under much greater pressure to maintain their high standard of living as taxation and labour market reform continues?

Let us begin with the nuclear energy option, although it has been argued that such a source will be 20 to 50 per cent more expensive than coal and gas unless a carbon tax was introduced (2006 Switkowski Report).

Given Australia's vast uranium ore reserves (estimated presently to be 23 per cent of known world reserves), should we utilise the source for domestic energy or merely export it? With the number of nuclear power reactors expected to increase from 443 to 1,000 by 2050 with the nuclear network expected to grow to 50 countries by 2020 (Ziggy Switkowski, "Minds closed to cleanest and greenest energy of all", *The Australian*, November 26, 2008), Australia can and will receive important revenue from such a source.

There are many reasons that will complicate any bid for the use of nuclear energy in Australia. First, as the Switkowski report noted, nuclear plants would need to be on the eastern seaboard, near the power grid and close to water. This means that bipartisanship will be needed. It will be far easier to promote a greater sale of uranium or even the potential for a nuclear dump site given that Central Australia has suitable locations for deep underground repositories for the safe storage of high level waste and spent nuclear fuel.

Reasons to oppose nuclear energy were put forward by Professor Ian Lowe (the Australian Conservation Foundation President) at his address to the National Press Club on October 19, 2005. Lowe noted the risk of a nuclear accident, best illustrated by the accident at Chernobyl in 1986 with 350,000 people still remaining displaced by 2005, three-quarters of a million hectares of productive land remaining off limits, and a death toll estimated to be between 4000 or 24,000. He also suggested an increased risk of nuclear weapons proliferation or incidences of nuclear terrorism.

In economic terms, Lowe argued that nuclear energy is not cheap as shown by Sweden, which probably has the best system for storing radioactive waste for the necessary hundreds of years, having to spend an estimated $12 billion to deal with all the fuel used by its existing reactors.

Lowe argues that Australia could reduce greenhouse pollution by 30 to 60 per cent by 2050 without using nuclear energy. He urges government to set a target of at least 5 per cent for the use of biofuels in the transport sector, to invest more in public transport, and encourage the use of best practice for the construction of buildings, and transport vehicles and for operations. Lowe also urges better efficiency by industries and in household appliances to reduce electricity consumption. He also highlights the potential of renewables: just 15 wind farms could supply enough power for half the homes in New South Wales by using less than 0.5 per cent of its pasture land, and that fitting solar panels to half the houses in Australia could supply 7 per

cent of all our electricity needs (including that of industry).

Renewable energy has grown in importance in recent years, a reality that suggests that Australia should not miss the boat. After all, global revenue from solar photovoltaics, wind power, and biofuels (PDF 2.23MB) alone expanded from $75.8 billion in 2007 to $115.9 billion in 2008 and is projected to increase to $US325 billion by 2018.

But other evidence highlights (PDF 479KB) just how expensive renewable energy sources (including wind, solar, geothermal, and biofuels) really are, despite them contributing just 2.4 and 3.4 per cent of global energy and electricity in 2006. The US Energy Information Administration reported in 2008 that on a dollar per MWh basis, wind is subsidised at $23.34 compared to natural gas at 25¢; coal at 44¢; hydro at 67¢; and nuclear at $1.59. Another report (focusing mainly on Spain) suggested that for every job created by state-funded support of renewables, particularly wind energy, 2.2 jobs are lost with each wind job costing almost $2-million in subsidies (Michael Trebilcock "Wind power is a complete disaster", *Financial Post,* April 8, 2009).

UK consumers are also paying much more because of wind power. With the UK government doing its bit to help the EU meet its target of 20 per cent carbon dioxide cuts by 2020, electricity customers in the 2007-8 fiscal year paid more than $1 billion to the owners of wind turbines, a figure expected to rise to over $6 billion a year by 2020 if the government's plan to build much greater wind capacity goes ahead (Peter Glover and Michael Economides, "Wind Power Exposed ...", November 25, 2008).

And while Denmark's overall electricity costs are the highest in Europe due to large subsidies for wind in 2008, it is also noted that Denmark's 6,000 wind turbines were yet to close a single fossil-fuel plant as they require 50 per cent more coal-generated electricity to cover wind power's unpredictability, while carbon dioxide emissions still rose by 36 per cent in 2006 alone (Glover and Economides 2008).

Solar energy is also very expensive, despite prices for panels falling by 25 per cent in 2008, largely driven down by Chinese manufacturers. While the expansion of Germany's solar energy industry through subsidies has meant that facilities are paid for in just four years as power generated by solar panels must be purchased at 43 cents per kilowatt hour compared to 9 cents for wind power, the solar facilities already installed will require an additional €27 billion for maintenance. Further, although depending on the type of panel and the amount of sun in each region, it is suggested that it will take between four and nine years before each panel produces as much energy as was used in making it, although the life span of a solar cell is between 30 and 40 years (Jens Lubbadeh and Anselm Waldermann, "How Effective Are Renewables, Really?", December 16, 2009).

The production of biofuels is even more problematic. It is argued that if Germany was to meet all of its gasoline and diesel needs with biofuels, it would require cropland greater than the country's area. This would also be true if Germans decided to heat their homes with wood pellets. A recent US study also suggested that biofuels would do more damage than traditional fossil fuels because lost forests would result in a disappearance of CO2 sinks while the fertilisation of biofuel crops could result in the release of N20 into the atmosphere, a greenhouse gas that is much more damaging than CO2 (Lubbadeh and Waldermann 2009). Another study concluded that ethanol substitution for petrol produces a slight increase in ozone when compared to petrol, especially in colder areas (Randall Parker, "East Asian Pollution Driving Western North America Ozone", January 20, 2010).

Even if Australia chooses the path of renewable energy, it will make little difference given that Australia's coal exports alone contribute nearly as much greenhouse gas emissions as the whole of the Australian economy. According to Coal Facts Australia 2008, the use of coal in Australia contributed less than 0.5 per cent to global greenhouse gas emissions (total Australian greenhouse emissions were about 1.2 per cent), yet Australia's 30 per cent of global coal exports accounted for an additional 1.1 per cent.

There are other reasons why Australia may pursue the development of renewable energy. After all, even coal is not an inexhaustible industry. While there is an estimated supply of coal for several hundreds of years, the US Energy Information Administration and *International Energy Outlook 2007* suggest that current estimates may downplay the likely increase in coal use in coming years. Renewable energy may indeed become much more attractive as costs for fossil fuels increase.

But the impact of Australian efforts will be minimal at the global level on present trends. Any domestic concern about greenhouse gas emissions is almost comical given our growing export of raw materials to Asia. The non-OECD Asia region is expected to account for nearly 90 per cent of the total world increase in coal use from 2006 to 2030 with China's installed coal-fired generating capacity in China projected to nearly triple from 2006 to 2030 (Parker 2010).

With China, already the world's largest coal producer, it is also worth noting that India's coal consumption (about a fifth of China's) will also increase as the Indian economy has been growing at twice the rate of electricity capacity with 68 per cent of India's CO2 emissions coming from coal.

As I have stated before, what Australia does has little relevance given present economic trends. The world remains largely influenced by the major powers. From a Western perspective, what the US and EU decides will long have the most importance in terms of potential policy ramifications for Australia and the world.

Our environmental hopes may indeed be folly in such a competitive world. With China becoming an almost uncontested global power, the failed Copenhagen climate summit suggests that its policy direction will not change unless it is forced to.

But Australia has obvious policy options which will not be challenged given the current status quo. First, it will add to its contribution to global greenhouse gas emissions through coal exports because of growing global demand. To offset this reliance, it promotes as yet untested technologies such as carbon capture and storage which involves the separation of CO2 from other gases emitted from coal combustion or gasification with CO2 injected deep underground into geological formations.

And coal will remain the main reason why Australia's electricity prices will remain relatively cheap by world standards as it provides 84 per cent of our electricity (Coal Facts Australia 2008).

Australians will decide at the next federal election whether a carbon trading scheme is introduced. Although Abbott has ruled out such an option (along with a carbon tax), one editorial in the *Economist* magazine titled "Wasting Money on Climate Change" argued that the cost to reduce one ton of emissions by subsidising renewable energy such as wind power was somewhere between $69 and $137 compared with less than $15 for a cap-and-trade scheme (Trebilcock 2009). The Pew Center on Global Climate Change has also urged the need for "cap and trade" policies that require greenhouse gas reductions from all sectors, including electric power.

But Australia will achieve little based on recent international economic trends. As long as there is no international agreement for both developed and developing nations to reduce greenhouse emissions, and the ongoing promotion of freer trade continues with such tolerance to an increasingly assertive China, then we can expect more of the same. Australia will talk the talk, but fail to walk the walk as its reliance upon coal exports alone quashes any environmental bid at the domestic level.

Chris Lewis has an interest in all economic, social and environmental issues, but believes that the struggle for the 'right' policy mix remains an illusive goal in such a complex and competitive world.

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