

AUSTRALIA: AN ENERGY EXPORTER THAT INCREASINGLY DEPENDS ON MIDDLE EAST OIL

Robert Pritchard
ResourcesLaw International

Australia is the sixth largest country in the world, with a land area of close to 8 million square kilometres – almost as large as the mainland USA and 50 per cent larger than Western Europe. Half of its 20 million population live in five large cities, Sydney, Melbourne, Brisbane, Perth and Adelaide.

Australia has a comprehensive energy policy with three objectives: prosperity, security and sustainability.

Australia is currently enjoying the global energy price boom. Of the 26 OECD member countries, Australia is the only net energy exporter. Since 1986, Australia has been the world's largest coal exporter. It is now also becoming one of the world's key LNG suppliers.

However, Australia now produces only 80% of its oil needs and relies on imports for the shortfall. As with other oil importers, it is increasingly dependent on the Middle East.

Like other countries, Australia is concerned about global climate change. However, Australia will not ratify the Kyoto protocol and is seeking technological solutions to reduce greenhouse gas emissions.

Energy Policy

In June 2004 the government released an energy White Paper, "Securing Australia's Energy Future".

This was a watershed in Australian government economic management. For the first time in its history, Australia has a comprehensive policy addressing all key energy issues.

The energy policy has three objectives: prosperity, security and sustainability.

1. *The Prosperity Objective*

This objective is largely concerned with underpinning the process of investment and improving the efficiency and productivity of the energy industry.

Developing Australia's energy resources, particularly coal and natural gas, for both domestic use and export is a national priority. The White Paper affirmed that the policy must provide certainty for investors.

Energy efficiency is a top priority. The government has estimated that energy efficiency alone could yield a A\$1 billion annual improvement in GDP.

The government is strongly committed to continue energy market reform in consultation with the states and territories.

2. The Energy Security Objective

Australia is well endowed with coal and natural gas reserves and has an extensive energy transportation infrastructure.

Australia's main short-term energy security threat is the risk of short term disruptions to energy production and distribution. The government is developing mechanisms for management of major oil and gas supply disruptions.

The main policy elements are:

- ❖ Engaging in international efforts to promote open oil markets and to maintain a high global capability to address global or regional oil supply disruptions (this is principally via the IEA Emergency Oil Sharing System and the APEC Energy Security Initiative)
- ❖ Protecting Australia's energy infrastructure from disruption through the Critical Infrastructure Advisory Council and other initiatives
- ❖ In the longer term, ensuring that investment in new energy supply, transmission and distribution capacity is made in a timely and efficient manner.

3. The Sustainability Objective

On climate change, the government's policy is:

"Australia recognises the necessity of lowering global greenhouse emissions and that achieving this will require substantive action over the long term. Internationally, Australia is committed to pursuing effective global action, and will continue to actively engage with other nations to this outcome. To be effective, a global response must encompass the world's largest emitters and address the issue of economic activity and emissions potentially moving from one nation to another with no overall global greenhouse benefit.

Domestically, Australia is committed to maintaining a strong and internationally competitive economy while lowering its greenhouse signature. Australia is committed to meeting its Kyoto target of keeping greenhouse emissions to 108 per cent of 1990 levels by 2008–12. Unlike many countries that have ratified the Kyoto Protocol, Australia is on track to meet its target, and will continue to monitor progress."

Australia has therefore decided:

- ❖ not to ratify the Kyoto Protocol
- ❖ to establish a A\$500 million Low Emissions Technology Development Fund to support industry-led demonstration projects and
- ❖ to pursue several renewable energy schemes including:
 - a remote renewable power generation program

- a renewable energy equity fund
- a renewable energy commercialisation program
- a renewable energy industry development program.

Overall, the government's aim is to place Australia on an environmentally sustainable footing for future generations. The government has said this requires "a concerted effort to move away from ad hoc interventions of the past to standard setting and market-based approaches. It involves designing an environment policy that is science-based, result-oriented and that can deliver practical outcomes by working in partnership with industry, regions and the community."

Coal

Australia has huge reserves of coal, gas and uranium. At current levels of production, these are adequate for many decades.

Australia's reserves of black coal are more than 39,000 million tonnes, or more than 110 years' supply at current rates of production. Australia produces 7 per cent of world black coal around 300 million tpa.

Australia accounts for a third of world coal trade and around half of world metallurgical coal trade. Australia exports over 100 million tonnes of metallurgical coal and 100 million tonnes of thermal coal. Three-quarters of Australia's black coal is exported, mainly to Japan, Korea and Taiwan.

Australia's brown coal (lignite) reserves are of world significance, with 20 per cent of world reserves located in Australia. At current rates of production, these brown coal resources will last 500 years.

Liquid Fuels

Australia is around 80 per cent self sufficient in the production of crude oil and natural gas liquids. Australia's crude oil and condensate production is around 30,000 megalitres (or 574,000 barrels a day). The oil fields offshore Gippsland Basin, Victoria have been producing since the late 1960s but peaked in the mid-1980s and have since steadily declined. Australia is therefore a net importer of crude oil and refined products.

Many prospective offshore areas remain to be fully explored. The US Geological Survey estimates that there are significant undiscovered oil and gas resources in Australia's four major offshore regions, the Gippsland Basin in Victoria, the Bonaparte Basin in the Northern Territory and the Browse and Carnarvon Basins in Western Australia.

Australia's downstream petroleum industry includes eight major oil refineries operated by four companies – BP, Caltex, Mobil and Shell. Recent years have seen grocery retailers such as Woolworths and Coles enter the retail distribution sector.

Gas

Australia's natural gas resources have increased fourfold over the past two decades. Around 90 per cent of Australia's reserves are located off the coastline of Western Australia.

In addition to natural gas, Australia is starting to utilise its substantial reserves of coal seam methane.

Australia exports natural gas in the form of liquefied natural gas (LNG). Exports of LNG totalled 7.8 million tonnes in 2002-03. All of Australia's LNG exports are currently sourced from the Carnarvon Basin in Western Australia. Here, the North West Shelf joint venture supplies natural gas from several offshore gas fields to an onshore LNG processing facility. In the near future, natural gas will also be supplied from the Bayu-Undan gas field in Timor Sea, processed through an LNG plant at Darwin in the Northern Territory.

Uranium

Australia has more than doubled its uranium resources over the past 20 years, total resources now exceeding 700,000 tonnes. The Olympic Dam mine in South Australia, owned by BHP Billiton, is the world's largest uranium mine.

Renewables

Renewable energy currently accounts for less than 5 per cent of total energy consumption in Australia. Of the renewables used in electricity generation, hydroelectricity contributes the largest share, accounting for 95 per cent.

As mentioned above, a number of policy measures have been introduced in Australia to support the uptake and development of renewable energy.

Electricity Reform

The Australian electricity industry has been one of the pioneers in energy market reform. According to a recent IEA review, the Australian electricity market is a model for other countries.

With over \$86 billion in assets, the electricity industry ranks as one of Australia's largest. The installed capacity of the industry is around 45,000 megawatts. Compared with 1990, the industry in 2002 delivered more electricity (up 45 per cent), to more customers (up 26 per cent) with less than half the number of employees. The total time that electricity was not available for delivery through the transmission network (due either to generation or transmission outages) was 5.1 minutes in 2002.

Reform of the electricity industry has consisted of:

- disaggregation of the vertically integrated, state-owned utilities into separate generation, transmission, distribution, and retail supply components;
- corporatisation and privatisation;
- horizontal separation of the generation sector into competing businesses;
- separation and regulation of the transmission and distribution functions;
- ring fencing of distribution and retail businesses (activities undertaken by one company); and
- introduction of retail competition.

The Future

Australia is seeking prosperity, security and sustainability in its energy sector. To these ends, Australia is looking to reduce its dependence on Middle East oil. At the same time, it is looking for technological solutions to the climate change problem. Reducing emissions from fossil fuel use offer the greatest potential for achieving this but the government is keeping all options open and is encouraging the potential use of nuclear and renewable energy.