

The Australian Institute of Energy Sydney Branch

Sydney, 21 April 2008

APEC: ITS ROLE IN ENERGY SECURITY AND CLIMATE CHANGE AND WHAT IT MEANS FOR AUSTRALIA

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What is APEC?

Asia-Pacific Economic Cooperation (APEC) is a cooperative, intergovernmental forum with 21 member economies. APEC is unique in being the only intergovernmental forum in the world committed to reducing trade barriers and increasing investment that does not require its members to enter into legally binding obligations. APEC operates by promoting dialogue and equal respect for the views of all participants and basing all of its decisions on consensus. Its members account for almost half of world trade and generate close to 70 percent of global economic growth.

The 21 APEC member economies work together to sustain economic growth through a commitment to open trade, investment and economic reform. By progressively reducing tariffs and other barriers to trade, APEC member economies have become more efficient and exports have expanded dramatically. At their summit in Sydney in 2007, APEC leaders agreed to accelerate their efforts towards regional economic integration.

In geopolitical terms, APEC is probably the most important forum in which Australia has significant influence. Clearly, APEC now has more momentum than at any other time in history. As President Putin of Russia stated at the 2007 summit:

"APEC has entered the 21st century as an authoritative regional structure with a broad membership on both sides of the Pacific. Russia has been successfully cooperating within its framework. Due to the rapid development of the Asia-Pacific region, APEC can be called the most promising economic association of the planet.

...

Active and multifaceted participation in the work of APEC is increasingly an important aspect of Russia's foreign policy on its eastern frontiers, and our interaction with the [APEC] forum has been growing every year."

With specific regard to the energy sector, Australia put up its hand in 1990 to provide the secretariat for the APEC Energy Working Group, which meets twice a year to supervise the APEC programme of collaborative work on development of regional energy markets. The Working Group reports directly to a meeting of APEC Energy Ministers that is held every first or second year.

ResourcesLaw International has been privileged to carry out a number of consultancy projects for the Energy Working Group and has spoken at two meetings of APEC Energy Ministers. We have witnessed a deepening of consensus amongst APEC members on issues of common concern to regional energy producers and consumers.

The Modern Energy Crisis – The Dual Challenge of Energy Security and Climate Change: (1) Energy Security

According to the IEA's World Energy Outlook 2007:

"The consequences ... of unfettered growth in global energy demand are ... alarming ... a supply-side crunch in the period to 2015, involving an abrupt escalation in oil prices, cannot be ruled out ... [and] rising global energy demand poses a real and growing threat to the world's energy security."

Global demand for energy continues to increase, amidst concerns over the security of oil supply from the Middle East. Most of the 21 APEC member economies are energy importers. However, Russia is the world's largest energy exporter and Australia has recently become the world's third largest. APEC primary energy demand has been projected by the Tokyo-based Asia-Pacific Energy Research Centre (APEREC) to rise by more than 70% between 2002 and 2030.

By energy type, APEC demand is projected to be:

Primary Energy Type	Annual APEC Growth Rate (%)	Increase: 2002 to 2030 (Mtoe)
Oil	1.7	2,165 → 3,488
Coal	2.8	1,570 → 3,366
Gas	1.8	1,255 → 2,050
Nuclear	1.9	382 → 643
Hydro	2.0	114 → 197
Renewables	0.9	460 → 588
Total primary energy demand	2.0	5,939 → 10,332

Facilitation of energy trade and investment justifies priority attention on account of the energy sector's unique characteristics, namely:

- (i) the centrality of energy to economic growth and sustainable development

- (ii) the sector's dependence on bulk transactions
- (iii) the sector's heavy reliance on investment in costly infrastructure and transportation systems
- (iv) the sector's environmental sensitivity and, imminently, its interaction with emerging carbon markets.

Signs of stress in the energy supply-demand balance are already apparent:

- investment in the APEC energy sector has fallen behind regional economic growth
- importers are rushing to invest upstream
- national oil companies are competing with private sector oil companies
- inter-fuel competition is increasing and
- some fuel switching is occurring.

The Modern Energy Crisis – The Dual Challenge of Energy Security and Climate Change: (2) Climate Change

According to the IEA's World Energy Outlook 2007:

"Rising CO₂ and other greenhouse gas concentrations in the atmosphere, resulting largely from fossil energy consumption, are contributing to higher global temperatures and to changes in climate."

According to APERC, emissions from energy consumptions in the APEC region will double by 2030.

To better manage the risks of operating in an era of threatening climate change, the energy industry has been calling on APEC member economies to introduce mechanisms for determining the "carbon price", that is, the price of GHG emissions. APEC economies have begun to respond to this call in three ways: (1) by affirming their commitment to the UNFCCC; (2) by working towards a post-2012 agreement to follow the first Kyoto period and (3) by introducing domestic "cap-and-trade" emissions trading schemes. Largely following the EU model, these cap-and-trade schemes are now being designed for introduction in Australia, Canada, Japan, New Zealand and at regional and state level in the United States.

The APEC Energy Investment Challenge

To meet energy growth, APERC predicts that APEC economies will require between US\$5.95 and 7.55 billion per annum until 2030. Most of this investment will be required in the electricity sector, raising important questions about the affordability of new generation plants. Coal remains the most widely-used fuel for base-load power generation in the APEC region for the simple reason that it

offers the least-cost option, even despite the very large capital cost (a conventional coal-fired power generation plant of 1000 MW costs around US\$1,000 million).

The APEC economy that has most to gain from increased energy investment in China, largely because of the large fleet of new power stations that it must instal to cater for the surge in its economic growth.

APEC energy sector trade and investment is tending to lag because of economy-specific and project-specific barriers which are encountered either at international borders or domestically (behind-the-border). These barriers include:

- industry policy and industry structure
- unpredictability or uncertainty of host country investment conditions
- inadequate property rights
- unstable or static economic conditions
- the impact of corruption in some economies
- lack of growth in power market demand
- barriers to competition
- financing risks
- taxation risks
- other, project-specific, investment risks and
- finally, domestic regulatory barriers.

There are four types of domestic regulation that, to some extent, are acting as barriers to energy trade and investment:

- economic regulation
- environmental regulation (or the absence thereof, such as the absence of economy-wide GHG regulation)
- technical regulation and
- labour market and occupational health and safety (OH&S) regulation.

There is no standard regulatory formula that should apply to the energy sector of every APEC economy. To begin with, the local energy resource endowment (or the lack of one) must be taken into account as must the extent of traditional dependency on indigenous or imported fuel. In this connection, APEC will at Australia's invitation hold an Energy Trade and Investment Roundtable this coming September in Cairns.

The APEC Energy Technology Challenge

Even with the advent of a carbon price mechanism, the challenge of developing more efficient and lower-emissions energy technologies will not be solved.

To date, the most common approach to addressing the environmental effects of fossil energy use has been by utilisation of GHG emissions abatement technology and development of projects for geosequestration of GHG emissions. Other emerging responses involve entirely new technologies for pre-treatment of coal by chemical refining and by gasification, more efficient generation technologies (such as IGCC and PFBC), poly-generation options and the integration of old and new technologies.

Extensive R & D of new energy technologies has already been carried out in some APEC economies but much more requires to be done in many others. The standout R & D programs have been those of:

- the US Clean Coal Technology Roadmap
- the Japan Coal Center (JCOAL) and
- Australia's CSIRO and cooperative research centres.

A number of important cooperative international initiatives involving many of the APEC economies have been under way for some time:

- FutureGen (which started as a US domestic initiative)
- the Carbon Sequestration Leadership Forum
- the Asia-Pacific Partnership on Clean Development and Climate
- the IEA Clean Coal Centre
- the APEC Energy Working Group program and
- the APEC EWG Experts Group on Clean Fossil Energy (EGCFE) work program, especially its CO₂ emissions reduction studies, coal flow seminars and other technical and policy seminars.

At their meeting in Sydney, APEC Leaders agreed to establish the Asia-Pacific Network for Energy Technology (APNet) to strengthen research linkages in the fields of clean fossil energy and renewable energy. APNet is to be inaugurated at a major energy research conference later this year.

Australia's Unique Position as an Energy Exporter

Australia, like most other APEC economies, is increasingly dependent on imported oil. However, it has the opportunity of further expanding its exports of coal and of LNG. The APEC Gas Forum

(APGAS) will continue to promote and facilitate intra-regional LNG trade for the benefit of both producers and consumers in the region.

Through the Australian Energy Alliance, the Australian energy industry provides direct input to the APEC Energy Working Group and the APEC Energy Business Network. Anyone interested in contributing to the work of the Alliance may make contact with the secretariat. Contact details may be found on the Alliance website www.australianenergyalliance.com.au.

Conclusion

It is readily apparent that, since the inception of APEC in 1989, Australia has in a number of ways played a constructive role in accelerating APEC energy trade and investment for the mutual benefit of itself and the billions of energy-dependent customers in the Asia-Pacific region. Long may this continue, keeping a close eye on climate change.

The key APEC reference point for all of this is the "Sydney APEC Leaders Declaration on Climate Change, Energy Security and Clean Development of 9 September 2007" ("the Sydney Declaration"); see www.apec.org

ResourcesLaw International is an Australian-based consultancy which provides specialist advisory services to governments and corporations on:

- energy law and policy
- energy projects, project financing and risk management
- energy industry reform and regulation.

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In 2000/2001, Robert chaired the World Energy Council study on "Electricity Market Creation in Asia Pacific". In 2001/2002, he was a consultant to the APEC Energy Working Group on Cross-Border Power and on Micro-Economic Reform of the Electricity Industry. In 2004, he was a consultant to APEC on Cross-Border Natural Gas Trade and on Energy Security.

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