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ASIA-PACIFIC ENERGY SECURITY AND SUSTAINABLE DEVELOPMENT

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Why is Energy Security Important?

Fears of running out of oil have always haunted the energy industry. After the 1973 OPEC crisis, energy security became a major foreign policy and economic policy concern for all energy importing nations. The IEA was then established as a counter to OPEC and energy importing nations made concerted moves to diversify their energy supply sources away from oil.

The World Energy Council considers that oil will continue to be the dominant fuel in energy markets for many decades to come. Over the course of the present century, the world is likely to move to a hydrogen economy. In the meantime, synthetic fuels, such as liquids from gas and coal, will play an increasing role in meeting the demand for energy. Renewables will also play an increasing, although less significant, role.

Over the last several years, energy security has again become the most widely-discussed concern on the energy policy agenda. There are five reasons for this:

- (i) The main reason is that, since 1973, global primary energy demand has doubled.
- (ii) Secondly, some large energy importing nations, especially the US and China, have been increasing their energy imports faster than their domestic production. These nations are therefore now relatively far more vulnerable to energy supply disruptions than they were in 1973.

- (iii) Thirdly, energy markets have become globalized. Despite the doubling of demand, there has been no major energy crisis since 1973. Energy has remained both available and affordable to most consumers around the world. This is an almost incredible achievement by global energy markets. Most sovereign nations now accept that their future energy security is linked to competitive energy markets.
- (iv) Fourthly, capital markets have become globalized. The global capital markets are now so huge and so sophisticated that professional fund managers and professional analysts make most of the investment decisions that really matter. Fund managers look for complete transparency and predictability in the terms of investment. If they cannot easily find it with a particular government, a particular corporation or a particular project, they will not pay attention to it.
- (v) The final, and most recent, reason for increased concern about energy security is that terrorism is on the increase. Energy importing nations were already anxious about their energy security before the events of September 11, 2001. The fear of terrorism since then has multiplied this anxiety.

What Makes Individual Countries Vulnerable to Energy Supply Disruptions?

There are three main causes:

- (i) The first, and the most important, is over-dependence on one form of primary energy — whether it is oil, gas, coal, uranium, hydro or the new forms of renewable energy.
- (ii) The second cause is over-dependence on one source of any form of primary energy — whether it is oil from the Middle East, coal from Australia or LNG from Indonesia.
- (iii) The third cause is over-dependence on a single delivery system — whether it is a single pipeline, a single energy terminal or a single transmission grid.

The Key Role of Cross-Border Trade in Natural Gas

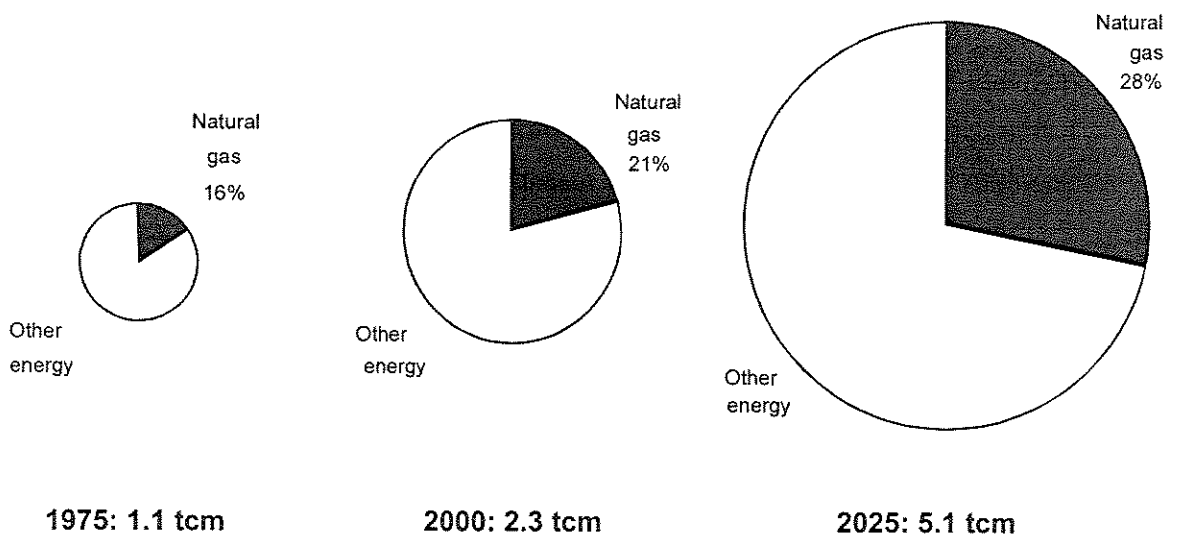
The Asia-Pacific Economic Cooperation (APEC) Energy Security Initiative proposes some short-term measures to respond to temporary supply disruptions, such as emergency stockpiling. It also proposes some longer-term policy responses, the most notable of which are measures to accelerate cross-border trade in natural gas.

Natural gas is now “the fossil fuel of first choice”. Cross-border natural gas trade, particularly LNG, is certain to play a key role in strengthening energy security. Natural gas has started to become an internationally traded commodity like oil.

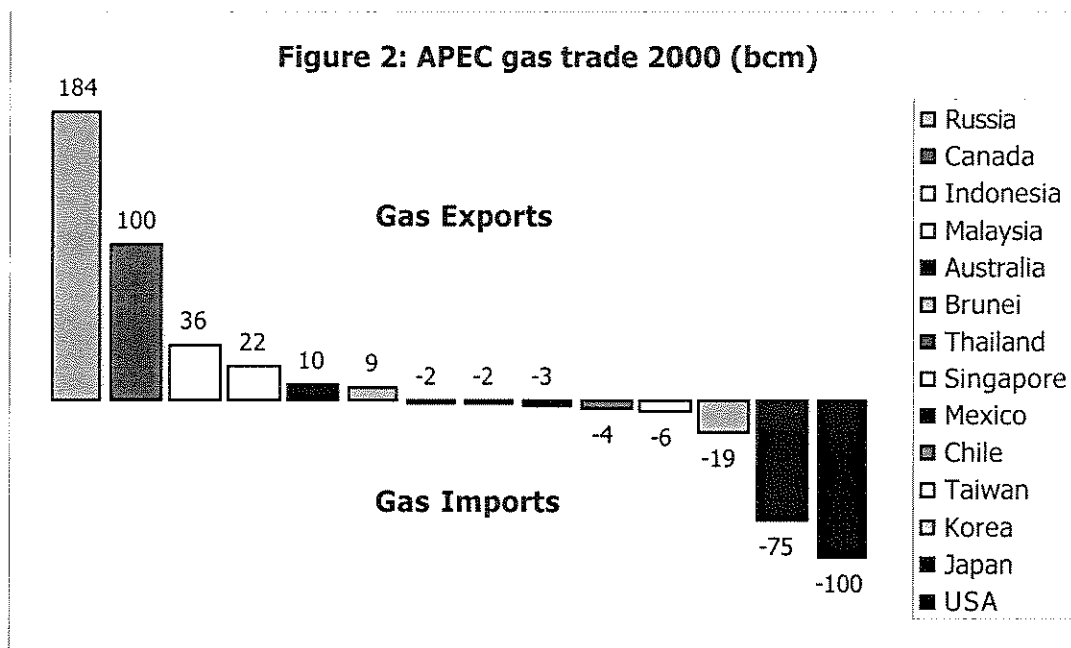
The rate of growth in global natural gas consumption is expected to continue to outstrip overall energy consumption. The International Energy Agency recently forecast that natural gas consumption would reach 5.1 trillion cubic meters per annum by 2025 and would increase its share to 28 per cent of primary energy consumption. This near doubling of the gas market, with a continuing mismatch between the locations of demand and supply, will continue to drive rapid growth in cross-border gas trade.

The sustained rate of the past and likely future growth in the global gas market is illustrated in figure 1:

Figure 1: Global Annual Consumption of Natural Gas



There is, however, a mismatch between the location of gas resources and centers of demand in the APEC region. This is illustrated in figure 2:



Most of Russia's huge volume of gas exports go to Western Europe and do not enter into APEC gas trade. Canada's gas exports are all directed by pipeline to the US. The pattern of APEC gas trade is about to change, with both the US and China set to become significant importers of LNG. It is noteworthy that, in 2002, China did not appear on this graph.

The Issue of Sustainable Development

Sustainable development has progressively become the single most dominant policy issue in the energy world. In the ten-year period between the UN Conference on Environment and Development in Rio de Janeiro in 1992 and the World Summit on Sustainable Development in Johannesburg in 2002, sustainable development in its three dimensions (economic, social and environmental) has become integrated into mainstream public policy and energy industry practice.

Energy security is a key element in progressing towards sustainable development in the energy sector.

Conclusions

The world is not about to run out of fossil fuels. However, energy markets will almost certainly become more susceptible to interruption and energy is likely to become more expensive over the long term.

The future of energy security and sustainable development of the energy sector will depend on six factors:

- (i) the **continuing efficiency of global energy markets**
- (ii) a **diversified portfolio** of energy forms and energy supply sources, with increased utilization of natural gas
- (iii) **timely investments in the required infrastructure**: energy production facilities, pipelines and other transport facilities, electricity generation facilities and electricity transmission and distribution networks
- (iv) **flexible domestic energy policies** – which can adjust to global market shifts
- (v) **interconnected energy systems**: interconnection offers regional communities more opportunities to achieve environmentally favourable outcomes than they can derive from geographically isolated, smaller systems and
- (vi) finally, **keeping all energy options open**; in fact, the World Energy Council considers that the number one action to meet energy security and sustainability goals is to keep all energy options open, including greenhouse gas-neutral energy sources such as nuclear and large hydro power.

I wish the people of Macau every success in addressing these important future challenges.

Note: This address is based on the personal views of the author and does not represent the official views of the World Energy Council.

Further information about the World Energy Council is obtainable from their website address: www.worldenergy.org

Information about the 19th World Energy Congress which will be held in Sydney on 5 – 9 September 2004 is obtainable from the website address of the conference organisers: www.tourhosts.com.au/energy2004

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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Robert Pritchard is the editor of "Economic Development, Foreign Investment and the Law", published by the International Bar Association and Kluwer Law International, London 1996.

Since 1998, Robert has been a member of the Finance Committee of the World Energy Council. He chaired the World Energy Council study on "Electricity Market Creation in Asia Pacific" in 2000/2001. Robert has also been a consultant to the APEC Energy Working Group on Cross-Border Power, Micro-Economic Reform of the Electricity Industry, Energy Security and Cross-Border Gas Trade.

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