



**1st Meeting of the CSCAP Study Group on
Asia Pacific Cooperation for Energy Security
Singapore
23-24 April 2007**

Chairman's Report

The first meeting of the CSCAP Study Group on Asia Pacific Cooperation for Energy Security was held on April 23rd and 24th at Traders Hotel in Singapore. Co-chaired by CSCAP-Singapore and CSCAP-India, the meeting gathered around thirty participants and observers from thirteen of the member committees.

The goals of the study group as stated were to gain a better understanding of the link between energy and security, the implications of such a link, the consequent options, and the prospects for policies related to regional cooperation on the issue. Arising from an increasing demand for energy and an uncertain and diminishing supply, Kwa Chong Guan, CSCAP-Singapore co-chair, noted that the current energy security situation has often been met with either "cooperate and coordinate" or "control and confine" approaches from governments. While the latter includes diversifying and security supplies, developing alternative sources, and increasing energy efficiency in order to reduce dependency and resource vulnerability, the former approach emphasizes integrated energy markets, making choices based on environmental impact, joint development of alternative sources and ensuring supply chain security. While the two approaches are not mutually exclusive, Kwa emphasized the need for energy security to be approached collaboratively, as it is a transnational issue. In essence, the study group was organized to examine how cooperation on energy could lead to a more secure future for the region. The first meeting of the group focused on defining the problem.

Summary of Discussions

Session 1 began with a presentation by Talmiz Ahmad of CSCAP India on the country's perception of energy security and regional cooperation. As access to affordable resources is necessary to sustain India's economic growth, concern over energy security arises from the increase in global demand for energy supplies and the limited availability of such resources. Additionally, as many countries are forced to import their supplies of oil and gas, concerns over resource competition and dependency reinforce security concerns.

Much of the increased demand observed for energy has come from Asia; it was noted that between 1970 and 1994, demand for energy from the region increased by 400%. In India, primary energy supplies would have to increase by 3 to 4 times over the next 25 years in order to meet economic and development goals. However, even if India were to exploit the full potential of hydropower and nuclear technology, the country would still be reliant on fossil fuels for as much as 85% of their energy mix.

India therefore engages in "oil diplomacy" by forming strategic energy partnerships with many countries throughout the world, primarily at the bilateral level. Such partnerships are aimed at acquiring and diversifying sources, while also engaging in research and development. Though regional cooperation was largely manifested through transnational gas pipelines, including the Iran-Pakistan-India Pipeline and TAPI, multinational dialogues have also explored the issues of energy security, stability, sustainability, and the need to reform the Asian oil market and establish an Asian Gas Grid.

Andrew Forbes from CSCAP Australia then assessed his country's energy security situation and policies. The country is the world's largest exporter of coal and one of the largest LNG and uranium exporters. With an abundance of domestic resources, the country is largely self-sufficient, enabling it to export 75% of its black coal. Australia has 38% of the world's low cost uranium reserves, though the government has yet to establish a domestic nuclear industry. It was noted that nuclear power would be more costly than staying with coal as the primary energy source; moreover, the federal/ state system in Australia complicates the development of nuclear power, while the question of nuclear waste has also not been solved. As for liquid fuels, Australia has 60% self-sufficiency with a large dependence on its offshore sources. What imported resources Australia does use come from Asia, and not the Middle East. Thus, as the country is generally considered secure overall, the focus of the government is aimed at improving energy efficiency and encouraging further resource exploration in the country's EEZ.

Australia does face a number of energy security issues, however. Many of the country's resources are located far away from the population, leading to large distribution costs. Its electricity generation infrastructure is agreed to be out of date, while there is a need to invest in clean coal technology. Past disruptions in Australia's energy supplies have resulted in substantial economic losses for the country, motivating the government to improve reliability of such supplies. As energy trade is important to Australia, it is critically concerned with protecting its shipping industry. Energy security for the country is therefore primarily focused on three concerns: the security of its offshore energy infrastructure, the protection of Australian seaborne energy flows and the protection of global flows.

During the question and answer session that followed Forbes' presentation, it was noted that the coal produced in Australia burns more cleanly than that produced in India or China; therefore, a possibility for regional cooperation might exist in the burning of Australian coal in the aforementioned countries, thereby providing for a cleaner environment as well.

Session 1 continued after the break, focusing on China's energy needs and its policy on regional energy cooperation. Zhou Xingbao provided a detailed history on China's energy demands, highlighting that China had turned from a net exporter of oil to become a net importer of crude oil since 1993. It is understood that the demand for energy is linked to a nation's Gross Domestic Product (GDP) growth, and China's high economic growth in the past decade had made it the second highest consumer for energy and oil. However, Zhou argued that China's per capita consumption of energy remains low as compared to the developed countries such as Japan and the US.

Energy security arose primarily due to soaring oil prices as demand exceeds supply. Zhou reiterated that China, while remaining a significantly large consumer of oil, could not be blamed for the escalating prices of crude oil. He made his argument by stating that China's net import of oil is lower than Japan, and the nation utilises coal as its main energy resource. More importantly, China's energy demand is met by its domestic production, as the country is more than 90% self-sufficient. Nevertheless, it hopes to improve oil exploration technology so as to reduce its import of oil.

Concerns over environmental impacts were thus raised in the burning of coal as a fuel. China recognises that its emphasis on economic development has led to detrimental effects on the global environment. Therefore, it was mentioned that China's recent energy policy places priorities towards energy conservation, sustainability issues, and environmental development. The nation is keen to invest in nuclear power as a cleaner form of energy over

coal. It also plans to raise its use of renewable resources such as biomass from 7% to 16%, in the hope to reduce greenhouse emissions. It aims to diversify its energy-mix by harnessing nuclear and hydropower. However, it also falls short in reducing its energy consumption per unit GDP by 20%.

Yang Yi outlined international cooperation as one of the key ingredients in China's energy policy. It is hoped that mutual benefits among the energy consumers and producers can be strengthened through dialogues. It is critical to safeguard the stability and security of energy producing nations. In addition, he also cited cooperation as not limited to the international trading market for energy commodities, but also the transfer of advanced technology that helps to protect the environment. Cooperation in the area of research and development would subsequently lead to a cleaner and more efficient output of coal, as the latter has been cited as its primary source of energy. China has thus established bilateral cooperation with Japan in the exchange of clean fuel technology and also with India in experimenting with bio-fuels.

In the round of discussions, the general consensus is that China's tremendous appetite for fossil fuels, regardless of its low per capita consumption, has contributed to the degradation of the environment. While it remains understandable that China's demand for energy will inevitably grow as a result of its booming economy, it has to look into other renewable sources of energy that will cause less pollution to the environment. One of its thriving industries that consumes large amount of fuel is the transportation sector. With its huge population and possibly a change in its social lifestyles, the automobile industry needs to look into alternative fuel sources other than petroleum, and thus places less demand on oil. On the other hand, the panel of discussants also concurs that a greener atmosphere cannot be achieved by a single nation. It is perceived to be unfair towards China in saving the global environment at the expense of its modernisation efforts, and thus international cooperative efforts in the knowledge transfer of advanced technology needs to be developed in tandem and shared willingly by developed nations.

Michal Meidan provided the European Union (EU) perceptions on energy security. In addition to the main threats of supply disruptions, price hikes, as well as environmental degradation, Meidan cited that stockpiling, deregulation of the markets, as well as the need for more advanced distribution capacities also pose as threats to energy security, in which the EU would consider these factors in forming a coherent energy policy.

One of the key issues among its energy policy is the establishment of cooperation among its member states. As evident among many participants that solidarity among the various nations would lead to stability in the energy market, a strong unification among the EU nations would also encourage technology transfer. Research and development are needed in the area of more efficient and diverse energy mix, so as to alleviate the reliance on fossil fuels. Cooperation among the various EU nations is also vital in coming up with an integrated approach to tackle climate changes.

However, the EU faces challenges in integrating a large number of countries under its umbrella, primarily owing to the imbalances of supply and demands by various nations. The varying level of infrastructure as well as legal framework among the different countries serves as a hindrance to the establishment of a common EU energy policy. Furthermore, rising producers of energy commodities could leverage on the energy market as a political tool to alter the current international system.

Despite the surmounting challenges it faces, the EU generally agrees to the diversification of energy resources and invests into renewable resources that would sustain its future energy demands. Investments in both capital as well as technology are also needed in the infrastructure that supplies the energy. While these strategic plans are generally construed to be beneficial for their future energy needs, nations are still not forthcoming enough to take the lead, especially in terms of capital investment.

Diversification is not only pursued in the aspect of alternative fuels, but also on the front of securing current fossil fuels from other locations. Citing an incident of the natural gas stoppage from Russia, the EU has also diversified their sources to Algeria, and is thus less dependent on Russia. While such political issues could factor in the security of energy supply, Meidan acknowledged that the current hot topic of concern in the EU is on the issue of climate change.

With China and India viewed as major rising economic powers that would implicitly be classified as large energy consumers, questions were also raised on the possibility of a world energy association rather than the International Energy Agency (IEA), which is founded by members of the Organisation of Economic Cooperation and Development (OECD). Meidan cautioned on the idea of creating a global forum on energy and outlined that the IEA has mechanisms that exists to incorporate China and India.

Session 2 began with our Japanese counterpart presenting on the issue of energy efficiency. In light of the already matured Japanese economy and dwindling population, Yuji Morita highlighted that its GDP growth will not be as phenomenal as the developing nations. While Japan aims to reduce energy consumption for its heavy industries, it also recognises that a surge in energy consumption arises from its commercial, transport as well as residential sectors. Hence new laws are introduced to regulate energy consumption not only in the industries, but other sectors as well.

After the first oil crisis in 1973, its steel industry has switched to using coal as its main source of fossil fuel in order to reduce the dependence on petroleum. The burning of coal would be a relatively cheaper option but poses as a major pollutant to the atmosphere. Therefore, Japan is presently targeting to keep its carbon dioxide emission similar to the 1990s, notwithstanding its modest GDP growth. It attempts to diversify from fossil fuels and invest in nuclear technology, which is deemed to be renewable and offers a cleaner energy mix than oil, coal or gas. Japan has several initiatives to cooperate with China, India, and Vietnam on energy conservation, and is committed to assist internationally to address the issue on environmental protection. Its proposal towards economic integration as well as its willingness to make intellectual contribution in the field of energy efficiency has been welcomed by ASEAN.

However, slight sceptism did surface on Japan's willingness to share and transfer its knowledge on advanced technology that places less dependence on fossil fuels, for example, the hybrid automobile. Morita recognised that while such hybrid cars have deemed to be popular outside Japan, its current society still prefers to utilise automobiles that run purely on petrol. Furthermore, he saw that such advanced technologies that resulted in energy efficiency have been mostly developed by private companies, and therefore considerable challenges in the light of intellectual property rights could eventually surface when sharing the patented technologies with other parties. Transfer of technology is also difficult even at the national levels, and without government subsidies, it seems difficult to import such technologies to other nations.

The discussion also debated on whether it would be worth to invest into energy efficiency in the long run since energy consumption has been increasing in spite of a better usage of energy resources. The panel shared its view that societal growth is directly proportional to energy consumption, and with reference to the case in Japan, efforts have been dedicated to reduce consumption in the heavy industries, but rising demands from the residential and commercial sectors have led to an escalation in the overall energy demand for the nation. It is evident that the domestic demands for energy have shifted from the industrial to the residential sectors, and questions arise in whether the advent of more efficient technology in converting fuel to energy could have impelled the surge in energy consumption by the affluent society.

Ralf Cossa and Wayne Mei both spoke on the safety of nuclear energy being harnessed for civilian usage. Nuclear energy has been likened to a 'double-edged sword' that offers both extreme benefits as well as disadvantages. The exploitation of nuclear energy is deemed to be environmentally friendly that does not emit any harmful greenhouse gases. However, the impending issue that discourages nations to develop nuclear energy resides deeply in the political concern of turning them into a weapon of mass destruction. While harnessing nuclear power for civilian purposes is a milestone in technological advancement, the enrichment of the Uranium 235 from the civilian usage to the weapon-grade level can be easily achieved by running the element in the core several times. Therefore, developed nations such as the US are duly concerned in transferring the technical know-how of developing nuclear power solely for energy consumption. As a result, programmes that offer comprehensive fuel services to energy deprived nations have been proposed to discourage the proliferation of nuclear enrichment to rouge states.

The panel also raised the question on the viability of nuclear power in relation to environmental issues. While the process of churning out energy from nuclear power is deemed to be clean, the problem arises in the disposal of the nuclear waste materials. The radioactive wastes, which have no practical purposes, would pose an environmental threat regardless of where they are to be disposed. Hence, the pressing issue of nuclear waste disposal is one of the main problems a nation could face when formulating a long-term energy plan.

Wenran Jiang then gave an overview of Canada as an emerging energy producer. Focusing on Alberta, he noted that the province is ranked second in terms of recoverable crude oil reserves in the world, succeeded only by Saudi Arabia. The province moreover has the objective of becoming a major refining and petrochemical hub producing and exporting a significant portion of its oil sands resources as a high-finished product. Attracting investment in downstream energy sectors is therefore a priority for the Alberta government. International investment in the oil sands totaled \$35 billion from 1996-2004, and is expected to total \$100 billion between 2005 and 2020.

It was noted that there is no national energy strategy in Canada, as provincial governments have jurisdiction over the issue. Therefore, warnings by Paul Martin not to take Canada for granted went as empty threats, despite the fact that Canada is the largest energy supplier to the US. Moreover, the North American energy market in general is very integrated; one cannot distinguish between the US and Canada. Importantly, the US is a primary player in Canadian investments, and 85% of the Canadian economy is tied to the US. Further integration with the US is one option.

However, economic concerns about the US' future have led to the fear that while there may be a supply, there will be no consumers—leading to the argument that the market for oil sands should be diversified and opened further to the Asian region. Two investments from China at \$150 million each have totaled .6% of the total money invested.

Additional concerns exist however in regard to the energy and water required to extract the oil sands and the speed of development; environmentalists call for moderation, while others propose a royalty scheme. Overall, however, Canada has the potential to balance energy security on the global scale through the provision of resources to Asia, thereby balancing the region's dependency on the Middle East. Moreover, Canadian oil to Asia will significantly reduce the amount of oil passing through the Straits of Malacca. Though plans were scrapped due to US pressure, if a pipeline could be built in the future from Canada to the Pacific, exports to Japan and China may increase. Therefore, the country may arguably be regarded as an emerging "energy superpower."

Chien Chung of Taipei then spoke about the potential of wind power. Fossil fuel currently meets around 85% of the world's energy needs; however, the usage of such materials has an adverse environmental impact, and is not sustainable given its finite nature. The use of nuclear power, however, meets concerns over its and technical difficulty, as well as its dependence on uranium. Hydroelectric power causes ecological damage through the construction of reservoirs and dams. While there are many alternative energy sources in use and development, wind power is argued to be the best option.

Harnessing the power of the wind to generate electricity, wind power does not emit carbon dioxide or pollutants. It is therefore clean and sustainable as an energy source. It does not require regional cooperation or safeguards, and is cheaper than other alternative sources, including solar and ocean power.

However, wind power does have its drawbacks. In 2005, it generated only 1.1% of the world's energy needs; in Taiwan, wind power for 2006 amounted to one third of one percent of total output. Additionally, wind power generation is dependent on the wind blowing neither too hard nor too slow, lowering the efficiency of the technology.

Gurmit Singh then spoke of Malaysia's energy situation. Though Malaysia maintains exporter status because of its oil and gas reserves, the government has shown complacency on the issue; it is now clear that the country's reserves will not last to the end of the century. Moreover, there is no comprehensive energy policy in the country, despite the fact that Malaysia seeks to be a developed country by 2020. While there was talk in the 1970s of adopting nuclear power, no unanimity has existed in the government, and the issue has only recently been revived. Alternative energy sources are being explored, but have not been given due attention. Additionally, there is the problem that the government has heavily subsidized electricity in the country, making energy very cheap and therefore easily wasted. While there is talk of an ASEAN gas grid for the region, the needs of countries are variable, and there is the question of reliability of supply. Therefore there is a need for a lot of rethinking and clarity.

During the discussion session, Singh additionally noted that converting to biofuels would be impractical for Malaysia as the price of palm oil is high, and motorists would be unlikely to cut down on their fuel use.

On Day 2 Kwa Chong Guan from CSCAP-Singapore presented a paper by Chong Youngho on the prospects of an integrated regional energy market. Noting that lessons could be learned from the EU's experience with an integrated energy market, it was argued that the formation of such a market may help to ensure a stable, reliable supply of energy, while lowering prices and increasing trade volume. In January of 2007, Singaporean Prime Minister Lee voiced support for an integrated regional market, a statement echoed by other East Asia Summit leaders. Establishing a common market for electricity and natural gas may be one step towards further regional cooperation; as would a natural gas pipeline. Movements toward an integrated market in the region have included the Greater Mekong Sub-region economic cooperation and development, the ASEAN Power Grid and the Trans-ASEAN Gas Pipeline. However, obstacles in funding and speed of development still exist, and it is suggested that more feasibility studies and cooperative efforts among the states are needed. Participants agreed that there were challenges to moving forward in the establishment of an integrated market, but that these challenges are not insurmountable. However, the idea is more feasible in the context of Southeast Asia, where there are institutions for cooperation and greater political will, than in Northeast Asia. The Asian Financial Crisis in 1997 has highlighted how interconnected East Asia is, though more trust needs to be developed between states before the market can be effective

Future Plans

Discussion then turned to the agenda for the next meeting. Proposed to be held in mid-September in either New Delhi or Goa, it was tentatively decided that a one or two day academic seminar would be followed by the second meeting of the Study Group. The latter would focus on three issues: energy security, stability and sustainability. The opening session would address security issues, including the physical security of facilities and the sea lanes. The afternoon of the first day would be dedicated to the issue of stability, examining prices, markets, storage, stockpiling, joint ventures, pipelines, LNG contracts, etc. The second day would begin by addressing sustainability issues including the environment, climate change, unconventional oil, alternative energy, nuclear energy, research and development, etc., before being followed by a wrap-up session.
