CSCAP Study Group on Asia Pacific Cooperation for Energy Security
Beijing, March 24-26, 2008

Co-Chairs' Report

The third meeting of the CSCAP Study Group on Asia Pacific Cooperation for Energy Security was held from 24-26 March 2008 at the News Plaza Hotel, Beijing. Co-chaired by CSCAP-Singapore and CSCAP-India, the meeting gathered twenty-eight participants and observers from thirteen of the member committees.

Summary of Discussion

The co-chair of the study group, Mr Kwa Chong Guan from CSCAP Singapore opened the meeting by thanking CSCAP Beijing for agreeing to host the meeting, which was echoed by his CSCAP India co-chair, Mr Virendra Gupta. Mr. Kwa noted that the study group would continue to use the three planks of energy security that were introduced at its second meeting, namely, security, stability and sustainability. Security is mainly concerned with the supply of energy (obtaining necessary energy supplies) as well as the security of energy distribution networks. Stability primarily refers to the stability in the supply and demand of energy in a situation of growing energy demand. Sustainability primarily involves exploring non-traditional sources of energy (non-oil and non-gas) such as nuclear power, biofuels to meet energy needs. He observed that while Australia (in coal) and Canada (in shale oil) had emerged as new energy super power, Indonesia was transiting from being an exporter to an importer. As Asia-Pacific countries were pursuing their individual ways of ensuring supply security, which had assumed critical proportions, cooperation among these countries had become increasingly important. While the study group in its second meeting at Goa looked into issues such as the development of alternative fuels, energy markets, and common sharing of infrastructure, the Beijing meeting looked into the issues relating to interdependency and cooperative security measures.

It was also noted that a fourth and final meeting of the study group would be held in early July 2008 and that CSCAP Brunei had agreed to host the meeting. The two main objectives of the study group would be to produce a monograph volume comprising a series of short papers (an outline of which was circulated) as well as a memorandum outlining the broad thrust of the group's objectives (a draft of which was circulated).

Supplementing the above remarks, Co-Chair, Mr. Virendra Gupta from India emphasized that to seek energy independence would not only be elusive but could also lead to heightened tensions because of growing energy consumption levels in several Asian countries and sharply escalating oil and gas prices. He mentioned the imperative would be to forge cooperation through R&D collaboration, technology sharing, market reforms and infrastructure development for better connectivity in the spirit of interdependence. He pointed out that the developing countries are facing the massive challenges of continuing poverty and lack of access of commercial energy to large segments of their population, which could only be redressed by sustained high level of economic growth

requiring increased use of energy resources. However, what was important to note was that per capita energy consumption in developing countries is still way behind that in the developed countries.

He pointed out that there was a broad consensus globally that there would be enough oil even though it has to be accessed in considerably more difficult and challenging conditions. But that task was by no means insurmountable in the light of technological innovations. Referring to the need to develop a cooperative framework within Asia-Pacific, both at the regional and sub-regional levels, Mr. Gupta underscored the need to continue the Consumer-Producer dialogue which was initiated by India a few years ago. A cooperative framework, he added, would also be necessary for putting together massive investments for new exploration projects and improved pipeline connectivity. In fact, one of the reasons for present shortfalls in supplies was that adequate investments were not being made in the upstream section due to a variety of factors, including uncertainties relating to price stability. He also drew attention to the renewables sector and noted that the key issues were that of technology and funding support for developing countries to enable them to adapt to new climate friendly technologies both in the hydrocarbons and renewable sectors.

Following the introductory remarks by the co-chairs, Dr Feng Fei of the Development Research Center of the State Council, China, gave the keynote address on China's Energy Policy. While outlining the high rate of growth in energy demand in the recent years, he pointed out that the rising energy consumption was largely on account of sustained higher economic growth and a 'rising industrial market economy' due to the growth of heavy industries. China's energy policy was thus focused on the key areas: energy conservation; guaranteeing energy security; improvement of energy mix; environmental friendliness, technological innovation, and international cooperation.

The potential for energy conservation in China was huge particularly in comparison to Western countries. The goal was to reduce China's energy intensity by 20% by 2010 (as compared to 2005) and specific targets were set at the provincial and municipal level**s** in the areas of industry, buildings and transportation. Although China will be largely energy-independent even up to 2030, it will be increasingly dependant on oil and gas imports. Energy Security was therefore sought through greater international cooperation, establishing strategic reserves and geographic diversification of sources of oil and gas. China also intends to improve its energy mix by increasing the share of renewable energy (from 7.5% at present to 16% by 2020) and by introducing 3rd generation nuclear power technology. The environment is also a key concern as evidenced by the State Environment Protection Agency (SEPA) being made a ministry and the adoption of a National Action Plan for Climate Change. Technological innovation in such areas as developing clean coal technology and advance nuclear technology is also vital to China's future energy strategy. He also pointed out that the regulation of oil prices in China would be a long termed target to address the adverse impact of rising oil prices.

Session Two of the meeting focused on the prospects for a common energy market. Dr Mohanty from CSCAP India began his presentation by giving an overview of the global energy security situation before examining the prospects for a common energy market in

Asia. He pointed out that energy in today's world was at a crossroads with high economic growth pushing energy demand upwards, while other factors such as the environmental damage caused by fossil fuels pulling it in the opposite direction. He emphasized that energy security was essentially oil security as fossil fuels continue to be the main source of energy in the foreseeable future, but oil and gas reserves will be increasingly concentrated in fewer countries as time progresses. As a result, supply and demand tensions over oil will be exacerbated, with consumers facing high oil prices, lack of substitutes for oil, and high costs of alternative fuels, and producers facing declining reserves and higher revenue thresholds to maintain the growth of their economies. He outlined the specific factors that ailed the Asian oil and gas markets such as its fragmented nature, differential pricing, lack of information sharing and transparency, trade barriers and so on, while noting that the region confronted various structural and policy roadblocks to developing globally competitive markets for oil and gas. In concluding his presentation, he observed that there was a need for both industry and market reforms, mutually reinforcing investment and greater regional cooperation in such areas as building transnational pipelines, greater information sharing and risk management within the Asian oil and gas sector.

Dr Chang Youngho from CSCAP Singapore examined a possible agenda for an Asian regional energy market by referring to the central themes and guiding principles of the EU's efforts to establish a common energy market. He analysed the guiding principles behind EU energy policy, and the strategy of adopting mechanisms such as the Green Paper on the security of EU energy supply (adopted in November 2000). Dr Chang observed that the old energy paradigm where the traditional solutions to problems was through privatization, liberalization, and competition, was being replaced with an emerging energy paradigm due to the new concerns such as climate change and the security of supply which the old paradigm could not resolve. He also touched upon the efforts of EU to modernize the European energy market based on imperatives such as establishing a common market, ensuring secure supply, reducing greenhouse gases and developing technology. He concluded that the goal for Europe was the consolidation of a common energy policy that would result in a sustainable, secure and competitive low-energy economy, and that Europe was relying on renewable energy and new energy technology to achieve the degree of self-sufficiency necessary to achieve such a scenario.

Dr Asclepias Rachmi from CSCAP Indonesia gave an overview of the hydrocarbon situation (oil, natural gas and coal) in Asia. She concluded that Asian countries had limited hydrocarbon reserves which were far from sufficient to meet their current and future needs. As such, there was a need to find other sources of energy than fossil fuels to sustain development. Dr Rachmi then looked at the specific example of Indonesia, noting that it faced declining production of oil, natural gas reserves that were increasingly costly in terms of extraction or located in disputed areas, and severe pressures from export markets for gas (a resource in which Indonesia has been Asia's leading exporter). She also noted that Indonesia was prone to energy crisis, due in part to its high dependency on fossil fuels, mounting budgetary costs of government subsidies on domestic energy consumption, and the problem of a transport bottleneck from fossil energy sources to high-need areas such as Java. She suggested that potential areas for cooperation in energy

would include managing fossil fuel dependency, shifting towards non-conventional forms of energy and building capabilities and experience sharing.

Dr Chang Chung Young made a presentation on the elements of energy security, particularly in the aspects of safe delivery and energy storage. He examined the major energy risks affecting the world, specifically the threat of terrorist attacks on infrastructure such as oil and gas pipelines and possibly on an LNG tanker or facilities. He analysed the current state of regional cooperation in Southeast Asia over energy infrastructure, specifically the ASEAN power grid (APG) and the Trans-ASEAN Pipeline Project (TAPP). He provided detailed maps of the proposed power grid, noting that there would be 14 interconnection points involving 11 cross-border infrastructure projects. Dr Chang then looked at the proposed TAPP, and how it fitted into various proposals for natural gas pipelines routes such as the 'energy silk route' and others. He noted that the Straits of Malacca remained a major chokepoint for transport of oil and gas resources into Northeast Asia. He then outlined the key mechanisms for Asian energy infrastructural and security cooperation while noting that there remained barriers to cooperation; namely bilateral political conflicts, high capital investment requirements, social concerns towards energy (e.g. over the environment), competition for capital investment and intra-country power struggles. After briefly outlining the St Petersburg global action plan on energy security, he highlighted the key elements of a possible roadmap for regional energy cooperation in Asia. Such elements would include promoting joint projects and cooperative relations ensuring safe passage of ships through the Straits of Malacca and SLOCs, confidence building through information exchanges and shared best practices, strengthening institutionalized regional arrangements for multilateral energy cooperation promoting investment, market reforms and effective regulatory framework, and a political commitment to a common vision and strategic plan.

The session ended with the discussion initiated by Dr Michal Meidan of CSCAP-EU, who spoke on the specific challenges and policy options for cooperation in infrastructure security. Energy infrastructure included oil infrastructure, gas facilities and pipelines, electricity grids and also nuclear power plants across the entire supply chain. Threats to energy infrastructure included the historical threat of piracy, terrorism and political sabotage, natural disasters, as well as mismanagement and other human factors. In particular, she highlighted some key oil choke points, notably the Straits of Malacca and the Straits of Hormuz and dwelt on the threats to gas and electricity infrastructure partly due to increasingly concentrated networks, In this regard, she drew upon the evolving EU approach to infrastructure, including specific issues addressed in a 2005 green paper such as oil storage and emergency stockpiling, building spare capacity, creating a critical infrastructure warning network and developing shared security standards. Diversifying energy sources, introducing renewable energy, increasing end-use efficiency and decentralizing infrastructure were also elements of the EU approach. After examining some of the shortcomings of the EU approach, she analysed its relevance to Asia. She noted that compared to Asia, the European region has much more interconnected energy infrastructure and the EU is much more integrated in terms of being a supranational coordinating body. However, cooperative measures between the two regions such as common stockpiling and information sharing (possibly under the aegis of the IAEA) and development of safety standards would be helpful to everyone.

Session 4 of the meeting focused on the prospects for common stockpiling in Asia. Professor Lee Jae-Sung began the discussion by examining the role of oil stockpiling as a public good benefiting all the participants by acting as a balancer and absorbing supply shocks in the case of a crisis. There are two main approaches to stockpiling – that of a security perspective involving sensitivity of an individual country to external supply stocks and confidence in others ability, or that of a business perspective looking at creating a common market, economies of scale and cost effectiveness. Within Northeast Asia itself, there was a growing demand for oil and increasing import dependency. With current high oil prices there are incentives for indirect stockpiling and common stockpiling (possibly at a regional level). He then examined the recent trends in terms of energy stockpiling in Korea, Japan and China before proceeding to examine the benefits of regional oil stockpiling. Regional stockpiling could provide the basis for cooperation in the region, particularly in terms of common crisis prevention. Even though its actual impact on the regional oil market stability may not be substantial, it represents an important symbolic signal to the global players. An important benefit of regional stockpiling would mean a reduction in the current 'Asian premium' which was caused by low levels of commercial oil stock in the region. Other possible benefits that could accrue include the creation of an oil logistics hub and preferential buy-back power in the case of emergencies. However, while the majority of Northeast Asian countries realized the need for closer energy cooperation to deal with their energy security concerns, there were numerous difficulties on the way to establishing common stockpiling in the region. Specifically, there remained low levels of cooperation in the region, with Korea, Japan and China in particular often viewing each other as competitors. There was a lack of political trust, partly due to political, social and historical differences. Regional infrastructure and an overall institutional framework for development and regulation of the markets were also lacking. In conclusion, he recommended an incremental approach to energy cooperation focusing on the soft agenda items (such as information sharing, R&D and common stockpiling) before moving on to the hard agenda items such as joint development of pipeline and other infrastructure projects.

Dr Yuji Morita looked at the possibility of common stockpiling in the region from the Japanese perspective. He noted that Japan was a country with limited energy resources and high consumption levels. Japan was thus very vulnerable to oil supply interruptions particularly due to its over-dependence on Middle East oil. Enhancing oil supply security was thus vital, and this could be pursued by diversifying Japan's energy mix, as well as sources of energy (besides the Middle East), energy conservation and emergency preparedness, of which oil stockpiling is one facet. He gave an overview of Japan's petroleum stockpiling noting that there were stockpiles sufficient for 182 days of consumption (as of end-2007). He outlined the measures that would be undertaken by Japan in the event of an emergency, starting with a basic policy of information dissemination and cooperation through the IEA, following which a draw down of reserves if that proved necessary and only then moving towards securing supply, fuel switching and demand restraint. Draw downs would be done in accordance with the IEA's Co-ordinated Emergency Response Measures (CERM).

In the Q&A session that followed, one of the key points that was raised was the possibility of a common Asian oil stockpile, especially if the key goal of any individual country having a stockpile was to address its energy security concerns. In the event of a crisis, there would be issues regarding the rate of a draw down and the destination of the reserves. Some doubt was also voiced with regards to the overall efficiency of stockpiling in terms of benefits versus costs, especially when costs of storage and of raw material are substantially high.

Session 5 involved discussion of alternatives options and R&D cooperation. Mr Tan Eng Kwang of CSCAP Brunei proceeded to give the first presentation on this topic. He broadly outlined Brunei's energy situation and strategy, noting that Brunei's economy was heavily dependent on the energy sector. Research and development in the energy sector was thus a vital element in Brunei's future energy strategy, along with diversifying the economy.

Dr Yuji Morita of CSCAP Japan outlined the broad trends in energy technology and R&D budgets in various countries, as well as Japan's petroleum import rates. Within Japan itself, the chemical, steel and cement industries were three largest sectors in terms of energy consumption. He highlighted the production trends of steel and cement, as well as the energy intensity of the two industries. He also outlined the NSP kiln production process, and also examined the Coke Dry Quenching (CDQ) and the Top pressure Recovery Turbine (TRT) methods respectively, which were both widely used in Japan. One important initiative that Japan was involved in was the Asia Pacific Partnership (APP) on clean development and energy. The seven APP member countries possessed half of the world's population and energy use. One key area in which Japan provided assistance was that of capacity building through dispatching Japanese experts to other countries and taking in trainees to learn about Japan's energy saving technology. Morita concluded by outlining some of the international projects to promote efficient energy use that Japan was involved in.

Dr Zhang Lijun from CSCAP China began by outlining the major challenges in energy security that China was facing, including that of energy efficiency as well as China's new energy security strategy. This new strategy encompassed five main areas: promoting international energy cooperation; diversifying oil imports; overseas investment in energy; securing transport routes and finally energy conservation. With regards to the last category, the goal was to make full use of existing energy resources, increasing use of sustainable energy, optimizing the transmission of energy (to reduce energy loss), and economizing on energy use. The Chinese government has also increased investment in new energy technology research and development.

Dr Choi Jor Shan then concluded by giving a presentation on the possible role of nuclear energy. He started by looking at the current status of nuclear power, noting that Asia represented the key geographical area of expansion, and some of the trends affecting nuclear energy. He then outlined the key issues for nuclear energy development which are economics, safety, security and proliferation, spent fuel and waste management of nuclear fuel. With regards to economics, nuclear energy is expensive to build, requiring a high capital cost outlay, but cheap to run. In order to be competitive, its capital cost has to

be reduced, or the cost of other forms of power generation (e.g. natural gas) has to increase. Regarding safety, he noted that nuclear power had an excellent safety record, but there were existing fears that a catastrophic accident similar to Chernobyl could happen again. Security of nuclear installations and proliferation of fissile material were also concerns for anyone operating nuclear power technology. Dr Choi then put forward a 'new nuclear regime' in order to address some of these concerns. A key element of this was to form a global network of nuclear fuel cell capabilities in order to reduce the burden of nuclear waste and the risk of proliferation. This network need not be based within a single country, and could provide 'cradle-to-grave' fuel cycle services for countries thinking of using nuclear energy for electricity generation. A fuel take back regime could be put in place to deal with nuclear wastes such as spent fuel and excess weapons material and the security concerns that they generate. Dr Choi concluded by looking at some of the challenges facing the development of a new nuclear regime including security risks to installations, avoiding the spread of enrichment, and developing a fuel take back regime.

In conclusion, the co-chairs agreed to publish a monograph comprising of selected papers from the various CSCAP members. The monograph will be structured on topical themes discussed during the meetings. In addition, a memorandum that outlined the thrust of the discussions of this Study Group will be produced. CSCAP Brunei had kindly agreed to host the next and final round of this Study Group meeting, tentatively scheduled for early July 2008.

Third Meeting of the CSCAP Study Group on
Asia Pacific Cooperation for Energy Security
News Plaza Hotel, Beijing
March 24-27, 2008

March 24, 2008

Participants arrive and check-in

18:00 Welcoming Reception and Dinner
(Chinese Restaurant, Room 312 ,3rd Floor, Beijing News Plaza Hotel)

March 25, 2008

09:00 Session 1: Welcome remarks by Co-Chairs and Keynote address
Kwa Chong Guan (Singapore)
Virendra Gupta (India)
Feng Fei (China) for keynote

10:30 Tea Break

10:45 Session 2: Prospects for a Common Energy Market
B Mohanty (India)
Chang Youngho (Singapore)
Asclepias Rachmi (Indonesia)
Gao Shixian(China)

12:00 Buffet Lunch (1st Floor.)

13:30 Session 3: Cooperation in Infrastructure Security
Zhao Hongtu(China)
Chung-young Chang (other participant)
Michal Meidan (EU)

15:00 Tea Break

15:45 Session 4: Prospects for a Common Stockpiling
Jae-Sung Lee (Korea)
Yuji Morita (Japan)

17:00 Session adjourns

18:00 Dinner hosted by Prof. Zhou Xingbao Venue: Wahaha Restaurant）

March 26, 2008

09:00 Session 5: Options Alternatives and R&D Cooperation
Tan Eng Kwang (Brunei)
Yuji Morita (Japan)
Zhang Lijun (China）

10:15 Tea Break

10:30 Session 6: Wrap up and Future Plans

11:30 Meeting Adjourns

11:45 Buffet Lunch (1st Floor)

13:30-18:00 Sightseeing Tour (The Imperial College & Lama Temple (Yonghegong))

18:30 Informal Dinner (1st Floor, Beijing News Plaza Hotel)