CSCAP STUDY GROUP ON
ASIA-PACIFIC COOPERATION FOR ENERGY SECURITY

Goa (India), 14-15 September 2007

Kwa Chang Guan, CSCAP-Singapore Co-chair opened the Session. He touched upon the progress made by the Study Group in its first meeting in Singapore in arriving at the broad approach of the Study. While national and global energy security concerns are traditionally predicated upon government approach to "Cooperate and coordinate" or to "control and confine", the study group needs to formulate a collaborative approach of national governments to address the global energy security concerns which have assumed critical proportions. Accordingly, as agreed to by the members in the first meeting, the three planks of the study would be: security, stability and sustainability of energy markets and economies. As perceptions about energy security vary among countries and regions depending on whether the country is a producer-exporter, or a consumer-importer of oil, the study group could also attempt to frame a scientific definition of energy security which can reflect these concerns. The study group could also analyse the accumulating risks surrounding the energy markets in the region particularly the investment risks involved with exploiting new and unconventional sources of energy.

Talmiz Ahmed of CSCAP-India Co-Chair informed the study group that as he has assumed charge of India's Ambassador to UAE, his successor at Indian Council of World Affairs would take over the charge of India Co-Chair of the study group. He also conveyed the regret of the CSCAP-India for having cancelled the one-day international Seminar on energy security preceding the two-day meeting of the Study Group. The seminar had to be cancelled due to inability of majority of foreign speakers to come to Goa for the seminar. However, the Indian speakers, who were originally scheduled to deliver their address in the seminar, have been invited to make presentations to the study group and share their views with the study group members.

Summary of Discussions

DAY ONE: 14 SEPTEMBER 2007

Session 1 began with a presentation by Basudev Mohanty of CSCAP India on global energy outlook and energy security concerns. While human concerns for energy security are as old as the human civilization itself, energy security today is associated with new and accumulating risks, which are far ominous than before. A sample of definitions of energy security formulated by countries and multilateral organizations reflect a differential approach to energy security.

Global demand for energy will grow at a faster rate in the next two decades primarily on account faster growth of the per capital energy consumption in the Non-OECD developing countries; since 2000, they have been responsible for 85% of the increase in world energy demand. Over 80% of the world population in 2030 will reside in the developing countries in the Asia and Africa.

The average income of 5.5 billion people living in these regions is growing at nearly 5% per annum. As projected by International Energy Agency (IEA), Paris, even if governments execute policies aimed at enhancing energy efficiency and mitigating adverse effects of climate change, oil and gas will continue to account for around 55% of world primary energy demand by 2030. Therefore, energy security is essentially oil security. There are visible signs of both demand destinations and supply sources of oil shifting towards Asian region; yet, market for oil and gas in Asia is least developed. While demand for oil is rising, the dwindling oil reserves in many countries is pitching a large number of oil importing countries against a handful of oil exporting countries. By 2030, 50% of the top 20 oil producing countries, accounting for 95% of total proven world oil reserves, will run out of oil. By 2050, almost all oil reserves will be concentrated in a very few countries in the Middle East and Latin America. Natural Gas is more concentrated than oil. The volume of trade in both oil and gas is projected to increase by 60% by 2030, so also the geographical distance from supply sources to consumption centers. Gas trade is projected to rise much faster than oil, but lack of pipeline transportation infrastructure will result in rapidly increasing LNG trade. These factors will choke the maritime transit points, which are already congested and, thereby raise security and environmental concerns around these regions. Technology and investment hold the key to faster development and commercialization of environment-friendly conventional and non-conventional sources of energy. According to IEA (WEO, 2006), over 50% of the projected investment of USD 20 trillion will be required just to maintain the current level of supply (much of the existing capacity of oil, gas and electricity will have to be replaced by 2030). Developing countries will account for 50% of the projected global investment. But policy uncertainties in many countries for promotion of technology and investment and lack of a cohesive global approach to energy security exacerbating the risk perceptions of investors, pose serious roadblocks. Moreover, climate changes call for radical transformation in individual countries' approach to energy security. A sustainable energy world can be created only through a global framework for developing and harnessing technology, mobilizing investment and establishing sound policy to address risks and threats through collective measures by the countries concerned.

Yang Yi of CSCAP-China made a presentation on strengthening cooperation to ensure energy security. In 2002, the APEC region accounted for 56% of world economic output and 58% of world total primary energy consumption. The strong economic growth of the region in the future is predicated upon the rising consumption of fossil fuels, which will increase the region's dependence on oil imports, particularly from the Middle East. Therefore, the energy security policies that the countries in this region adopt will powerfully shape the economic and geo-political conditions of the region. A true energy security of the APEC region must, therefore, rest on a new energy paradigm in which regional energy cooperation between energy suppliers and consumers across the Asia-Pacific region could flourish.

China was self sufficient in oil until 1993. In recent years, China's oil imports have crossed 100 million tones per annum. However, China will continue to adhere to the policy of meeting domestic energy needs through augmenting domestic supply and energy efficiency measures. While China's per capita

consumption of energy is only 66% of the world average and 13.4% of that of the USA, China has a short term goal of reducing the energy consumption per unit of GDP by 20% by 2020. Major Chinese oil companies started their international operations in the 1990s and have made impressive progress. The international dimensions of China's energy policy are peaceful energy development and international energy cooperation to ensure regional and global energy market stability.

Energy Security cannot be seen as a race between countries to "lock up and monopolise" available energy supplies. It has to be a joint effort of countries concerned to meet the requirements of technology and investment for developing resources, managing strategic reserves and strengthening security of oil transition channels to ensure market stability and, above all, guide energy consumption in an environment friendly manner. Thus, it is necessary to establish a new concept of energy security based on factors such as (i) strengthening dialogue and policy coordination among energy consuming countries as well as between energy consuming and producing countries, (ii) promoting energy conservation and efficiency; (iii) establishing a secure, reliable and economic regional energy supply system and (iv) ensuring energy shipping security, through bilateral and multilateral cooperation. The APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development in Sydney in September 2007 is a step in this direction.

Shebonti R. Dadwal of CSCAP-India spoke on the strategic and geopolitical aspects of energy security. Acute concern against high oil prices and rapid climate changes in recent times have drawn almost every regional and multinational forum towards the critical nature of energy security in today's world. The energy world today is beset with growing supply uncertainties, increasing terrorist incidents/ threats on oil facilities and internal political problems in oil producing countries. This has led oil-importing countries to scramble for energy resources in other countries. The oil producing countries on their part are inclined to use domestic energy resources as a strategic tool to secure larger security and foreign policy goals. Also, countries tend to perceive energy security from their national perspective, which might conflict with the global nature of the energy/oil market. The fallouts of the changing energy map have the potential to exacerbate tensions and trigger off conflicts.

The emerging problems relating to energy resource scarcity, mobilization of investment, development and application of technology, market stabilization measures, data transparency etc. are, therefore, needed to be addressed through a cooperative approach and a common strategy by all countries concerned.

In Session 2 of the day, T. Srinivas made a presentation on developing Asian oil market. As the consumption-production gap in oil in Asia-Pacific region widens significantly in the coming years, the region will account for a larger share of world oil import growth so much so that by 2025, China's oil Imports alone will equal that of the US and Europe put together. From oil producing countries' perspective, the East, largely dominated by Asian countries will provide a growing oil market away from the traditional markets in the West. Yet, Asian oil market is

beset with a number of structural problems such as controlled oil economies of principal producing countries in the Middle East, dominated by national oil companies, lack of transparency in data and in price discovery, and trade barriers feeding market instabilities. Besides, the existing marker crude oils have developed certain limitations rendering them individually ineffective to reflect the fundamental conditions of producing and consuming segments of the oil market. To tide over this problem, a unified global crude market needs to be developed. In addition to these factors, the Asian oil market currently suffers from serious infirmities such as differential pricing of crude oil by some major oil exporting countries, which is weighed against the Asian oil importing countries, absence of a centralized oil trading hub in Asia and lack of strategic product reserves in manor oil importing countries in the developing Asian region. An approach to develop an efficient Asian Oil market may, therefore, include enhanced cooperation among the countries to set up an institutional mechanism for dissemination of information, active participation of a large number of producers and consumers in the market and formulation of a regional policy on mandatory strategic petroleum reserves similar to the one managed by IEA member countries.

Dilip Kale of CSCAP-India made a presentation on Untapped Resource Potential in the region. These untapped resources could only augment and not replace the conventional fossil fuels. Although, there are plenty of unconventional hydrocarbon resources available, the issues of accessibility and producibility are the main obstacles in commercialization of these resources. Based on resource potential, technological complexity and exploitability, tight gas, Heavy Oil, CBM and Deep gas fall in the short term (0-3 years) category, Oil Shales, UCG and Oil Sands in the medium term (3-5 years) category. There is tremendous potential in the unconventional resources and there is a need for cooperation in the field of technology to tap these resources for commercial production, which will augment energy security. Finally, the ultimate answer to sustainable energy security lies in life style changes to restrain inefficient and avoidable energy consumption.

Rohit Bhardwaj of CSCAP-India made the last presentation of the day on Climate Change & Potential Carbon Caps, outlining the natural as well as man-made causes of climate change and its adverse effects on human life among the initiatives taken by major countries at global level. The Asia Pacific partnership on Clean Development and Climate, a non-treaty agreement among Australia, India, Japan, China, South Korea and USA launched on 12th January 2006, does not impose mandatory targets for GHG reduction. The member countries can set their own goals. The partnership will focus on expanding investment and trade in cleaner energy technologies, goods and services in key market sectors. In June 2007, at Germany, G-8 leaders agreed to seek substantial cuts in GHG emissions and to reduce it to half by 2050. In September 2007, 21 APEC leaders signed the Sydney Declaration on climate change and set a goal of at least 25% improvement in energy efficiency over 2005 levels by 2030, pledged to increase the total forest area by at least 20 million hectares by 2030.

DAY Two: 15 September 2007

Youngho Chang questioned whether an integrated regional energy market could serve as a way to ensure energy security in the region. In tackling such a question, he dealt with the question by defining energy security as "An adequate and reliable supply of energy at a reasonable price" and identifying three factors of energy supply, namely, availability of resource, applicability of technology and acceptability by society. He continued to argue if "being energy self-sufficient" is good or necessary and "high energy dependence" is a real serious policy problem so that "decreasing energy dependence" should be a top priority in energy policy. He sustained this argument goes against that free trade helps the world economy prosper, and improves the standard of living for those who participate in the free trade. As a measure for evaluating the status of energy security, he presented and estimated an oil imbalance – total production of oil less total consumption of oil – in the world. The magnitude of the oil imbalance is negative but small and from which he inferred that the demand for oil is only slightly larger than the supply of oil. Noticing the meager negative oil imbalance, he argued that blocking of flows of energy rather than the amount of available energy is the main obstacle to ensuring energy security and insisted that the region could take lessons from the EU in which an agreement on securing coal and steel supply in the EU region has evolved into a full-fledged economic, political and legislative body. As a way forward to mitigating and/or fixing this problem, he suggested launching an integrated regional energy market in which energy flows freely from where it is produced to where it is needed and the imbalance is resolved gradually over time. He concluded his presentation by remarking that what the possible structures of the market would be remains to be seen.

V.K. Malhotra of CSCAP India made a presentation on the state of R&D on Biofuels and Hydrogen and its application as automotive fuel. R&D studies in India and abroad have established that upto 10% ethanol blending with gasoline does not require any costly modification in the vehicular engines and emission norms. Ethanol production from sugarcane is at present cheapest and Brazil has pioneered ethanol blending since 1980s. However, ethanol blending with diesel is being experimented in a number of countries including Sweden, Thailand, Brazil and India to find out a cost-effective way of blending ethanol with diesel. Unlike ethanol, which directly impact food security of a country, biodiesel offer a sustainable source of alternative fuel. Leading automobile manufacturers, fuel marketers and end-users in the world are working on the various options of producing and commercializing biodiesel. The yield of biodiesel from algae is many times higher than that from other commercial crops and holds great promise in the future. Compared to the first generation biofuels the second generation biofuels hold greater promise in terms of higher yield and higher emission reduction potential; yet, cost effective technology development for second-generation biofuels currently is a constraint.

Hydrogen provides the ultimate unlimited source of energy, which is not only most efficient, but also cleanest of the existing fuels. While the current technology enables Hydrogen production based on fossil fuels and is not commercially viable because of high production and storage costs, the future

technology based on hydrogen production from renewable, non-fossil fuels, and transmission through pipelines may provide a sustainable way of harnessing hydrogen for energy needs. India has taken initiatives for international cooperation in the field of hydrogen. More concerted efforts at global level will be desirable.

Virendra Gupta of CSCAP India spoke on the need for renewed focus on Non-conventional Energy Sources. Commercial viability of non-conventional energy sources is relative term. Sources, which are not viable today, may become viable tomorrow depending upon the prices of conventional energy sources.

Ligia Noronha of CSCAP India outlined in her presentation, the key issues deliberated upon by the study group members during the day and the feasibility of non-fossil fuel option for Asia-Pacific energy balance. Renewables have drawn worldwide attention and large commercial and investment banks are taking notice of renewables and mainstreaming investments. Asia is projected to register maximum growth of renewable fuels in the next decade, with countries formulating appropriate policies and targets for harnessing renewables in their energy mix. Cooperation at regional and global level is necessary to enhance energy security because the current energy trend is not sustainable and faster development and application of technology and mobilization of massive investment is key to put the energy world on a sustainable path, which can be achieved through collaborative efforts of countries concerned.

FUTURE PLANS

CSCAP China informed the members that the next meeting of the Study Group will be organized by them at Beijing in March 2008. Two documents are required to be drafted for consideration in the next meetings: a five page summary report outlining the policy recommendations of the Study Group on the subject, which can be forwarded to the steering group. The papers written by / presentations made by the members in the Study Group meetings can be edited to prepare various chapters of a book on the study. ICWA of CSCAP India proposed to take up the responsibility of printing the book.