Opinion

Asian Economic Integration and Energy Cooperation

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Introduction

This essay will discuss the relationship between Asian economic integration and the energy challenge in Asia, and present policy options for energy cooperation in the years ahead.

With oil prices reaching historically high levels, experts point out the need to look at Asian economies, notably rapidly growing China, as the cause of the tight energy market as well as the effect such tight supplies will have. Energy issues should not be viewed as a special sectoral issue which only technical energy experts analyze but should be viewed in the broader economic context. Especially at the beginning of the 21st century, with the economies of Asia, in particular East Asia, more and more integrated than ever, we should consider energy issues in the broader context of economic integration, rather than as a single-country issue.

Economic Development and Energy

Energy is an indispensable input for economic activity. Economic growth will be hindered if a stable supply of energy is not secured, and this supply must come at a reasonable cost and in an environmentally sustainable manner. This is the biggest challenge to the Asian economies at present.

Looking at Japanese history, we can see that the country's economic growth has been inseparable from its access to energy. Lacking energy resources of its own, Japan would not have enjoyed rapid growth in the 1950s and 1960s without a stable supply of inexpensive energy from overseas. After the two oil shocks of the 1970s, Japan's economic structure was transformed: the Japanese economy's energy dependence fell dramatically and a highly energy efficient economy was built. The energy intensity dropped by about 30% from1971 to 1990. At the same time, a sophisticated energy policy was formulated and implemented. This policy includes; a) establishing an oil stockpile program to prepare for short-term supply shortages, b) diversifying energy supplies away from oil to alternative energies such as natural gas and nuclear and c) implementing a world-class energy conservation policy. These strenuous efforts by both the government and the private sector made the transformation of the Japanese economy possible As a result, Japan's economy has not been harmed much by the current record-high energy prices.

Thus, we can say, Japan's economic development in the '50s and '60s was facilitated by a steady supply of cheap energy. And the two oil shocks, with their concomitant price hikes, in the '70s transformed Japan's economy into the highly energy-efficient one it is today.

Now let us look at the relationship between development of the Asian economies and energy. The economic development of East Asia has progressed according to the "Flying geese model" through trade and investment linkages between Asia's developed economy, in particular, Japan, and developing economies, namely, the NIEs, followed by ASEAN and China. Korea saw high economic performance from the 1960s thorough the 1980s, with a pattern similar to the Japanese economic model. Following the yen appreciation brought about by the Plaza accord in 1985, Japanese overseas

investment in the NIEs and ASEAN countries increased sharply, leading to the production networks now seen throughout East Asia. Korean investment in the ASEAN region has also taken off. China embarked on its "reform and opening policy" in 1978 and has attracted a huge inflow of foreign direct investment since the 1990s. It is also now recording economic growth comparable to Japan's high growth period of the 1950s and '60s; it has become "the world's factory."

As a result of trade- and investment-linked economic development in Asia, in particular in East Asia, intra regional trade now accounts for over 50% of the total, which is comparable to Europe in the '80s. This business-led, de-facto economic integration is being followed-up by government efforts aimed at fostering institutional economic integration through arrangements such as free trade agreements (FTAs). These government efforts are also highlighted by sectoral cooperation mechanisms such as Chiang Mai Initiative in foreign exchange, especially after the financial crisis in 1997-1998.

A stable supply of cheap energy has been a key factor in the economic development of East Asia since the mid-'80s. In 1985, we saw a "reverse oil shock," a sharp drop in oil prices, and the subsequent development of the international oil market. The Asian economies, which enjoyed low energy prices from the mid-'80s onward, increased their growth rates - with the exception of Indonesia, which is oil producer.

It is expected that Asian economic integration will continue to deepen, both commercially and institutionally, leading to sustained economic growth. As was the case with Japan's economic growth, energy will be a key factor. Thus, energy issues should be viewed in this broader context of economic integration, rather than in isolation.

The Asian case can also be compared with the European experience. The process of European integration began with the formation of the ECSC (European Coal and Steel Community) in 1951, which was a mechanism designed to allow cooperation on strategic resources. This institution has evolved to encompass the single market and the common currency. The European experience offers many lessons. Of course, Europe differs considerably from Asia: European integration started with western European countries with similar cultures, economic development levels, and political regimes, while Asia includes countries with a wide range economic development levels, culture and religions, and political regimes. Despite these differences, however, Europe nevertheless shows that economic integration and energy cooperation can and should be pursued in a mutually supportive manner, that energy policy is central to market integration, and that energy security should be considered a collective security issue rather than something pursued by each country alone.

Energy Outlook in Asia

Let us now turn to the outlook for energy supply and demand in Asia, which can help us identify energy challenges in Asia. Energy forecasts are available from many experts and organizations. The consensus view is that overall energy demand in Asia will grow dramatically over the next 20-30 years, although projections depend greatly on economic growth and improvements in energy efficiency. The IEEJ (Institute of Energy Economics, Japan) is forecasting 90% increase in overall energy demand in Asia over the next 20 years. The main driver of this higher demand is China, which is expected to see rapid growth both economically and in terms of energy consumption.

When considering such forecasts, four points bear mentioning. First, the increase in aggregate demand volume will be huge. To meet this additional demand, there will have to be a large increase in energy supply, in other words, additional investment in energy development should be secured. This is a structural challenge that calls for cooperation among both energy-

producing and energy-consuming countries. The share of oil and particularly oil imported from the Middle East, in total energy consumption will increase. This will lead to a "traditional" energy security, namely securing physical supplies in response to short-term shortage risks. Third, energy efficiency as measured by the energy consumption per unit of GDP varies widely among Asian countries. Many countries other than Japan are considerably less energy efficient than the world average. For instance, China is only one-tenth as energy efficient as Japan. This is the challenge of energy efficiency, which has implications, both in terms of energy security (i.e., the potential for better conservation) and reduced environmental impact from lower energy consumption. Fourth, the environment impact of energy consumption will increase, especially that from fossil fuels such as coal. In Asia, coal will continue to be an important fuel, with a share of around 40% of the region's energy mix. The environmental impact of this consumption includes emissions of pollutants such as SOx and NOx, but also global warming caused by CO2 emissions. This environmental impact will be a serious challenge in Asia

What is "Energy Security" and How We Can Achieve It?

When identifying energy challenges, the notion of "Energy Security" should be redefined broadly in the contemporary context. The modern notion of energy security should be defined as securing stable energy supplies at a reasonable cost and in an environmentally friendly manner. It is thus more than just "ensuring the physical supply of oil," as envisaged after the two oil shocks of the 1970s and early '80s. Since the mid-1980s international oil markets have evolved and oil supplies have been mainly attained through price signals in the spot and futures markets: Prices moved up in tight markets and moved down in the glutted markets. However, this has led to greater price volatility and the economic disruptions such volatility can cause have also become a target of energy security policy. Also, there has been growing awareness and concern, globally, regionally and nationally, about the environmental impact of energy consumption. This includes pollution from SOx and NOx, and climate change caused by CO_2 emissions. This environmental aspect, often called sustainability, has also become an important objective of energy security policy, broadly defined A modern concept of energy security should be defined in these broader terms to include the physical, economic and environmental aspects of energy supply.

Many energy experts believe energy supplies can be maintained and enhanced by increasing the resiliency of the economy and the international market against changes in energy supply. Such changes can mean anything from changes in price, to changes in physical availability, to changes in quality of the commodity. "Resiliency" refers to the ability of a system to rebound, adapt, or adjust in response to pressures from the external world. It implies not only a degree of strength, but also the ability to evolve in response to changing conditions. However, energy security cannot be left to market mechanisms alone. The government has a role in designing the market and monitoring market players (e.g., through sound safety and environmental regulations). On the international scene, governments must demonstrate good political leadership by overcoming parochial nationalism, and laying the groundwork for an international market in which businesses can act on economic signals, so as to promote international cooperation.

Policy Recommendations

Asian countries, in particular ASEAN, China, Japan and Korea, should cooperate in the following ways to enhance energy security in Asia. Among the Asian countries, Japan and

Korea, the two advanced and energy-importing economies with sophisticated energy policy should lead the regional cooperation framework

Institutionalizing a Regional Energy Cooperation Framework

Asian countries should institutionalize an energy policy cooperation framework.
Such a framework should be modeled on the International Energy Agency (IEA), which was formed in 1974 by the industrialized West to counter the OPEC oil embargo. Asian countries, facing the current "creeping oil shock," should share a common goal of energy security similar to that of the IEA. The functions of the IEA are twofold: to establish "coordinated emergency response measures," mainly through oil stockpile programs, and to coordinate the energy policies of member countries mainly through peer review. A regional energy cooperation institution need not necessarily take a physical form, but it should be realized functionally in the form of policy cooperation. The "Energy Partnership" declared by the ASEAN+3 energy ministers in June 2004 is a good first step and should be nurtured. Within East Asia, the Northeast Asian economies such as Japan, Korea, China and Taiwan can work together to meet the challenge as energy consumers. Thus, Northeast Asia is the focal point and the most relevant sub-region in terms of energy security. Also, ASEAN+3 should be complemented by APEC and should embrace south Asian countries such as India, depending on the issue under consideration. This regional cooperation framework should be developed flexibly, with the participants varying according to the issues to be addressed.

Improving the Quality of Energy Data and Statistics

Asian countries should strengthen their efforts to improve the quality and timeliness of energy data and statistics, aiming at greater transparency in the energy market. In this respect, Asian countries should strengthen their commitment in the Joint Oil Data Initiative (JODI), which is being implemented under the auspices of the International Energy Forum (IEF) and carried out by the Asia Pacific Energy Research Center (APERC). Developed countries, such as Japan and Korea, should provide expertise to assist developing countries in capacity-building through proper channels such as ACE (the ASEAN Center for Energy).

Taking the "Top-Runner" Approach in Energy Efficiency and Conservation

Asian countries, with their growing energy consumption, should concentrate on actions aimed at improving energy efficiency and conservation. A bold "top-runner approach" should be vigorously pursued, where sectors such as heavy industries including steel, paper and pulp, cement; and products such as automobiles and home appliances should aim at the highest possible standards of energy efficiency. The approach could include both legally binding regulation, voluntary targets for businesses, and economic incentives, but implementation should be ensured and performance monitored through peer review, both domestically and internationally. Japan should provide a model and expertise to others in this effort.

Enhancing Dialogue Between Asian Oil Consumers and Producers

Oil-consuming countries in Asia should together enhance dialogue with oil-producing countries. Government dialogue should focus on issues of market bottlenecks such as investment and market fungibility. The roundtable meeting of Asian energy ministers held in January 2005 is a good example of such cooperation. In the dialogue, Asian countries, which are mostly oil

importers, should take a common position insofar as possible, based on consumers' interest vis-a-vis oil-producers. By taking a collective position, Asian countries will be able to effectively communicate with dominant producers such as the Middle-East and Russia.

Expanding Oil Stockpiles in Asia

Oil stockpiles in Asia should be expanded with a view to establishing effective emergency response measures. Government oil stockpiles and commercial inventories are a safety valve in the oil markets, which have seen high price volatility in recent years. Asian countries should, over the long term, aim at the IEA standard of 90 days of net imports for the stockpiles. Japan and Korea should transfer their experience and know-how in building such oil stockpiles. In addition, smaller countries should engage in a joint stockpiling effort.

Developing Asian Oil Markets

The market function in Asia is weaker compared to North America and Europe. Spot and futures markets for crude oil and petroleum products should be further developed. The market should be made more transparent and freer in terms of international flows. It should also be more responsive to supply and demand conditions. Refining capacity should be efficiently developed in Asian markets. Governments should work to remove impediments to trade and investment in the oil sector, through free trade agreements, economic partnership agreements, and harmonization of regulations and specifications in such commodities (e.g., NOx content) in oil products. Governments should also work to eliminate restrictions on the destination of energy products, which is seen in crude oil and LNG trade, in order to enhance cooperation in procurement for Asian refineries. The EU intervention, which has banned such restrictions, is a good model for Asian markets.

Developing Asian Natural Gas Markets

Utilization of natural gas should be encouraged as an alternative to oil in the energy mix. Infrastructure such as pipelines and LNG facilities should be built according to sound financing methods that allow cooperation between governments and the private sector. Development and dissemination of technology on natural gas utilization, such as combined heat and electricity generation, and gas-to-liquid conversion, should be further promoted. Spot and futures markets for natural gas (LNG) should be developed through introduction of more destination-free supply. Consumers of LNG should be encouraged to engage in more swaps and trades to better align seasonal and temporary fluctuations in demand.

Promoting Cleaner Use of Coal

Coal is a legitimate source of energy in Asia for both economic and security reasons. However, in view of its significant environmental impact, cleaner use of coal should be promoted. Greater international cooperation in technology development and deployment in Asian markets should be pursued.

Promoting Renewable Energy

Renewable energy resources solar, wind, hydro, geothermal, and biomass, should be utilized to a greater extent for the purpose of enhancing overall energy security. Governments should take steps to vigorously promote use of renewable energy with bold targets, bearing in mind the inherent potential of such resources and the social conditions of each country. Technology development should be also encouraged.

Promoting Transnational Energy Projects

Transnational cooperation in energy projects should be promoted. Such projects could include cross-border pipelines for oil or natural gas and joint development of oil and natural gas especially in disputed areas. Governments should work to provide sound conditions for the conduct of such projects on commercially viable terms. Governments should show strong political leadership by acting on principles of economic rationalism rather than emotional nationalism by promoting cross-border projects.

Conclusion

Asian energy issues should be viewed in the broader context of economic integration, rather than as a single-country issue or in isolation. By working together in our common interest to meet the energy challenge, Asia should foster greater energy cooperation and economic integration. In this regard, European integration provides us with a good lesson. The energy challenge, broadly redefined as energy security, should be resolved based on the market mechanisms, supported by proper government functions. An Asian energy cooperation framework should be developed, modeled on IEA-type policy coordination among energy consuming countries. This pragmatic approach to such an energy cooperation framework will allow the appropriate actors to participate, issue by issue, in East Asia. ▣

Energy Development in Northeast Asia: Cooperation is the Right Way

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Introduction

In the 21st century, with rapid and continued economic development in Northeast Asia, the region's demand for energy is growing fast. Russian's potential Energy supply and the demand of Northeast Asia countries jointly form the strong driver of Northeast Asia Energy development. Due to the different interest of various stakeholders in the region, the construction of Russia's Far East oil pipeline has passed a lot of twist and turns, from Angarsk-Daqing and Angarsk-Nakhodka to Taishet-Nakhodka.The result of the dispute on Russia's oil pipeline has taught us that the basic principle of Northeast Asia energy development and is strengthened dialogue and cooperation.

Energy Development is a strategic issue in Northeast Asia

In recent years, Northeast Asia's economy has been growing rapidly, leading to steady growth in energy demand. China, Japan and South Korea are 2nd, 3rd, and 7th oil consumers respectively in the world[1]. Japan, China and South Korea are major oil processors in the World, ranks 3rd, 4th, and 5th. The total processing capacity of these three countries is 15% of the world's total. The economic growth

1. Energy demand of Japan, China Mainland, and South Korea accounts for 98% of total energy demand of the North East Asia region.