Energy Security in Asia and Japanese Policy*

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Introduction

Many of the developing countries in Asia saw tremendous economic growth in the latter half of the 1980s. For these countries, maintaining a stable supply of energy has become the key to maintaining sustainable growth. *Per capita* energy consumption in these nations is one-sixth the OECD member average; however, their energy demand is expected to increase markedly over the medium and long term. Affected by the deepening of the Asian economic crisis of 1997-98, demand temporarily sagged, but thereafter resumed its upward trajectory. Imports of Middle Eastern oil have swelled, particularly in China and India, as demand outpaces domestic supply due to the sudden industrialization and motorization of these two countries. Natural gas imports are also expected to increase as environmental concerns push demand upwards.

Under these conditions, the terrorist attacks of 9/11 reminded all Asian countries that are heavily dependant on Middle East oil—including Japan—just how important energy security is.[1] Political instability in the Middle East could have a serious impact on the oil supply, sending crude oil prices soaring and delivering a serious blow to economies in Asia. Concerns about this situation culminated in a resolution at the Asia-Pacific Economic Council (APEC) summit meeting in Shanghai in November 2001 that called for member countries to cooperate in developing specific measures to insure energy security in the Asia-Pacific region.

Meanwhile, the end of the Cold War has resulted in further economic globalization and in the expansion and formation of both new and existing regional economic zones, particularly in Europe and the US, in the shape of the EU and NAFTA. Although the past still overshadows the present in Northeast Asia, political and economic ties between Japan, Korea, China, and Russia are moving in a positive direction, albeit rather slowly. There have been notable improvements recently in Japan-Korea relations, as shown by their joint hosting of the World Cup soccer tournament. Russia is using development of its plentiful Far Eastern resources to fuel economic development, and is looking to Japan, Korea, and China as obvious markets. Moreover, as a result of Prime Minister Koizumi's visit to South Korea in September 2002, new life is being breathed into talks between Japan and North Korea.

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These trends are raising new questions about the energy policy of Japan—Asia's largest energy importer. In essence, new energy security measures that include the greater Asian region are needed to replace those based on unilateral thinking. This paper considers specific measures and policy issues for Japan as they relate to the preservation of energy security in Asia in the twenty-first century.

Measures for stabilizing the supply and demand of oil in Asia

The three largest oil-consuming regions in the world are the US, the EU, and Asia. The US and the EU can expect to increase the oil supply from within their respective regions and from neighboring regions; hence, their dependency on the Middle East will not increase much. However, imports from the Middle East to Asia are expected to jump dramatically.[2] This is because the demand for oil in developing Asian countries will increase greatly, whereas regional production will not. China has been a net oil importer since 1993 and Malaysia may follow suit in the near future. This situation has caused these countries to aggressively pursue development of oil fields in Africa and the Middle East in order to secure their supply.

An increased dependency on Middle Eastern oil would put all Asian countries at grave economic risk in the event that the oil supply were interrupted. This requires that Japan step up its contribution of know-how to the improvement of oil reserve systems being pursued by developing Asian countries. Other issues that need to be examined are the construction of a joint reserve system and the sharing of oil reserves between Asian countries in times of emergency.

From the perspective of Middle Eastern oil producing countries, the Asian region is a promising market and a cornerstone in maintaining demand security—a concept that is viewed by oil-producing nations in much the same way as oil-importing countries view supply security. Thus, the Eighth International Energy Forum (IEF), held in Osaka in September 2002, was an event of some significance. Oil producers and consumers used this forum to further discussion of, and cooperation in, the creation of a stable international oil market. Relations between Asian oil-consuming countries and Middle Eastern oil-producing countries were improved markedly at this forum, as evidenced by its various achievements, such as an agreement that was reached for the establishment of a permanent IEF office in Riyadh, Saudi Arabia. Another issue for future consideration was the establishment of a forum to enable communication and discussion of economic cooperation between APEC member nations—such as Japan, Korea, China and various members of the Association of Southeast Asian Nations (ASEAN)—and the Gulf Cooperation Council of the Arab States (GCC).

China, Korea, the ASEAN nations, and other countries are putting more effort into the development of energy resources in and around their territorial waters. This

resource development activity has caused disputes over territorial rights to surface. Notably, Japan should consider joint resource development projects in the Senkaku Islands and the Takeshima area while at the same time steadfastly protecting its national interests in these localities.

Improved investment environment in the energy industry

A stable supply of energy is vital to continued economic development in Asia. In addition to securing crude oil, natural gas, coal, and other resources, vast funding for improved infrastructure is needed to bring electricity, gas, and petroleum products to the end user. However, most developing countries in Asia cannot provide this funding out of existing national finances and must rely heavily on foreign governments, international bodies, and other forms of public funding, as well as on both loans and direct investment from foreign private corporations.

Rules governing taxes, investment, and other systems need to be clarified to facilitate improvements to energy infrastructure using foreign capital, and guidelines for promoting the development and use of electricity and natural gas are being drawn up within the framework of APEC. Japan must also expand and strengthen investment, trade insurance and other public systems, and the use of official development assistance and similar funding to promote the participation of private enterprise in energy infrastructure improvement projects.

Further cooperation and coordination of energy policy between Japan, Korea, China, and ASEAN is needed to achieve economic growth, maintain a stable supply of energy, and preserve the environment in the Asian region. An Asian version of the International Energy Agency (IEA) should be borne in mind for a future.[3] This would of course be different from the original IEA—whose members are developed nations—in that it would have to proceed more slowly and be more flexible in order to accommodate the wide disparity in levels of economic development and the variety of economic systems found in Asia. The most effective approach would probably be to advance the collection and sharing of energy information, the transfer of energy and environmental conservation technology, and the development of human resources and financial cooperation that are already underway, and to then slowly expand these activities to include oil reserves and other issues.

A natural gas pipeline for Northeast Asia

The use of natural gas in the Asian region has risen substantially in recent years, driven by demand for diverse energy sources and environmental protection. However, whereas the percentage of natural gas as a primary energy source stands at 25% in the US and 23% in the EU, in Asia it is a mere 11%. Unlike the natural gas markets in the US and the EU, the natural gas market in Asia is largely restricted to liquefied natural gas (LNG). However, with the end of the Cold War paradigm, international relations in Northeast Asia have changed dramatically and a serious plan is in the works for a natural gas pipeline connecting Japan, China, and Korea with Sakhalin and eastern Siberia.

This project is being run by big oil companies like Exxon Mobil, Royal Dutch/Shell, and BP, with additional participation by businesses from Japan, Korea, China, and Russia. Since 9/11, the US and Russia have broadened their strategic relationship in the energy sphere, and this is expected to stimulate the development of natural gas resources in the Russian Far East. There are also problems with this project, however, as Japan's long-term economic malaise and deregulation of the electricity and gas markets have all taken their toll; in addition, insecurity about future demand for natural gas makes it difficult for electricity and gas suppliers to enter into any long-term commitments.

China has an agreement with the Russian government to proceed with natural gas development in eastern Siberia. The participation of Japan and Korea is also being sought in the hope that they will assist with finance and with securing demand. Since almost 70% of China's energy comes from coal, increased use of clean-burning natural gas must be the lynchpin in any solution to its environmental problems. Yet, negotiations between Russia and China are mired in disagreements over selection of a pipeline route, pricing, and various other issues. Russia views a natural gas export project with China alone as a significant financial risk, and is thus strongly urging Korea and Japan to become involved.

It is obvious that there are many as-yet-unresolved problems associated with the Northeast Asian pipeline project. However, a stable energy supply, environmental preservation, and national security issues concern everyone in the region, and decisions regarding long-term national strategy are required. Fortunately there are many things which can be learned from the experience of Europe. Improvement of natural gas pipelines proceeded rapidly on the European continent; however, the real impetus for this action was the accession in the late 1960s of the Brandt administration in former West Germany. Through its policy of *Ostpolitik*, this administration sought during the Cold War to improve relations with the former Soviet Union. This policy included the establishment of a natural gas pipeline to West Berlin. There have been efforts in Japan to strengthen financial ties with Russia in a bid to improve diplomatic and security relations, and the Sakhalin natural gas pipeline plan is expected to play a symbolic role in these efforts. In that event, Japan must work as hard as possible to achieve economic optimization, while not losing sight of its national interests in relation to its territorial disputes with Russia.

Development of nuclear power and regional cooperation in Asia

Nuclear power has become an integral part of plans to develop diverse energy sources for East Asian countries that are poor in energy resources—such as Japan, Korea, and Taiwan. Global demands to curb emissions of CO_2 and other greenhouse gases have increased in recent years, and increased expectations have in turn been placed on nuclear-generated electricity. Yet, public concern over the safety of nuclear power plants is rising in these countries, and it is thus becoming increasingly difficult to construct new nuclear power plants.

Meanwhile, two nuclear power plants are under construction under the auspices of the Korean Peninsula Energy Development Organization (KEDO). Their construction has been funded by South Korea, Japan, the US, and various other countries in exchange for a North Korean agreement to abandon its nuclear development program together with its military applications.[4] At the beginning of 2002, however, the Bush administration bundled North Korea together with Iraq and Iran, and branded the three nations as an "axis of evil." Furthermore, progress has been slow at these two sites, with the result that there is no way of telling when the plants will be completed. The future became even more uncertain when it was revealed at the US-Korea summit of October 2002 that North Korea had continued its nuclear weapons development program, which includes production facilities for highly enriched uranium.

China is also embarking on a serious nuclear development program. Nuclear development in the US and Europe has been stagnant for many years, with the result that manufacturers of nuclear devices in France, Canada, Russia, and various other countries have entered the Chinese market with the blessing of their respective governments. Fearing the proliferation of nuclear technology, the US has maintained a strict ban on the export of nuclear power equipment to China; however, aggressive sales by European companies have driven the US to relax some of its restrictions. Japan has realized that, in order to insure the safe operation of nuclear power plants in China, it must contribute by supplying parts; it has thus applied a policy that offers an "equipment and safety" package deal on exports.

East Asia is expected to become the world leader in the peaceful application of nuclear power; however, as a result, the problem of the processing and disposal of spent fuel arises, creating major concerns regarding the proliferation of nuclear weapons. Japan is pursuing a policy of using uranium, as the spent fuel can then be reprocessed and re-used as metal-oxide (MOX) fuel. However, this plan has been delayed by the government's inability to allay the fears of the local citizenry in the areas concerned. Nevertheless, development of nuclear power in Asia is moving forward, and the safe operation of nuclear power plants, the processing and disposal of spent fuel, and various other back-end problems remain pressing issues. These issues require examination with a view to regional cooperation, and demand the full efforts of countries in dealing with the specific situations within their own borders.

A putative Japan-Korea Energy Market

As the preceding discussion has shown, it is now more vital than ever that the greater Asian region play a part in Japan's energy security. In addition, the establishment of a Northeast Asian energy market requires serious consideration. As there are many political and economic problems that have yet to be solved, the best interim approach is to move slowly and deliberately, building trust and increasing mutual confidence. In the meantime, effort can be put into the formation of a Japan-Korea energy market, since high-level discussions are already moving towards a free trade agreement.

Conditions are now right for taking this step: the two countries are geographically close, their levels of economic development are roughly equivalent, and the energy supply and demand structures in the two countries are almost identical. Unlike countries in the European and North American markets, Japan and Korea are not connected by a power grid or pipelines; hence, at the present time, a petroleum market might represent the best option. There are several possible benefits that might accrue from the formation of a joint energy market focused on oil. First, in both countries the oil refinery industry relies almost exclusively on imports, and the petroleum products market will be bolstered by a combined market, affording Japan and Korea increased flexibility in crude oil procurement and a stronger position in negotiations with oil-producing countries. Second, with an expanded market, economies of scale in the distribution system for petroleum products would be achieved. Transportation costs could be greatly reduced, for example, if Korea supplied petroleum products to Kyushu and to areas of Japan bordering the Sea of Japan.

To make a Japan-Korea oil market work, however, the taxes levied on petroleum products would have to be adjusted. In Japan, imports of petroleum products—particularly fuel oil—are heavily taxed at present.[5] The most efficient type of distribution system would result from the imposition by both countries of a uniform tax on petroleum products. In the very long term, undersea power cables or natural gas pipelines would set the stage for the establishment of a joint electricity or gas market.

Japan's energy diplomacy

Securing a stable supply of energy is—and will continue to be—of vital national interest for Japan. However, the end of the Cold War paradigm and the acceleration of globalization demand a comprehensive overhaul of Japan's energy diplomacy.

First, it has become even more important that energy policy and security policy be coordinated. Japan must fully consider how it would deal with a repeat of the Gulf War or with threats to sea lanes that carry oil to Japan. This forward-planning must also encompass the issue of collective self-defense. If the US deems Japan to be delinquent in the fulfillment of its obligation to maintain its own energy security, the very foundation of the US-Japan security alliance could be threatened. Now, more than ever, energy problems and security problems are indivisible from one another.

Second, to give Japan more influence with oil-producing countries in the Middle East, cooperative relationships with Korea, Taiwan, and China must be built up, and the bargaining power of the entire Northeast Asian region increased. Development of oil and natural gas pipelines from Russia's Far East will also generate leverage with oil-producing countries in the Middle East. Naturally, even after the end of the Cold War, remnants of historical enmities still exist in Northeast Asia. At the same time, with dependency on Middle East resources expected to increase in the twenty-first century, efforts to create a multinational framework for resolving regional energy and environmental issues will also prove beneficial to the establishment of a regional security system. At that juncture, Asia will have to confront its own specific regional issues, such as the "China problem." Moreover, whatever approach is adopted must be founded on the US-Japan strategic partnership.

Third, the trend in international negotiations regarding global warming is greatly affected by the global energy crisis; thus, close coordination between energy diplomacy and environmental diplomacy is required. Measures to counter global warming will result in a reduction in fossil fuel consumption—a matter of considerable concern to OPEC members. Utilization of the Clean Development Mechanism (provided for in the Kyoto Treaty) in the implementation of CO_2 reduction projects in oil-producing countries, as well as in developing countries in Asia, will benefit both Japan and the oil-producing countries. Hence, coordinated efforts are required at the policy level to deal effectively with both energy and environmental problems.

Notes

1) Reducing dependency on oil has been a top priority in Japan's energy policy since the first oil shock in 1973. As a result, the amount of imported oil as a percentage of Japan's energy supply dropped from 78% in 1973, to 51% in 2001. However, the percentage of oil imports from the Middle East as a percentage of total oil imports has recently been on the rise and reached 86% in 2001.

2) According to the IEA's *World Energy Outlook 2002*, oil imports for developing countries in Asia are expected to increase dramatically from 4.9 Mbd (42% of demand) in 2000, to 24 Mbd (83% of demand) in 2030. In particular, net oil imports for China alone are expected to jump from 1.7 Mbd (35% of demand) in 2000, to 10 Mbd (83% of demand) in 2030.

3) The Japanese government has formulated a comprehensive policy, called the Hiranuma Initiative, which is aimed at maintaining energy stability in the Asian region. This policy was presented at a meeting of energy ministers from Japan, Korea, China, and the ASEAN nations at the IEF forum in Osaka, and was approved by all participants. The main points of this policy are (1) to promote cooperation in the development of natural gas resources in the Asia region, (2) to exchange information in emergencies, and (3) to cooperate with Asian countries in price negotiations with oil-producing nations.

4) KEDO is an international organization which was founded in 1995 based on the Agreed Framework between the US and North Korea. Since North Korea's admission that it had continued its nuclear weapons development program, the effectiveness of the framework itself has been called into question.

5) Japan's petroleum product tax per kiloliter is ¥1200 for gasoline, ¥570 for kerosene, ¥1270 for light oil, ¥2400 for low-sulfur crude oil, and ¥3410 for high-sulfur crude oil. Naphtha is tax-exempt. In tandem with a 1972 policy of deregulation of fuel oil imports, a proportional tax was introduced to support refining near areas of consumption, and this high secondary tax is still in effect today. On imported fuel oil priced at ¥20,000 per kiloliter, the tax amounts to between 12% and 17%. In contrast, Korea imposes a uniform tax on all petroleum products of 7% of the import price—except on naphtha, for which the taxation rate is 1%.

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