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Energy and Security in Northeast Asia: Fueling Security

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Kent Calder • Fereidun Fesharaki
Introduction by Susan L. Shirk and Michael Stankiewicz

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ENERGY AND SECURITY IN NORTHEAST ASIA:
FUELING SECURITY

INTRODUCTION

by *Susan L. Shirk and Michael Stankiewicz*

The international politics of energy, a staple of studies of the relations between the Western powers and the Middle East, is a new item on the East Asian policy research agenda. Studies to date have focused either on the technical prospects for energy exploration and development to meet rising energy demand, the role of Northeast Asia in global energy politics, or the security community's perspective on energy.¹ IGCC Policy Papers 35-37 examine these issues with an eye towards a greater challenge; how—and if—multilateral cooperation can help Asia meet its rising energy demand.

Energy and Security in Northeast Asia is a three-part series of papers showing that there are unrealized gains to be had from multilateral cooperation on energy issues. Such cooperation is the goal of the University of California Institute on Global Conflict and Cooperation's Northeast Asia Cooperation Dialogue (NEACD), an informal track-two discussion exploring the potential for cooperation on security issues among China, Japan, Russia, the Republic of Korea, the Democratic People's Republic of Korea, and the United States. Many papers in this collection first were presented to a September 1996 NEACD workshop on Northeast Asian energy and security held in Seoul, Korea. That workshop offered participating government officials and private experts an opportunity to explore the ramifications of increasing energy demand on future relations among their countries. After the workshop, IGCC solicited additional papers to analyze the basic premises among our initial contributions.

Faced with the need to fuel their rapidly growing economies, the governments of Northeast Asia will face policy choices that will have major implications for their relations with their neighbors, with the United States, and with the Middle East. The series explores the links between energy and security, with the objectives of sensitizing policymakers to the possible consequences of their choices, helping promote constructive solutions, and encouraging diplomats to begin a dialogue with energy technicians.

Energy and Security in Northeast Asia seeks to clarify details in three major issue areas. The first, *Fueling Security* poses a fundamental question: Does rising energy demand yield more security dilemmas or will efficient energy markets mitigate potential security risks arising from increased competition for energy resources?

The dramatic growth of East Asian economies in recent decades has stimulated massive increases in their demand for energy, predicted to continue to grow despite the region's 1997-98 financial crisis. How will this energy demand be met? Will competition for energy supplies aggravate rivalries between East Asian countries and induce new forms of cooperation, or might the competition simply be channeled efficiently through international energy markets, with little impact on political or military relations?

Fueling Security begins by examining Kent Calder's argument (articulated in his book *Pacific Defense*) that energy rivalry could deepen great power tensions in Northeast Asia. Calder recognizes that stable supply and stable prices of energy are critical to the well-being of the countries in this region, but is unconvinced that their efficient provision can be assumed. His argument starts with the import dependence and energy vulnerability of not only Japan, the region's largest economy, but also South Korea and Taiwan, which are both still mired in 50-year long geopolitical struggles (with North Korea and China respectively). New to the equation, however, is the introduction of China—and its latent potential energy demand—into Asian energy competition. Just as the competitive pressure from Chinese firms has negatively affected the fortunes of firms in neighboring economies in the region so, Calder argues, China's increasing demand for energy and its new status as energy importer can generate pressures in Northeast Asia's energy markets.

Calder describes the problems plaguing several potential solutions for filling the gap likely to be created by increasing competition for energy supplies. A short-term solution would involve natural gas available in Asia, but insufficient transportation infrastructure (such as liquefied natural gas (LNG)-capable facilities in ports, pipelines) and its high cost relative to oil and coal make it unfeasible. The heavy use of coal, available in plentiful supply, especially in China, raises a myriad of environmental consequences. Tapping off-shore oil deposits in Asia's maritime regions must overcome political barriers to sharing resources (e.g., because of overlapping claims of jurisdiction) and exploration and development technology. Countries in the region maintain ambitious plans for nuclear energy, but questions of adequate safety and training standards, dwindling storage for waste, insufficient capital, and non-proliferation concerns arising from reprocessing

plans (e.g., in Japan) bedevil this potential solution. Calder also notes that Asia must develop a new regulatory framework to monitor growth in its nuclear industries, something nearly impossible to do in this era of regional suspicions and declining global interest in nuclear energy (after the Chernobyl and Three Mile Island accidents).

Calder concludes that these factors raise a host of serious security concerns, especially when considering the increasing Asian dependence on Middle Eastern oil. Strengthening Middle East-Asian relations leads to potential arms for energy deals with countries that sponsor international terrorism, with subsequent global geopolitical effects. In addition, the increasing importance of the transportation of oil through the strategic sea lanes of Southeast Asia has led to tension between the *status quo* of guaranteeing freedom of navigation (the United States Navy) and the growing power of naval forces of China and Southeast Asian countries that neighbor these sea lanes. Ambiguities surrounding the application of the new Law of the Sea Treaty are similarly related to international tensions among China, Japan, Korea, Taiwan, and Southeast Asia involving jurisdictional disputes over offshore resource beds.²

But Calder notes that issues surrounding energy competition not only can deepen tensions between Asian rivals with a recent history of acrimonious relations, but also provide an opportunity for cooperation which, if developed, can play a constructive role in a region lacking confidence-building measures.

Calder's viewpoint is challenged by economist Fereidun Fesharaki, who believes that conflict is unlikely, because international energy markets will respond to the increased demand for fuel by stimulating the production of more oil and gas. Fesharaki sees market competition where Calder sees rivalry. Breakthroughs in technology have cut the cost of oil exploration and development, providing plentiful supplies from previously inaccessible areas. Deregulation and privatization are likely to support this trend, which will mitigate any tensions arising from competition for energy resources. This will hold any price increases to short-term, politically-induced price shocks that should return to long-range stability. And Fesharaki downplays the security impact of disputes over off-shore energy resources, because the reserve potential of these sites is exaggerated and small relative to other sources of energy.

Northeast Asians will import more oil from the Persian Gulf, Fesharaki admits, but he views this relationship as one of codependency, in which neither side can afford to break the bond. The only security risks Fesharaki anticipates are pressures on the security of shipping routes if the United States withdraws from its role as guarantor of the safety of those shipping lanes.

Examination of Calder and Fesharaki's contrasting perspectives raises a vital issue. What if both are right? Energy markets probably can mitigate conflict over energy resources. But Calder can be correct too, in that cooperation among nations to help them meet their growing energy demands can mitigate conflict in other defense- and security-related fields. Can this be a confidence-building measure in a region in dire need of them, as the Northeast Asia Cooperation Dialogue has shown?

This is the question that will be examined in Policy Papers 36: *Supply and Demand; Conflict and Cooperation*, and Policy Paper 37: *Proposals for Nuclear Cooperation*. Policy Paper 36 lays out the current status and

projections for energy demand and fossil fuel use in the region. It also includes a realistic analysis of the most highly-touted multilateral solutions to the challenges faced by energy planning policymakers—grandiose pipeline schemes. Finally, Policy Paper 37 tackles in detail many of the ideas being developed in the area of regional nuclear cooperation; ideas gaining popularity in regional security-making circles.

Endnotes

1. For example, see Keun-Wook Paik, *Gas and Oil in North-East Asia*, 1996 (Royal Institute of International Affairs) and another Royal Institute of International Affairs volume, *Northeast Asian Energy and the Global Context*, 1996.
2. For details regarding the security impact of maritime trade and transportation issues in Asia, see IGCC Policy Paper 33, *Maritime Trade and Security in Northeast Asia*, ed. Michael Stankiewicz.

ENERGY AND SECURITY IN NORTHEAST ASIA'S ARC OF CRISIS

*by Kent E. Calder**

For nearly 15 years, since oil prices began to wane in the early 1980s, the world has sometimes neglected the connection between energy and security. The time has now come for a reevaluation. In the coming years, stable, reasonably priced energy supplies will continue to be critical to national well-being. Yet their safe and efficient provision cannot be assumed. It is in Northeast Asia that the looming long-term problems of energy supply or the dilemmas for security that inevitably follow are likely to be more complex, subtle, and potentially dangerous.

The issue of energy security is an especially pressing and complicated one for the Northeast Asian policy agenda because of the region's distinctive geopolitical structure and natural resource endowments. It is a uniquely conflict-prone region that can readily be called "a Northeast Asian Arc of Crisis," stretching from energy-rich Sakhalin in the Northeast, across Korea and around Japan to the energy-deficient Fujian and Guangdong provinces of China in the southwest.¹ The interests of four large powers intersect around the volatile fulcrum of the Korean peninsula, without any stabilizing regional security structure to deter or mediate conflict.

Northeast Asia is also a region of unusually pronounced energy deficiencies in some member nations, especially Japan and Korea. These energy "have-nots" have been long-separated by a forbidding Cold War political divide from the enormous energy reserves of Russia and some parts of China. The region could be much more self-sufficient if security dilemmas and political barriers can be overcome.

This paper considers the emerging security dilemmas for Northeast Asia, and for the United States as well, that flow from the region's attempts to meet its spiraling energy requirements. The thesis presented here is that energy is, for this volatile region, a double-edged sword. Energy could deepen the tensions endemic in an area of great-power rivalry with tragically few mechanisms to restrain conflict. Alternatively, it could

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dampen them, opening the way for important new forms of collaboration. Concrete initiatives to allow energy cooperation to play a constructive role in the overall Northeast Asian confidence-building equation are thus urgently needed.

Energy as a Security Imperative

The importance of energy as a security concern for advanced industrial societies has been clear at least since the dawn of the auto and the aviation ages early this century.² The importance of energy supply as a constraint on military activity emerged clearly in the early stages of World War II. Many analysts feel that energy shortages emerging in Japan's war of aggression against China after 1937, coupled with the US oil embargo of 1940, were a major factor motivating Japan's surprise attack on Pearl Harbor in December 1941.

But energy is needed for more than fueling tanks and warplanes; it is fundamental to industrial production, civilian transportation, and consumer life. A stable, cost-effective supply of energy is a basic economic and—by extension—a national-security imperative. The destructive effects of sudden changes in energy price and availability were dramatically evident following the oil shocks of 1973 and 1979.

Japan, Korea and Taiwan: Endemic Resource Insecurity

Northeast Asia is a region where energy and security are locked in an unusually tight and fateful embrace, because of the distinctive energy vulnerabilities of many nations within the region. The Asia-Pacific area provides little more than 10 percent of global oil production and less than 5 percent of world reserves, even including currently large or growing oil exporters such as Indonesia or Vietnam. With a reserves to production ratio of only 18 years (the world average is 46 and the Middle East average is 104), East Asia stands on perilous ground as it looks to the future.³

Best known and most long-standing are the energy vulnerabilities of Japan, which has never had a single major developed oil field. In the mid-1990s, Japan imported more than 99 percent of its oil. Japan has also imported substantial

amounts of coal since the early days of its opening to the outside world in the 1850s. Japan's proportion of imports to overall energy consumption is 85 percent, currently the highest proportion among major industrialized nations.⁴ Hydroelectric power is the only energy resource it draws in abundance from domestic supplies.

Japan's energy Achilles' heel translated by the mid-1990s into a fuel import bill of more than \$50 billion, even with all the conservation of the 1970s and the 1980s taken into account. Oil accounted for more than half of that total, even at \$20 a barrel. If oil prices returned to the stratospheric levels of the 1970s and 1980s, the burden on Japan would be even greater.

Given the massive, nearly \$4 trillion scale of the Japanese economy, Japan's lack of energy resources naturally has a major impact on global and regional energy markets. Japan imports nearly three times more oil than any other nation in East Asia, and almost two-thirds of the liquefied natural gas moving in international trade. Since 1987 Japanese oil demand has risen 5 percent per year, adding 900,000 barrels per day to Asian regional requirements.

But Japan is not the only Northeast Asian country dependent upon energy imports. Other parts of Northeast Asia are even more precariously vulnerable in matters of energy than Japan. The Korean peninsula, with less available indigenous resources and more energy-intensive economy than Japan, is the most vulnerable. South Korea, with large, energy-devouring petrochemical, steel, and shipbuilding industries, and a growing middle class increasingly addicted to driving, recently grew 8 percent per year. But oil demand has risen 20 percent annually, and gasoline demand, propelled by a 22 percent annual increase in vehicle registrations since the late 1980s, soared 29 percent per year.⁵

Overall, South Korea tripled its per capita consumption of energy from 1975-1991, to almost 2200 kilograms per capita.⁶ This translated into an import bill of \$13 billion, roughly triple the energy import bill that Japan currently confronts, relative to overall national GNP. As a smaller nation, South Korea has had even more trouble competing for oil in times of shortage. This was graphically clear during the two oil shocks of the 1970s and amidst the Gulf crisis of 1990-1991. North Korea has substantial production and reserves of coal (four times Japan's production, and nearly three times South Korea's).⁷ But it has no oil and is forced to import all its requirements either overland from China (75 percent) or by uncertain and

vulnerable sea routes of more than 7000 miles from Iran. If South Korea has problems obtaining scarce energy in times of shortage, these are magnified in the case of the North; it not only lacks foreign exchange and geopolitical leverage, but has much more complex and delicate ties to the international system.

These difficulties, of course, have made the North's uranium reserves at Unggi, Pyongsan, and Hungnam, together with its controversial reactor and reprocessing plant at Yongbyon, even more important in the Korean peninsula's energy equation. They intensify its attraction to nuclear power. The October 1994 Framework Agreement with the United States to supply heavy fuel oil to the North was an important element in securing Pyongyang's assent to constraints on its nuclear program.

As in Korea and as was once true in Japan, Taiwan also has major energy vulnerabilities compounded by a tense geostrategic context that invests those vulnerabilities with major political significance. In 1991 Taiwan imported \$24.3 billion in crude oil, \$9 billion more than Korea. Unlike Korea, Taiwan lacks substantial coal reserves, so it was also forced to import \$23.2 billion worth of coal. This combined energy import bill, approaching \$50 billion annually, was more than double that of a decade earlier and more than 40 times the level of 1975.⁸

China and Asia's Changing Energy Equation

The first thing to remember about China's relationship to the Asian and global energy scene, is how little energy each Chinese actually consumes today. Chinese consume far less per capita of virtually all types of energy than do Americans, Japanese, or South Koreans, and only 40 percent of the world average. They use relatively large amounts of coal, which meets 75 percent of primary energy demands in China, but little of anything else. Chinese per capita consumption of oil in 1990 was around one sixth of the global average, 10 percent of Korea, 5 percent of Japan, and only 3 percent of levels in the United States.⁹

China, with its 1.2 billion people—five times the population of the US and 10 times that of Japan—obviously has huge, latent potential demand for energy that will become manifest as its economy further develops. China's energy policy decisions may well determine the

prospects for, and the timing of, another major global oil shock. Those decisions could also profoundly shape the world's environmental future. China today, for example, is already the world's second largest producer of greenhouse gases because of its massive use of coal. Its policies to diversify away from "dirty" fuel, or to neutralize its environmental effects, could likewise have fateful global significance.

But these prospects are speculation for the future. Despite China's huge potential domestic energy demand, it remained one of the most important energy exporters of Asia from the mid-1970s to the early 1990s. As recently as 1985, the PRC shipped nearly a quarter of its production abroad. Nations such as Japan had high expectations of China; in 1990, China exported \$2.8 billion in crude oil and petroleum products to Japan, the largest amount Japan received from any Asian country other than Indonesia.¹⁰ The PRC also shipped 16 million tons of coal eastward annually across the East China Sea, mostly to Japanese electric power companies.

Since the early 1990s, China's energy balance has sharply deteriorated, propelled by the dual pressures of double-digit economic growth and transition to a consumer economy. China in 1993 consumed more than two million barrels of oil a day, with its demand for refined oil products rising at close to 20 percent annually.¹¹ With China's energy consumption per capita remaining little more than one sixth of Japan's, one fourth of Taiwan's, and one third of Korea's,¹² and with explosive growth continuing, its aggregate energy demand will also likely see substantial future expansion.

We can begin to grasp the sobering global implications of rising energy demand in China through international comparisons. It is, for example, quite reasonable to expect that per capita energy consumption in China might reach the level of average Latin American countries shortly after the year 2000. But if that happens, China's total oil consumption might exceed that of all OECD nations in Europe combined. It could increase total global oil needs by 20 percent, assuming analogous per capita consumption levels. And if China reaches South Korea's present consumption levels, its total oil consumption would be double that of the entire United States today.¹³

The forces that could provoke such massive and internationally historic increases in Chinese energy consumption are already in motion. Among the most important is economic growth

and the grassroots buying power that such growth brings. Chinese growth has continued at close to double digit levels since 1979, and the prospects are good for at least six percent annual GNP growth continuing throughout this decade.¹⁴

China may continue to be plagued by inequity, like most nations. But a middle class of 100 to 200 million people (the population of Japan or the US) is gradually emerging. Within a generation, it will have per capita incomes above \$4,000 per year, providing a highly dynamic market for consumer durables.¹⁵

The number of electric fans in China has increased 20 times in the last 15 years, and the number of washing machines has risen from virtually zero to 97 million.¹⁶ This consumer revolution increases China's energy demand sharply, but much more fateful changes are imminent, especially the prospect of widespread auto usage. China's leaders declared autos a "pillar industry," meaning that along with telecommunications, computers, and petrochemicals, the industry will get special government priority. The state is also enticing foreign compact-car manufacturers like Volkswagen, which has produced its Santana in Shanghai since 1985, to cooperate. Within a decade, it raised its local content to 85 percent from 190 suppliers in the Shanghai area.¹⁷

By 2010, Chinese authorities expect the Chinese auto industry to produce three million passenger cars per year.¹⁸ The long-term market estimate is 300 million potential car owners. Given that China already has 1.2 billion people, and that it would have 483 million cars if it had the vehicle density of Germany, this long-term projection seems well within the realm of possibility.¹⁹

China's energy problem goes beyond huge prospective increases in overall national energy demand, driven by growth, affluence, and a consumer revolution. The energy supply-demand balance varies sharply across China, with the nation's sizable confirmed on-shore reserves located frustratingly far from the rapidly growing sources of demand. The most explosive increase of demand flows from the southeastern coastal provinces, notably Fujian and Guangdong, where oil consumption in particular is expected to double by 2000, compared to 1990.²⁰

Southeast China has virtually no local oil production of its own and is heavily reliant on imports. The boom town of Shenzhen in Guangdong, for example, lies just across the border from Hong Kong and procures more than

90 percent of its oil from imports, mainly from Singapore. Its level of imports, like that of most Chinese coastal areas, seems likely to soar in the coming decade.

Rising Regional Competition for Supply

Asia's energy demand, centering on oil, will not only rise but also will progressively broaden to include a wide range of even more rapidly growing nearby economies. Recent APEC forecasts, presented in Table 1, suggest that within 15 years there will be four or five major competitors for existing Asian oil supplies in regional markets traditionally dominated by Japan.

By 2010, should current forecasts prevail, Japan's share of Asian oil imports will have fallen 50 percent to 37 percent of the region's total. China (including Taiwan and Hong Kong) will account for 28 percent, with mainland China's share rising sharply. Korea and ASEAN, both with continually rising requirements, will have to fight for the rest in potentially tight regional and global markets. The intensity and complexity of emerging multipolar energy-supply rivalries in Asia are developments for which the region (and the world) remain remarkably unprepared. They could have a particularly severe impact in Northeast Asia, where energy deficits are often intractable and political relations delicate.

Filling the Gap

Natural gas, as yet a remarkably under-appreciated fuel source in the region, may provide some limited relief from the increasingly serious energy shortages that loom before high growth East Asia, especially because it is extremely clean-burning and environmentally acceptable. Natural gas, for example, only accounts for 10 percent of total energy consumption in Japan, compared to the 20-25 percent shares that gas typically holds in the United States and Europe. Production of liquefied natural gas (LNG), in contrast to oil, has kept pace with demand; the bulk of which comes from crowded, heavily industrialized Japan, Taiwan, and South Korea, where environmental concerns are strong. Indonesia, the East Asian region's largest producer, has a

Table 1: Emerging Asian Oil Import Rivalry?

Importing Nation	Share of Total Asian Oil Imports (%)		
	1992	2000	2010
Japan	77.4	53.2	36.5
China	-	10.9	19.4
Taiwan/Hong Kong	10.0	9.7	9.0
Korea	21.0	20.3	18.3
ASEAN	-	5.9	16.9

Source: APEC International Advisory Committee for Energy Intermediate Report, June 1, 1995.

Notes: Based on 1995 national energy supply-demand projections, in metric tons of oil equivalent (MTOE), for Japan, China, Taiwan/Hong Kong, South Korea, and ASEAN; 8.4 percent of net 1992 imports into the nations listed were from China and ASEAN.

substantial share of proven world LNG reserves. Development of the huge Natuna fields in the South China Sea, scheduled to come on-line around 2005, promises to extend the active life of those Indonesian reserves well into the early 21st century, provided that political complications do not intervene.²¹ Malaysia, Australia, China, and Brunei, within the Western Pacific, also have substantial reserves, leading APEC forecasters to suggest that LNG could supply as much as a tenth of Asia's total energy demand by 2010.

Yet the incentives for the huge and risky investments in LNG export facilities like pipelines and liquefaction plants, without which LNG cannot move internationally to potential consumers, remain limited by low fuel prices on the world market. For LNG to become more attractive, oil prices will have to go up and stay up, in predictable fashion. And LNG facilities are always developed jointly by producer and consumer. No consumer likes higher prices. Some analysts suggest that Russia could provide an attractive source of both oil and natural gas for East Asia.²² Certainly it has the resources to do so, with an estimated 20 percent of all the oil and 39 percent of all the gas on earth lying within its borders.²³ Gas from the Yakutia region of Siberia could be shipped south through North Korea to supply South Korea, while that from Sakhalin could be shipped by pipeline and tanker south to both Korea and Japan.²⁴

Providing Russian gas supplies to Northeast Asia is a promising subject that requires serious discussion.²⁵ Unfortunately, however, there are still myriad economic and political complications with these massive prospective projects (see Dorian and Valencia, IGCC Policy Paper 37). Apart from the cost of infrastructure investments, existing oil and gas wells in Russia are plagued by difficulties in servicing and maintenance that are causing steady production

declines throughout the country. Oil production in Russia peaked in 1987 at 11.4 million barrels/day and has been declining ever since.²⁶ By the mid-1990s, it had collapsed to seven million barrels per day and was still declining, plagued by maturity, poor maintenance, and lack of investment in the older West Siberian fields. This astonishing drop is equal to 60 percent of total U.S. oil production, and is greater than the output of any OPEC state except Saudi Arabia.²⁸ Prospects for an early recovery are bleak, with Russian production expected to fall to as little as one third of peak levels by the late 1990s. At least \$100 billion of new investment in Russia's abused and depleted oil fields would be needed even to return output to the levels of a decade ago.²⁹

Coal is another alternative to East Asia's heavy oil dependence. For China, it will continue to be a vital energy source; coal currently provides three quarters of China's energy, making China the world's largest consumer. That country's massive trillion tons of proven coal reserves are also the third largest in the world, while Asia has a comfortable 29 percent of global coal reserves.³⁰

Unfortunately, coal poses major environmental dangers. China, still a middle-sized economy, is the second largest producer of greenhouse gases in the world. Acid rain from China's wholesale use of coal is beginning to defoliate forests in Toyama and Shimane prefectures, far across the Sea of Japan. On top of other drawbacks, coal cannot accommodate China's auto revolution. Both China and Northeast Asia are forced back to oil, where their short-term vulnerabilities are pronounced.

One option could be offshore oil produced within the region. Asia's seabeds, particularly those close to China, are covered with heavy layers of sediment rich with hydrocarbons, deposited over millennia by the region's muddy,

silt-laden rivers. The region has an abnormally wide continental shelf, more accessible to drilling than the deeper sea. More than 5 percent of the world's shelf is adjacent to China alone.

Though offshore oil may perhaps be present in great quantity, it is unlikely to be exploited within this decade in a sufficiently systematic way to prevent fatefully rising Asian energy dependence on other parts of the globe. Much of the oil is in deep seas and far from the coast. Much of it, especially in the East China Sea, appears in small, frustratingly hard-to-develop pockets. And large areas lie in politically contested waters, where political risk factors inhibit exploration.

The technology of offshore exploration and production is improving rapidly. For example, in the Gulf of Mexico and offshore Brazil, Shell and other Western oil producers are already using deep-diving robots for construction and maintenance, which service huge platforms tethered by steel tendons to barn-sized anchors on the ocean floor.³¹ But a maze of complications, many of them political, make it unlikely that Asia can possibly slake its voracious thirst for oil internally for many years to come, despite the rapid advance of offshore exploration, drilling, and production technology.

East Asia as Oil Importer: Deepening Middle East Linkages

Asia meets half of its oil needs through imports from outside the region. As demand rises, this ratio could climb to two thirds by 2000.³² If imports from Russia remain constrained while offshore prospects in the China Seas continue to be clouded by political uncertainty, Asia cannot avoid deepening its dependence on the Middle East, where well-head production costs range as low as \$1-2 a barrel and substantial excess production capacity still remains. According to East-West Center estimates, by 2000, 87 percent of all the oil East Asian nations import will flow from the Middle East, up from 70 percent at present. By 2010, import dependency on that volatile region is projected to rise to 95 percent.³³

If this pattern materializes, a growing fleet of heavily laden super tankers will plow east across the Arabian Sea and Indian Ocean, headed for Singapore, Hong Kong, Shanghai, Pusan, and Yokohama. As Table 2 suggests, East Asian oil

imports from the Middle East could triple in the next 15 years to a level approaching 20 percent of total world oil consumption.³⁴ Unless non-economic forces intervene to arrest this trend, the two major economic and geopolitical centers of the non-Western world would be joined in an unprecedented embrace, with global implications.

Japan and to a lesser degree South Korea and Taiwan are already heavily dependent on the Middle East for oil imports. Japan in 1992 imported around three quarters of its entire oil supply from that volatile area. What is changing—a matter of first-rate economic and security importance for both the region and the world—is China's entry into this whole equation. Until the early 1990s, Chinese oil imports were insignificant; less than three million metric tons annually. But they have steadily escalated since 1990. Even though China continues to export some oil, its imports have surged, because of the location of existing oil fields and refineries, coupled with the difficulties of internal distribution. Fueled by explosive growth in coastal areas, especially those of the Southeastern coastal provinces such as Guangdong and Fujian, China became a net oil importer during the fourth quarter of 1993 for the first time since the mid-1960s. And a significant share of its emerging imports were from the Middle East.

With Chinese internal forecasts suggesting domestic oil demand of 175 million tons by the year 2000, and production capacity of little more than 145 million, the prospects are strong for large and rising Chinese oil imports.³⁵ Even the relatively conservative International Energy Agency suggests that these imports will rise to 900,000 barrels per day by 2000, and to roughly 2.8 million bbl/day by 2010.³⁶ Including Taiwan and Hong Kong, China's oil imports will likely approach Japan's level within a generation.

Currently around half of China's crude oil imports are from the Middle East. Given the low cost of Persian Gulf oil at the well-head, however, that unstable region is likely to be asked to meet the overwhelming proportion not only of China's, but of all Northeast Asia's new incremental demand, as suggested in Table 2. More than 10 million barrels of oil a day could be flowing by supertanker east to Asia, with an increasing focus on China, as the 21st century dawns.

Energy vulnerabilities are pervasive across much of Northeast Asia, especially Japan, Korea, and Taiwan, which lack domestic oil and gas

Table 2: The Deepening East Asia-Middle East Energy Linkage**A. The Asia-Pacific Crude Oil Equation**

	1993	2000	2010
Oil demand, million bbl/day	14.9	19.8	26.6
Oil supply, million bbl/day	6.9	6.9	6.7
IMPORTS	8.0	12.9	19.9

B. Rising Dependence on the Middle East

	1993	2000	2010
Share of imports from Middle East (%)	70	87	95
Volume of imports from Middle East, million bbl/day	5.6	11.2	18.0

Source: Fereidun Fesharaki, Allen L. Clark, and Duangjai Intarapavich, eds., *Pacific Energy Outlook: Strategy and Policy Imperatives to 2010*, East-West Center Occasional Paper, Energy and Minerals Series, No. 1 (Honolulu, March 1995).

reserves. China is also rapidly becoming deeply dependent upon the global energy market. Given the Middle East's pivotal position as a global low-cost supplier, it is rapidly forging deep new energy ties with the voracious consumers of Northeast Asia.

Security Implications

Given the presence of massive reserves and substantial unused production capacity for both oil and natural gas in the Middle East, and the apparent willingness of Saudi Arabia to continue playing the role of swing supplier, there seems little prospect of global oil shocks like we experienced in the 1970s. But Northeast Asia's emerging energy profile will nevertheless have major implications for regional security. The effect of energy rivalries and tensions could easily have destabilizing international consequences, given the underlying geopolitical uncertainties and tensions in the Northeast Asian Arc of Crisis.

The Newly Strategic Southern Sealanes

Among the most important security implications of Northeast Asia's emerging energy profile is that it enhances the strategic importance of sealanes across the East and South China Seas, the Bay of Bengal, and the Indian Ocean to the Persian Gulf. The volume of oil passing eastward through the Straits of Malacca to East Asia is likely to triple by 2010, and the bulk of that expanding flow is likely to arrive at Northeast Asian ports such as Yokohama, Pusan,

and Shanghai. And oil will not be the only form of energy flowing through the sealanes of East Asia and the Middle East. As already discussed, liquefied natural gas (LNG) is also likely to move in substantial quantities.

Mitsubishi, Exxon, and other firms have ambitious proposals for large-scale overland pipelines from Central Asia, especially Turkmenistan, to China, Korea, and Japan (see Dorian and Valencia, IGCC Policy Paper 37). Two critical uncertainties that limit their immediate feasibility, however, are the pariah status of Iran, a potentially massive source of low-cost gas, and the Indo-Pakistani conflict, which constrains the emergence of India as a major market to share development costs of a massive, integrated pipeline system. The cost calculations and the political-economic context, shadowed as it is by Iran's unacceptable support for state-sponsored terrorism, are both complex and uncertain. In the absence of major policy shifts in the various nations concerned, a grand Middle East-Asian pipeline system seems unlikely, leaving Asia largely dependent on seaborne LNG and oil.

The security issue of the sealanes of communication will be of rising importance in Northeast Asia, both because of increasing imports from the Middle East and the proliferation of major nations actively using those sealanes. Northeast Asian nations will have various and sometimes contradictory notions of how they want to bolster sealane security. Of particular interest will be the intentions of China, a rather new energy importer, but one whose imports seem likely to rise 500 percent by 2010, with most of the increment flowing from the Middle East.³⁷ Will China elect to rely on the *status quo* (essentially the US Navy) to preserve

freedom of navigation for its growing oil supplies from the Persian Gulf? If not, what degree of enhanced domestic sealane defense capacity will it pursue? How will Japan and Korea respond to China's actions, especially if they doubt the long-term large-scale presence of the United States in West Asian waters that carry relatively little US trade? The answers to all these questions remain unclear. The ambiguities are dangerously compounded by the lack of transparency about Northeast Asia's navies' spending habits and strategic doctrine.

These worries are compounded by the incentives of nations astride the energy sealanes to utilize their rising geostrategic leverage by expanding their own naval forces. Indonesia, for example, increased defense spending by more than 73 percent over the 1990-95 period, with a major share of the funds devoted to purchasing the entire former East German navy. It has also attempted to restrict avenues and methods of routine naval passage through the Indonesian archipelago, a move that the US Pentagon has resisted. Singapore and Malaysia, also astride the sealanes, have likewise expanded their naval spending, buying submarines and anti-ship missiles such as the Harpoon and the Exocet.

Asia-Middle East Linkages

A second security issue raised by changing Northeast Asian energy supply patterns is that of deepening political-economic ties between Asian energy importers and the Middle East. The sensitive questions for the United States in this regard relate especially to East Asian ties with nations believed to be sponsoring terrorist activities, including Iran, Libya, and Iraq, as well as those like Iran and Pakistan that are believed to be pursuing nuclear weapons programs and long-range missile development.³⁹ The central concern is obviously technology diffusion, and the concern is that deepening energy interdependence will make sensitive arms for energy deals more likely.

Northeast Asian regional energy shortages and rivalries for supply could also aggravate underlying geopolitical tensions within the region. History has often demonstrated that peace in the Northeast Asian Arc of Crisis is fragile and easily disturbed. Given the intersection of large, heavily armed nations and the traditionally complex politics of the Korean peninsula, it is not surprising that there were seven major international conflicts and several

violent internal revolutionary struggles in the region during the first half of this century alone.

Offshore Resource Issues

Tensions over energy could exacerbate this fragile regional peace in many ways. Ambiguities in application of the new Law of the Sea Treaty could trigger any one of several scenarios for conflict over sea-bed resources among China, Japan, and the two Koreas, if major discoveries are made. Japan and South Korea had confrontations over Tokdo/Takeshima Island in the East/Japan Sea in April 1996, while Japan and China have had a series of subtle skirmishes in the Senkaku/Diaoyutai islands southwest of Okinawa, directly related to the possibility of offshore oil.⁴⁰ In late December 1995, for example, a Chinese drilling ship explored for oil for several days before withdrawing. In early August 1996, Japanese nationalists attempted to register a lighthouse in the Senkakus, reinforcing long-standing Japanese territorial claims, before being quietly discouraged by the threat of large-scale Taiwanese protests.

With 10 to 100 billion barrels of oil estimated to lie beneath the East China Sea and with major unexplored areas on the Japanese-claimed side of maritime boundaries whose geology resembles that of the North Sea, there is ample possibility for major future energy-related tensions, unless cooperative solutions are found.⁴¹

Asia's Energy Future and Environmental Security

Economic growth in Northeast Asia over the past two decades, much of it involving heavy industrialization in some of the most crowded lands on earth, has produced environmental destruction so severe that it can be genuinely considered a security threat. Perhaps the most serious environmental consequence of rapidly rising energy consumption in Northeast Asia has been acid rain. Seventy-five percent of China's energy is derived from coal, whose burning is the principal cause of acid rain. Widespread coal consumption already blackens the skies of Seoul, Korea; Japan's western sea coast; and vast areas of northeastern China. Northeast Asian energy consumption also may be compounding

problems of global warming. China is already the second largest producer of greenhouse gases in the world, as has been noted, and forms of energy consumption that intensify this problem are rising rapidly.

Nuclear Power: Emerging Insecurities?

A final complex of very real security issues flowing from northeast Asia's emerging energy profile relates to nuclear power. Given the region's rapid economic growth, energy-intensive industrial structure, and lack of domestic energy resources, nuclear power has long had a powerful logic, especially for technocrats and electric utilities, groups that held great influence in local political systems. While most Western nations (except for France) have sharply curtailed their nuclear plans in the wake of Three Mile Island and Chernobyl, Northeast Asia has persisted with its ambitious nuclear programs.

As suggested in Table 3, it appears likely that the recent divergence of Western and Northeast Asian trends with respect to nuclear construction will persist or intensify over the coming 15 years. The US Department of Energy projects that 48 percent of new global nuclear capacity completed by 2010 will be in East Asia, overwhelmingly in Northeast Asia.⁴² Meanwhile, the US and Britain will be reducing capacity.

Security dilemmas flowing from the increasing scale and economic role of nuclear power usage in Northeast Asia arise at several levels (see IGCC Policy Paper 37). At the plant level, there are the dual questions of operational safety and adequate storage. Operational safety does not appear likely to be the pervasively

troubling question that it has been for the past decade in Eastern Europe. Yet the prospective broadening of nuclear power usage to remote areas of China, and the localization of many aspects of nuclear plant production in both China and Korea as their nuclear commitment grows, will require rigorous training and new oversight mechanisms. Nuclear storage, however, could be a serious problem, given the projected scale of the region's nuclear power commitment. Reprocessing could be a solution to the storage problem for some nations like Korea, but it would raise possible long-term proliferation dangers of its own.

A second level for considering nuclear security issues is the national dimension, and the crucial question of non-proliferation. There is no necessary link between broad civilian use of nuclear power and the proliferation of nuclear weapons, but there are potential linkages, such as the accumulation of so-called "super-plutonium" in fast-breeder and some other reactors, that suggest the need for regional safeguards.⁴³ Proliferation dangers depend very much on the sort of reactors that are built and the form of supervision provided for spent fuel, so they can be obviated without inhibiting the peaceful use of nuclear energy per se.

The final level of security concerns is international. One danger is that mutual anxieties and paranoid reactions, naturally pronounced in a conflict-prone region such as Northeast Asia, could feed on one another. In doing so they could generate, at the extreme, a nuclear arms race in the region as plutonium stockpiles generated by civilian nuclear programs build up. Nations increasingly may turn to reprocessing to consume excess spent fuel, and mutual suspicions regarding the nuclear intentions of neighboring states begin to deepen.

Table 3: The Growth of Global Nuclear Capacity: Northeast Asia's Key Role

Country	1992 Capacity	Increment by 2010	
		Lower Reference Case	Higher Reference Case
1. Japan	34.2	+11.5	+22.5
2. France	57.7	+4.4	+12.1
3. Korea (North and South)	7.2	+7.7	+11.2
4. Canada	14.6	+1.8	+8.3
5. Russia	17.8	+1.1	+7.5
6. China	0.3	+2.4	+3.9
7. Brazil	0.6	+2.5	+3.3

Source: U.S. Department of Energy, *International Energy Outlook*, 1994 ed., p. 37.

Notes: Figures are for projected operable nuclear capacity, expressed in net gigawatts. Korean figures adjusted to take account of October 1994 U.S.-Korean nuclear capacity by 1.1 net gigawatts beyond previous projections.

A second international danger is the prospect of benign neglect, of the need for new Asian nuclear regulatory frameworks in a period of time when other industrialized nations' interest in civilian nuclear issues is waning. Many groups in the United States, in particular, may not see the need for activism in American nuclear diplomacy toward Northeast Asia, in actively supporting important multilateral initiatives like the Korean Energy Development Organization (KEDO), or in actively pressing for the establishment of new multilateral bodies analogous to EURATOM to monitor reactor safety and plutonium usage in Northeast Asia. Subtle American initiative and involvement, in the spirit of two-way dialogue, may be crucial to the success of such bodies.

Conclusion

Energy, clearly, can be a double-edged sword, especially in a conflict-prone world of fragile or non-existent regional institutions such as in Northeast Asia. Rising energy demand can provoke fears of shortage and intensify geopolitical rivalries that are never far beneath the surface in that volatile region. Energy demand can create new international economic realities, such as deepened Asia-Middle Eastern relations, that have their own potentially unsettling security consequences. Demand increases can promote reliance on forms of energy like nuclear power that raise security concerns of their own.

While energy generates the potential for increased tensions, it also provides a potential field for cooperation. Resource development projects are by nature large, complex, and capital intensive. They lend themselves to multiple participants to reduce risk, and cross-national cooperation is especially logical in Northeast Asia, given the contrasting resource endowments of several large energy importers (Japan, Korea, and Taiwan) and potentially major exporters, especially Russia and China.

Multilateral energy cooperation in Northeast Asia could also be important because of its political benefits, separate from its considerable economic merits. It could be an uniquely constructive form of confidence-building measure among nations long estranged, helping to defuse old tensions. Energy might also play a key role in finally creating true community among the fractious nations along the Northeast Asian Arc of Crisis.

Endnotes

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2. On general energy and security linkages, see Robert Keohane and Joseph Nye. *Power and Interdependence*: as well as Nye and David Deese (editors). *Energy and Security*.
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18. *Asahi Evening News*, November 11, 1994.
19. *JAMA Forum*, March, 1995, p. 15.
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21. *Financial Times*, May 24, 1993. As much as 14 million tons of LNG will be produced annually from the field for a 30-year period.
22. See, for example, Daniel Yergin and Thane Gustafson. *Russia 2010*.
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24. On prospects for energy cooperation between Japan and Russia, see Kent E. Calder. *The United States Japan and the New Russia: Evolving Bases for*

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 27. International Energy Agency. *World Energy Outlook*, 1994 edition, p. 71.
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 29. Ibid.
 30. See Fesharaki et. al., eds. *Pacific Energy Outlook*, p. 70. By narrower Western definitions, Chinese reserves are much smaller, but still an impressive 200-300 million tons.
 31. Ed. Note: See IGCC Policy Paper 19.
 32. *New York Times*, December 7, 1994.
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 34. Fereidun Fesharaki et. al., "Energy Outlook to 2010," *Analysis from the East-West Center*, No. 19, April, 1995, p. 3.
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 36. Far East Economic Review. *Asia Yearbook*, 1994 edition, p. 53.
 37. International Energy Agency. *World Energy Outlook*, 1994 edition, p. 194.
 38. See Kent E. Calder. *Pacific Defense*, pp. 60-61.
 39. See International Institute for Strategic Studies. *The Military Balance*, 1990-1996 editions.
 40. On proliferation issues, see Leonard S. Spector and Mark G. McDonough with Evan S. Medeiros, *Tracking Nuclear Proliferation*. Washington, D.C.: The Carnegie Endowment, 1995.
 41. See, for example, *New York Times*, May 19, 1996.
 42. Ibid.
 43. US Department of Energy. *International Energy Outlook*, 1994, ed., p. 39.
 44. On the specific dangers, see Selig S. Harrison (editor). *Japan's Nuclear Future: The Plutonium Debate and East Asian Security*. Washington, D.C.: Carnegie Endowment for International Peace, 1996.

OIL MARKETS AND ENERGY SECURITY IN NORTHEAST ASIA

by Fereidun Fesharaki

Energy security was a buzz word in the late 1970s and early 1980s. As the real price of oil declined and non-OPEC supplies became plentiful, the energy security concept died a quiet death. Then came the big turnaround: By the late 1980s, world energy demand began to exceed the pre-oil price shock demand and by 1996, the demand for all energy sources in general and oil in particular, was far above historical rates. The spectacular economic growth in Asia was followed by an unprecedented growth in energy demand. Since the early 1990s, Asia has become the engine of global oil demand growth and the most important buyer of OPEC oil. This new situation has given rise to a new set of energy security arguments over rising demand in Asia, potential global rivalry between the consumers in Asia and the Western economies, as well as the increasing importance of the Middle East in the global energy arena. The new thinking has been well articulated by Kent Calder in this paper. IGCC Policy Papers 36 and 37 contain detailed discussions of the energy supply and demand in the region.

When we talk about energy security in general or oil supply security in particular, what do we mean? Should we be concerned about not having enough oil to meet the region's needs? The answer to the question is rather simple. Oil and other energy sources may someday run out, but not in the near future. The breakthroughs in technology have cut the cost of exploring and developing oil significantly. Today, at \$15 per barrel, oil production is economical in more than 90 percent of the world.¹ New technologies, deregulation, and privatization have set off an avalanche of capital directed towards attractive deals. Who would have believed that Norway would export more oil than Iran or Kuwait, or that the North Sea oil production would come close to that of Saudi Arabia? Over the next 15 years and possibly much longer, resource supply issues are not a cause of concern. On the demand side, the massive Asian growth will make up 50-60 percent of new demand estimated at 15 to 20 million b/d. Between 1996 and 2010, OPEC oil production capacity can easily rise by 15 to 20 million barrels per day (b/d) while non-OPEC oil supplies can easily grow by an additional 10 million b/d. There are ample supplies of oil. As a result, it is highly unlikely that large price increases will be seen

in the market. If for some reason prices increase due to political turbulence, it will not last long, as higher prices should unleash significant new production—the market has recognized the value and importance of new capital and technologies. Even in somewhat paranoid Asia, there is a clear understanding that the resource base is there and, if you can afford it, there always will be oil to buy. Fears of political interruption in Saudi Arabia affecting oil markets also are exaggerated. Any radical government there would want more money and would sell oil cheaper and on easier terms to increase its volume sold and revenue stream. It is indeed the conservatives who hold on to the rules of OPEC, not the radicals.

The key issue in the supply of oil is the concentration of proven reserves in the Persian Gulf. Here, there are low populations, but higher prospective economies which have no manpower to defend themselves. Abu Dhabi, with an ethnic local population of some 100,000 people has as much proven oil reserve as Iran, with a population of 70 million, and more oil reserves than Russia, Central Asia, and Caucasia combined! Are these nations reliable suppliers of oil to Asia?

The oil market for totally economic reasons has divided into several zones. The Pacific zone, which includes large flows of oil from the Middle East to Asia; the Atlantic zone including Africa, Europe, and East Coast of the United States; and the Caribbean zone involving the Gulf Coast of the United States, Latin America, and Canada. This demonstrates the new order. Persian Gulf exports of oil will decline in absolute terms for destinations to the United States and Europe for an indefinite future as these regions obtain more of their oil from within their own zone. Instead, Persian Gulf supplies will increasingly head towards Asia as the natural market for their fuels. Asian dependence on Persian Gulf crude will rise concurrently with the decline in American/European dependence. The new East of Suez zone will dominate the world oil market in the next 10-15 years.

How dangerous is the emergence of the new Asia-Middle East zone? From an economic perspective, this is a natural evolution which must be encouraged, not discouraged. It is after all, the market forces which have produced these zones, not government policies.

Asian nations have a good understanding of the new structure. Is there rivalry amongst them? Yes, there is, but a sensible rivalry, not a destructive one. There is no stampede to sign

contracts at any price or to offer unjustifiable terms. In today's transparent oil market, prices are based on futures markets or other formulas. Indeed, no major producer in the Persian Gulf sets its own prices anymore. The Asian rivalry based on economic logic is to form strong bonds of economic and energy relations with the Middle East and to create interlinkages to ensure a smooth flow of oil. This is a two-way street. The key Mideast suppliers recognize Asia as their best market and try to ensure good credibility and consumer satisfaction. The Asians try to negotiate the best deals, but do not wish to be dependent only on one country.

U.S. sanctions against Iran and Iraq are challenged by the new Asian-Middle East connection. Asian countries are keen to enter exploration and refining investments in the Middle East. The sanctions have provided a windfall for Malaysia and China, followed by India and Pakistan. Malaysia now has one of the best organized state oil companies in the world: Petronas. Petronas has been given oil exploration acreage in Iran previously reserved for American firms. Many more concessions are expected for Malaysia as well. China's state oil company was the first company to sign a new contract for oil exploration in Iraq and approved by the Iraqi Parliament. Once the sanctions on Iraq are lifted, there will be a flood of Asian oil companies followed by the Europeans. Just as in the case of sanctions upon Vietnam, American firms are the losers. Conversely, Mideast nations have targeted Asia for investment in refining and marketing to ensure a reliable outlet for their oil. Saudi Arabia has currently over 650,000 b/d of joint venture capacity in South Korea and the Philippines, as compared to 600,000 b/d in the United States and only 100,000 b/d in Europe. Saudi investments in refining in India and China are a certainty. Kuwait, Abu Dhabi, Oman, and Iran also have ambitious investment plans in Asia. These are rational policies designed to enhance economic linkages. It is something that the American and European firms would do if economic circumstances permitted.

What about internal Asian rivalries over access to offshore resources or competition for access to the Sakhalin Island or Spratly Island oil reserves? First, Asia has very few large structures containing oil reserves. The potential of the Spratly and Sakhalin Islands is overrated. Although no one really knows how much oil is in the Spratly Islands, we expect to see only minor reserves. In all of the South China and East China Seas, the peak production for China

and Vietnam is estimated at 250,000 b/d each—barely enough to supply one year of incremental Chinese demand.² Even then, the cost of production will have been \$5 billion of capital and 15 years of exploration. There is no reason to believe that a Middle East is hiding under the Spratlys. Sakhalin Island can produce potentially 150,000 b/d in the next century. All this new oil will still not be enough to supply the Russian Far East itself, which has an oil demand of 250,000 b/d. Any conflict between any of the claimants to the seas around the Spratly Islands will be a result of muscle flexing and sovereignty arguments, but not motivated by a need for energy resources.

Gas potential in the region is tremendous. Today, gas provides only nine percent of regional energy supply, compared to 23 percent for the rest of the world. It is only natural that Asian gas utilization will rise to fuel the ever-increasing heavy appetite. Moreover, natural gas offers an environmentally friendly fuel of great value to polluted Asian cities.

However, gas resources in Asia are not always near the sources of consumption. Reserves are concentrated in Indonesia, Malaysia, Australia, and Burma, which are net exporters. The major consumers in Japan, Korea, Taiwan, Thailand, and China face serious shortages of gas supplies. There have been many proposals for pipelines put forward. These pipelines would bring gas from Central Asia and Russia to East Asia. Gas can also be transported on ships as liquefied natural gas (LNG) as discussed by Valencia and Dorian in IGCC Policy Paper 37. Many are not economical. Heavy discussions centering on these pipelines originated from interested companies wishing to drum up new businesses for themselves and not because of economic logic. In Asia, there is only one small existing pipeline linking Malaysia with Singapore. The only new “real” pipeline is one from Burma to Thailand, which is scheduled to be completed in 1998. At the same time, Japan, Korea, and Taiwan dominate 80 percent of LNG trade in the world. Clearly, the immediate future is with LNG, not pipelines and the new source of LNG are all in the Persian Gulf: Qatar, Oman, Yemen, and Abu Dhabi. The “pipe dreams” must wait another 10-20 years before their time comes.

The only actual security risks raised by increased energy demand in Asia involved the security of shipping routes. In 1996, 7.5 million b/d of oil flowed from the Persian Gulf to Asia. By 2010, this will increase to some 19 million

b/d. Today, the United States has a convergence of three key interests in the Middle East: strategic/political, non-oil trade, and oil supplies. By 2010, the key interest will only be strategic as the region’s oil supplies to the United States become less important and as economic ties between Middle East and Asia will surpass those of the region with the United States. Will the domestic political imperatives allow the United States to sustain its military presence in the Middle East or in East Asia? The US forces deployed in East Asia are responsible for policing the sea lines of communications (SLOCs) in the Indian Ocean and all the way to the Middle East, as well as in the Asia-Pacific. If the United States is not there, who will fill the vacuum? Russia? China? The small navies of Iran and Iraq? Ensuring security of shipping is a serious and complicated issue, requiring regional and international efforts. This is the most serious energy security problem facing Asia and the Middle East.

The international oil market does work, and the economic pragmatism of the nations of Asia has overcome their energy paranoia. All this should mitigate the fears about Asian energy security problems. If transportation of tankers is secured, other problems become manageable.

Endnotes

1. The technological advances have meant that even at low oil prices, resources all over the world can be developed. Today in the Middle East, cost of production is very low. However, outside of the Middle East (Asia, Europe, Africa, USA, Latin America) at a price of \$15 per barrel, new discoveries are economical. Only in very harsh Arctic areas or very hostile regions far from markets is \$15 per barrel not economical.
2. After 15 years and \$5 billion in offshore development in Vietnam and China, maximum production in each area is estimated at 250,000 b/d each. China has already reached that although its production is expected to decline. Vietnam produces 150,000 b/d, but that is expected to go up to a maximum of 250,000 b/d. History has shown that huge structures and big oil structures in offshore China and Vietnam are unlikely. At best, it will be a small field, unlikely for a giant oil field to be hidden there.