ENERGY SECURITY CONCERNS OF CHINA AND ASEAN: TRIGGER FOR CONFLICTS OR COOPERATION IN THE SOUTH CHINA SEA?

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Over the past few decades, China and some ASEAN countries have experienced profound economic and social transformation. It is assumed that this region will continue to enjoy rapid economic growth, giving rise to fears that energy problems, including energy shortage and energy-related CO_2 (carbon dioxide) emissions, will worsen.

The South China Sea, as host to some of the busiest shipping lanes in the world, is vital to the economic prosperity of China and ASEAN countries, and is thought to contain significant oil and natural gas, which the littoral states are eager to develop. As China emerges as an increasingly large gas consumer, its interest and incentives in developing energy resources in the South China Sea has also increased. Southeast Asian countries, on the other hand, are also turning to cleaner-burning gases to generate electricity. The biggest concern is that the economic recovery, rapid growth and a resurgence of strong demand for energy in Asia will push China and related ASEAN countries into conflict in the South China Sea.

The tension between China and related ASEAN countries over disputed claims in the South China Sea is one of the reasons contributing to the region's uneasiness over China's claim of 'peaceful rise'. China's recent expansion of naval facilities in Hainan, and some related ASEAN countries' repeated requests for outside big powers' intervention in the South China Sea issue raise concerns that the tension might develop into conflicts. Although it would be wrong to exaggerate the possible conflicts, China and ASEAN countries must objectively identify energy problems as the source of these conflicts and address them through joint cooperation and multilateral regional institutions.

Economic Growth and Energy Demand

Energy Demand Drivers

Population and GDP growth are assumed to be the most significant drivers of energy demand in this region. In 2007, China's population was 1.31 billion and is expected to reach 1.43 billion in 2020. Between 1990 and 2007, Southeast Asia's population grew at an average rate of 1.5% per annum (reaching 563 million), a level that far exceeds that of the European Union.

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Essentially all of the increase in the population of these countries is likely to occur in urban areas, while the population of rural areas is expected to decline over the period (see Table 1). The population will become increasingly wealthy, urban, and mobile. This phenomenon will influence the growth in energy consumption at the aggregate level, as well as the energy structures, and divert the direct use of coal and biomass toward clean and refined fuels such as electricity and gasoline in the residential, commercial, and transport sectors.

Table 1 Population of Urban and Rural Areas
(million; %)

	Urban		Rural	
	2005	2025	2005	2025
China	531.8 (40)	822.2 (57)	784 (60)	623.6 (43)
Indonesia	107.2 (48)	178.7 (66)	115.5 (52)	92.5 (44)
Malaysia	17.1 (68)	27.2 (80)	8.3 (32)	6.6 (20)
The Philippines	52.1 (63)	86.4 (74)	31 (37)	29.5 (26)
Thailand	20.7 (32)	29.1 (43)	43.5 (68)	39.7 (57)
Viet Nam	22.2 ((26)	40.5 (38)	62 (74)	65.9 (62)

Source: APEC Energy Demand and Supply Outlook – 4th edition 2009, Asia Pacific Energy Research Centre, www.ieej.or.jp/aperc

Over the past decades, China and ASEAN have experienced profound economic transformation. Although this region has been affected by the global financial crisis, it is assumed that if energy supplies are abundant enough, this region will continue to enjoy economic growth and progress over the long term, especially for some emerging economies. China and Vietnam are expected to continue to grow faster than other economies in this region, followed by Indonesia, the Philippines, and Malaysia. China is projected to grow at an average annual rate of 7.1% per year from 2007 to 2020, and 4.7% from 2020 to 2030. In 2008, the GDP of ASEAN countries approached $2.8 trillion. It is anticipated that ASEAN's GDP will grow at 4% per year from 2007 to 2015, and 3.7% per year from 2015 to 2030.[1]

The expansion of the transportation sector, especially the growth in the number of motor vehicles, is another driving factor for increasing energy demand. According to the figures provided by the Institute of Energy Economics in Japan (IEEJ), automobile ownership in China rose from 2 million in 1980 to 42 million in 2007, and is estimated to increase to 123 million in 2020. During the same period, automobile ownership in some ASEAN countries is also expected to increase dramatically (see Table 2).

[1] *World Energy Outlook 2009*, IEA, www.iea.org

Table 2 Automobile Ownership
(Unit: millions of vehicles)

	Actual		Forecast		
	1980	2007	2020	2030	2035
Asia	48(19.8)	195(53.7)	346(83.4)	520(117.9)	621(137.1)
China	2(1.8)	42(31.8)	123(86.2)	232(158.4)	296(202.1)
Indonesia	1(8.7)	8(34.1)	15(60.1)	26(97.1)	34(123.3)
Malaysia	1(65.2)	8(321.7)	12(387.7)	14(410.2)	15(414.0)
Philippines	1(17.7)	3(33.1)	5(49.8)	9(71.1)	11(85.6)
Thailand	1(18.8)	10(150.7)	18(258.5)	24(348)	29(404.8)
Vietnam	0(4)	1(7.9)	1(15)	2(24)	3(30.1)

Note: Figures in parentheses indicate vehicles per 1,000 population.
Source: Institute of Energy Economics, Japan, December 2009.

Energy Demand

As the population and economies grow, energy demand also rises. According to the International Energy Agency (IEA), primary energy demand in Southeast Asia is projected to increase from 513 million tons of oil equivalent (Mtoe) in 2007 to 903 Mtoe in 2030, constituting an average growth rate of 2.5% per year. Southeast Asia's share of global primary energy demand is estimated to rise from 4.3% in 2007 to 5.4% in 2030 (Table 3).[2]

Table 3 Primary Energy Consumption
(Unit: Mtoe)

	Actual		Forecast		
	1980	2007	2020	2030	2035
Asia	1,051(16.1)	3,554(32.1)	5,017(37.1)	6,359(40.4)	7,084(42)
China	419(6.4)	1,765(15.9)	2,539(18.8)	3,161(20.1)	3,451(20.4)
Indonesia	26(0.4)	138(1.2)	226(1.7)	321(2)	378(2.2)
Malaysia	11(0.2)	70(0.6)	97(0.7)	126(0.8)	144(0.9)
Philippines	13(0.2)	32(0.3)	58(0.4)	91(0.6)	112(0.7)
Thailand	11(0.2)	86(0.8)	145(1.1)	200(0.3)	234(1.3)
Vietnam	4(0.1)	31(0.3)	66(0.5)	114(0.7)	154(0.9)

Note: Figures in parentheses indicate percentage shares of total world energy consumption.
Source: Institute of Energy Economics, Japan, December 2009, http://eneken.ieej.or.jp/en/

[2] "World Energy Outlook 2009", IEA, www.iea.org/weo/index.asp

By energy type, fossil fuels are likely to dominate energy demand for decades. Oil will remain the dominant fuel, with a share of 26% and 31% in 2035 in China and Southeast Asia respectively (Table 4). More than half of the oil growth will be derived from the transport sector due to continued motorization along with economic development. The other sectors, including agriculture and residential which will continue to use petroleum products such as kerosene and liquefied petroleum gas, are likely to contribute to the growth as well.

Table 4 Energy Structures of China and ASEAN

Primary Energy Demand	Mtoe					Share (%)		
	1980	2007	2020	2030	2035	1980	2007	2035
China								
Total	419	1,765	2,539	3,161	3,451	100	100	100
Coal	313	1,285	1,579	1,751	1,834	75	73	53
Oil	89	357	593	807	902	21	20	26
Natural gas	12	59	120	255	331	2.9	3.3	9.6
Nuclear	0	16	73	130	144	0	0.9	4.2
Hydro	5	42	70	80	80	1.2	2.4	2.3
Geothermal	0	-0.7	-0.4	0	0.4	0	0	0
Other renewables	0.3	17	104	138	159	0.1	0.9	4.6
ASEAN								
Total	72	387	628	897	1,071	100	100	100
Coal	3.3	76	132	206	272	4.6	20	25
Oil	57	175	245	301	334	80	45	31
Natural gas	8.3	115	194	294	358	12	30	33
Nuclear	0	0	0	7.1	9.5	0	0	0.9
Hydro	0.9	5.5	9.5	13	14	1.2	1.4	1.3
Geothermal	1.8	15	41	65	70	2.6	3.9	6.6
Other renewables	0	0.7	7	11	13	0	0.2	1.2

Source: IEEJ, December 2009, http://eneken.ieej.or.jp/en/

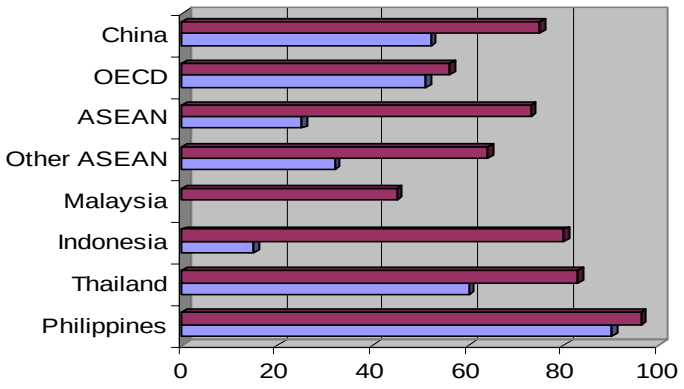
Energy Security Concerns of China and Southeast Asia

Increasing Gap between Supply and Demand

The top concern for the region's energy security is the widening gap between supply and demand. Southeast Asia has large reserves of oil and natural gas, and has long played an important role as an exporter of oil and gas. But this historical pattern is changing as the region's demand grows ever more strongly. The region's oil output has been falling steadily, since peaking at around 2.9 mb/d (million barrels per day) in 1996. According to *World Energy Outlook 2009*, oil production in Southeast Asia totaled 2.7 mb/d in 2008, and it is projected to drop to 2.4 mb/d in 2015 and 1.4 mb/d in 2030. Southeast Asia as a whole is currently a net oil importer, and individual countries' oil net-import dependence has been rising (see Figure 1). The region is

increasingly reliant on supply from the Middle East that is transited through the narrow Malacca Strait. In the case of natural gas, while the region remains an important supplier of liquefied natural gas, gas is also increasingly sought to support power generation and industry in domestic markets.

Figure 1 China & ASEAN oil net-import dependence (%)



Source: Asia Pacific Energy Research Centre, www.ieej.or.jp/aperc

Thus, most of the countries in this region are expected to show rising levels of oil and gas imports. It is predicted that from 2005-2015, China's oil imports will increase from 137 Mtoe to 487 Mtoe, an average annual increase of 5.2%; Indonesia's oil imports are expected to increase from 12 Mtoe to 67 Mtoe, an average annual increase of 7.1%; and Vietnam's oil imports are expected to increase to 6.6 Mtoe, making the country a net oil importer.[3]

Security of Sea Lanes

Connecting Northeast Asia to South Asia and the West Pacific, Southeast Asia encompasses all of China's energy-shipping routes from the Middle East, Africa, and Latin America. China is dependent on at least four sea-lane routes in Southeast Asia: first, from the Middle East and Africa through the Malacca Strait and the South China Sea to China for tankers under 100,000 tons;[4] second, from the Middle East and Africa through the Sunda Strait and then the South China Sea to China for crude

[3] *APEC Energy Demand and Supply Outlook 2009*, Asia Pacific Energy Research Centre, www.ieej.or.jp/aperc

[4] The 600-mile long Straits of Malacca is the main corridor between the Indian Ocean and the South China Sea. The major sea lanes used by tankers from the Middle East are the Straits of Malacca and the Singapore Strait: around twenty-six tankers, including three fully loaded supertankers heading for Asian ports, pass through the Singapore Strait daily. Because this strait is relatively shallow, only 23 meters deep at most points, the International Maritime Organization requires an under-keel clearance of 3.5 meters for ships transiting the straits, which translates to ships of at most 200,000 deadweight tons.

carriers under 100,000 tons;[5] third, from Latin America and the South Pacific through the Philippines Sea and the South China Sea to China; fourth, an alternative route from the Middle East and Africa through the Lombok Strait to the Makassar Strait or Maluku Strait and then the Philippines Seas to the West Pacific and, finally, to China.[6] Among these shipping routes, the most vital sea-lane is the Straits of Malacca. In this strategically significant region, China's energy security suffers from gaping vulnerabilities due to its excessive dependence on this one particular bottlenecked sea lane.

Most of China's imports and exports go by sea, particularly trade with the EU, the Middle East, and Africa, which has to travel through the Malacca Straits before entering the South China Sea. Even China's crude imports shipped from Venezuela and South American countries have to pass either through the Philippines archipelago or between the Philippines and Taiwan (Luzon Strait). The rest of China's crude imports have to follow the route of the Indian Ocean through the Straits of Malacca. By 2006, the shares of China's crude oil imports from the Middle East and Africa constituted 45% and 32%, respectively, of total oil imports, and it is predicted by the IEA that the proportion of China's oil imports coming from the Middle East will rise to at least 70% by 2015.[7]

Given that oil is intimately related to China's economic development and sociopolitical stability, and that most crude oil imports are from the Middle East and Africa and have to pass through the Straits of Malacca, the importance of this chokepoint does affect China's sea lanes of communication. In this respect, the Chinese government has specific concerns relating to physical interruptions of oil supply and price. In the event of a temporary disruption in the supply of oil from overseas at the same time as a sudden hike in oil prices, China could well find itself in the same predicament as Japan in 1973 when the oil crisis put a stop to its high economic growth.

The Straits of Malacca is critical to the energy security of Southeast Asian countries too, given increased demand for imported gas and oil, most of which is expected to come from the Middle East. In addition to this, the Straits of Malacca and the Sunda Strait also carry a significant amount of container traffic: large ports sit astride both of these sea lanes. The ports that lie along the Malacca and Singapore straits include Singapore as well as Malaysia's primary ports, Port Klang, and Tanjung Pelepas. In Indonesia, Tanjung Priok sits astride the Sunda Strait. Singapore, of course, is a major transshipment hub that overlooks the main east-west route within the global hub and container network. In this respect, piracy, terrorism, or any other

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[5] Located between Java and Sumatra, the Sunda Strait is 50 miles long and is another alternative to the Straits of Malacca. Its northeastern entrance is 15 miles wide; because of its strong currents and limited depth, deep-draft ships of over 100,000 deadweight tons do not transit the strait, thus implying scant usage.

[6] The Lombok Strait in Indonesia is wider, deeper, and less congested than the Straits of Malacca. It separates the islands of Lombok and Bali. The minimum passage width in the Lombok Strait is 11.5 miles and the depths are greater than 150 meters. Most ships transiting the Lombok Strait also pass through the Makassar Strait between the Indonesian islands of Borneo and Sulawesi, which has a width of 11 miles and a length of 600 miles.

[7] IEA, *World Energy Outlook*, 2007.

disruption are major threats to the security of shipping in the sea lanes of Southeast Asia. China and Southeast Asian countries should be involved in regional scenario planning to address potential responses to security disruptions or environmental disasters affecting the Straits.

Climate Change

Climate change is likely to be another significant challenge confronting China and ASEAN countries. A number of countries in the region are heavily dependent on a single energy source to meet the bulk of their energy demands. As analyzed earlier, China's consumption of coal meets more than 70% of its total primary energy demand; for ASEAN countries as a whole, fossil fuels dominate the energy structures, and oil meets 45% of the energy demands.

The projected trends in energy demand mean that energy-related CO_2 emissions from countries in this region will continue to increase. As the world's largest coal producing and consuming country, China's CO_2 emissions reached six billion tons in 2007 and will possibly rise to nine billion tons by 2030; the CO_2 emissions of ASEAN 5 (Indonesia, Malaysia, the Philippines, Thailand and Vietnam) reached one billion tons in 2007 and are expected to rise to 1.5 billion tons by 2030.[8] According to the IEA, Southeast Asia's share of global CO_2 emissions will rise to 5% in 2030, up from around 3.5%. Southeast Asia has been responsible for 1% of the world's cumulative emissions since 1990, but due to the projected rapid growth in emissions in the region, the region's share of cumulative emissions is set to increase to 3.3% by 2030.[9]

Responses to Energy Security Challenges

Energy Conservation

Since 2004, China has been pushing forward its energy and economic transformation, calling for a shift from an oil-based, heavily polluted economy to one that is gas-based and cleaner. On November 26, 2009, China announced that it will lower its carbon emissions relative to the size of its economy by as much as 45% by 2020.[10] ASEAN countries have also taken 'green measures' to improve energy efficiency, promote renewable energy, and enhance mitigation and adaptation responses. Vietnam has been preparing energy efficiency and conservation laws since early 2008. Energy efficiency and conservation goals targeted a 3-5% cut in cumulative energy consumption between 2006 and 2010, and a 5-8% cut in cumulative energy consumption between 2011 and 2015.[11] Thailand has embarked on a pilot project giving tax privileges for energy conservation to owners of energy efficient buildings and factories.

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8 IEEJ, *Asia/World Energy Outlook 2009*, http://eneken.ieej.or.jp/en/report_detail.php?article_info_id-2927

9 *World Energy Outlook 2007*, IEA, p.563.

10 "China sets target for emission cuts", *The Washington Post*, November 27, 2009.

11 Shinji Omoteyama, "Energy sector situation in Vietnam", IEEJ: May 2009.

Energy Diversification

China and ASEAN countries are accelerating the diversification of energy resources in order to reduce oil dependence. Wider use of renewables including solar and wind power, nuclear power, and biomass fuels has been increasingly encouraged. In China, a Renewable Energy Law was adopted in February 2005 with the goal of diversifying energy supplies and alleviating both air pollution and greenhouse gas emissions. The National Development and Reform Commission has launched a program to increase the share of renewables in China's primary energy use to more than 18% by 2020 and more than 30% by 2050 through the commercialization of renewable technologies.[12]

In Southeast Asia, the overall share of renewables (including wind, solar and geothermal energy) in the energy mix is expected to reach 5% in 2030, up from just under 3% in 2007. In Indonesia, under its renewable energy program, the country aims to diversify its energy from the current mix — 42% oil, 35% coal, 21% gas and 2% renewable energy — to a more balanced combination of 20% oil, 33% coal, 30% gas, and 17% renewable energy by 2025.[13] Vietnam, under its National Energy Development strategy, aims to diversify into renewable energy resources, utilize them in remote areas, and increase the share of renewable energy to about 5% of total commercial primary energy by 2020, and 11% by 2050.[14] So far, the Philippines, Thailand, and Vietnam have included the introduction of nuclear power in their medium- and long-term power development plans, while Malaysia is looking at the possible deployment of nuclear power after 2020. Indonesia had plans to introduce a significant nuclear program but it was put on hold in July 2009.[15]

However, both China and ASEAN countries still face the challenge of energy insecurity in terms of energy diversifications. Given the systemic reliance on fossil fuels, especially oil and coal, the region is essentially 'locked in' to its use of such energy sources, making the challenges of adaption and diversification to alternatives like renewable energy especially problematic.

Supporters of renewable energy have listed the energy's multiple benefits, from the diversification of energy sources and reduction in carbon emissions to the development of green industries and jobs. But the potential of renewable energy to offset fossil fuel use is less impressive than what was claimed by many individuals in Southeast Asia. In many ASEAN countries, although there is potential for renewable energy development, the objective is mainly to make electricity more available to rural areas than to secure bulk power supply sources. Renewable energy sources,

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12 http://www.china5e.com/news/huanbao

13 "Improving Energy Security and Reducing Carbon Intensity in Asia and the Pacific, 2009", ADB, http://www.adb.org.Documents/Books

14 Ibid

15 "ASEAN officials meet discuss nuclear safety", *The Straits Times*, March 2, 2009.

particularly wind and solar, have yet to gain the confidence of some ASEAN countries. Solar energy has been widely recognized as having tremendous potential in the region, but its high capital cost could be a barrier. It appears that the activities such as establishing energy consulting centers focusing on renewable energy are still in the study stages. Renewable energy is thus unlikely to substantially increase its share in total Southeast Asia energy sources, especially given the uncertainties in the evolution of renewable energy technology and the choices among competing alternatives.

Nuclear energy can resolve energy shortage to a large extent. But there is considerable uncertainty about the prospects of nuclear power in Southeast Asia as there are many challenges to overcome. There are fears of radiation and accidents involving reactors that could have disastrous consequences in Southeast Asia. Other challenges include lack of financing, laborious site selection, insufficient safety and security regulations, and weak human resources and technological capability. According to IEEJ, although nuclear power is projected to start making a contribution to Southeast Asia's energy needs after 2020, only Vietnam, Malaysia and Thailand can achieve limited nuclear power generation capacity by 2030.[16]

In the case of China, its energy usage is projected to progressively shift away from its reliance on coal. The share of coal in its primary energy demand will decline from 73% in 2007 to 53% by 2035. In contrast, the oil share will rise from 20% to 26%, while the share of renewable and the share of natural gas will rise from 0.9% to 4.6% and from 3.3% to 9.6% respectively.[17] The government has embarked on an aggressive policy to increase gas use to help replace coal for energy generation, diversify overall energy use, and provide cleaner burning fuel for environmental needs.

China's oil expansion abroad is part of Beijing's broader strategy of investing widely to diversify its sources of imported energy and other natural resources. But its overseas projects there have been facing potential constraints and rising costs. The Asia Pacific Energy Research Centre (APERC) in Japan has created an index to compare the relative position of oil supply security in China, Japan, Korea, and the U.S. with respect to four factors (see Table 5).

[16] IEEJ, Asia/World Energy Outlook 2009, http://eneken.ieej.or.jp/en/report_detail.php?article_info_id-2927

[17] IEEJ, December 2009, http://eneken.ieej.or.jp/en/

Table 5 Oil Supply Security Index (%)

Countries	Equity oil ratio	Self-sufficiency ratio	Independence from oil ratio	Political stability of crude oil import sources	Oil supply security index
China	6.5	53	80	29	42
Japan	9.4	1	56	44	27
Korea	4	1	54	45	26
U.S.	38.2	33	33	32	41

Note: A higher OSSI value indicates higher relative oil supply security.
Source: Asia Pacific Energy Research Centre, Japan, 2008.

Table 5 shows that China and the U.S. have similar OSSI (Oil Supply Securities Index) levels, at 42 and 41 respectively, while Japan and Korea register almost the same level of OSSI at 27 and 26. China's higher OSSI value reflects its higher self-sufficiency ratio and lower dependence on oil compared with the other three countries. The contribution of equity oil ratio to the final OSSI is smaller compared with the other three factors. China's political stability index for crude oil import sources represents the lowest level among countries presented in Table 5. This is mainly because of a higher dependence on politically unstable countries such as those in Africa and the Middle East, suggesting that to ensure stable oil supplies, China may need to bear external costs.

Thus, China's oil insecurity has been increasing because of the relatively high political risks the economies from which China imports crude oil are experiencing. Presently, around 75% of China's oil imports come from the Middle East and Africa, both politically volatile areas.[18] China needs to place a high priority on getting as much of its future oil and gas from within its land, from offshore zones, or as close to home as possible. Thus, Southeast Asia has become an important player.

Since 2000, China has become Brunei's eighth largest consumer of crude oil. And in 2002 and 2006, Beijing signed major contracts with Indonesia and Malaysia respectively for the supply of liquefied natural gas.[19] China is also looking at increasing its energy imports from Myanmar to reduce its oil imports via the Strait of Malacca. In June 2009, an agreement was inked between Naypyidaw and Beijing for the construction of a twin oil and gas pipeline from the Bay of Bengal to Kunming in Yunnan province. While Myanmar will not supply its own crude oil to China through the pipeline, it will transport oil from the Middle East and Africa, bypassing the vital Straits of Malacca, through which nearly 80% of China's imported oil must pass.

[18] IEA, *World Energy Outlook 2007*, p.325.

[19] *The Straits Times*, October 23, 2009.

South China Sea Uncertainty

Energy Resources in the South China Sea

The South China Sea is a semi-enclosed area surrounded by nine states. It stretches 800,000 sq. km., with hundreds of features — outcroppings of rock and coral, islets, and islands — dotting the surface. It not only contains oil and gas resources strategically located near large energy-consuming countries, but is also the world's second busiest international sea lane that links Northeast Asia and the western Pacific to the Indian Ocean and the Middle East. More than half of the world's shipping tonnage sails through the South China Sea each year. Over 80% of the oil for Japan, South Korea, and Taiwan flows through the area. The unresolved maritime claims of China, Taiwan, Brunei, Malaysia, Vietnam, and the Philippines overlap, constituting roots for possible conflicts in this area. Uncertainty in relation to sovereign jurisdiction has turned commercial interest of international oil companies away from the region and hindered the exploitation of hydrocarbon and fishing resources.

Although no proven oil and gas reserves estimates are currently available, some optimistic estimates (including Chinese estimates) project that the South China Sea has greater gas than oil potential. One Chinese estimate suggests potential oil resources as high as 213 billion barrels of oil (bbl). Another more moderate Chinese estimate suggests that potential oil resources (not proven) of the Spratly and Paracel Islands could be as high as 105 billion bbl, while a 1993/1994 estimate by the U.S. Geological Survey claims the sum total of discovered reserves and undiscovered resources in the offshore basins of the South China Sea to be 28 billion bbl.[20]

Natural gas might be the most abundant hydrocarbon resource in the South China Sea. Most of the hydrocarbon fields explored in areas near Brunei, Indonesia, Malaysia, the Philippines, Vietnam, and China contain gas. As with oil, estimates of the South China Sea's natural gas resources vary widely. One Chinese estimate for total South China Sea natural gas reserves to be two quadrillion cubic feet, while another Chinese report estimates 225 billion barrels of oil equivalent in the Spratly Islands alone. Estimates by U.S. Geological Survey and others indicate that about 60% to 70% of the region's hydrocarbon resources are natural gas.[21]

Energy Rivalry and Cooperation in the South China Sea

China's emergence as an increasingly large gas consumer and the emphasis it puts on getting as much of its future oil and gas from as close to home as possible has pushed China's projections of the energy potential of the South China Sea to the upper range of estimates. From 2007 to 2008, China National Petroleum Corporation (CNPC) and China National Offshore Oil Corporation (CNOOC), which earlier joined the international liquid natural gas (LNG) market, began to buy LNG at international prices. Chinese national oil corporations have thus emerged as rivals for traditional LNG buyers.

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[20] Energy Information Administration, *Country Analysis Briefs, South China Sea*, March 2008, http://www.Z:\PRJ\NewCABs\V6\South_China_Sea\Full.html

[21] Ibid

China intends to expand its offshore energy search. Until a few years ago, the state-owned Chinese energy giants were discouraged from competing and CNOOC, China's third-largest oil and gas producer, had a monopoly of offshore work. This has changed and now all of China's oil and gas majors can bid for onshore and offshore projects. Since 2007, both CNOOC and China's biggest oil producer, CNPC, have been looking to the South China Sea to supplement declining onshore production. Both have also been building deep-water drilling platforms there.

Beijing draws a maritime boundary running from Taiwan southwestward along the coasts of the Philippines, East Malaysia and Brunei and then northward largely along the coasts of Vietnam. The Philippines, Malaysia, Brunei, and Vietnam have disputed this claim. While Beijing has shown a certain degree of flexibility by suggesting "shelving the disputes and working for joint development," China's maritime neighbors have been very assertive in contesting Beijing's sovereignty claims. As one study indicates, "although China has offered joint development to other claimants, its concepts of joint development seems to involve joint development of the producing oil and gas fields on other claimants' continental shelves — and then only after China's sovereignty has been recognized."[22]

Thus, China's position and suggestion have been criticized and contested by other claimants in the South China Sea. Vietnam is one of them, and its volatile relation with China has become a particular source of tension. Beijing and Hanoi reached an agreement in defining their disputed 1,300km-land border after former Chinese Premier Zhu Rongji visited Vietnam in December 1999. But no resolution was found over the two large islands groups — the Paracels (or Xisha and Zhongsha), over which China had military clashes with Vietnam in 1988 and 1992.

Factors for Possible Energy Conflicts in the South China Sea

China cannot give up its claims of sovereignty over these islands because they keep China's options open regarding resources, but neither can the related ASEAN countries. The Chinese government has for the first time told Washington that it views its claim to sovereignty over the South China Sea as part of its 'core interests,' putting the claim on par with Taiwan and Tibet.[23] These territorial disputes have the potential of escalating into larger regional and international conflicts, given a number of bilateral security commitments between regional states and big powers, such as that between the U.S. and the Philippines. In the case of such conflicts, "China's ability to use force would be constrained by the possible reactions of the U.S., Japan, and ASEAN, which would probably view such action as an attempt by Beijing to dominate the South China Sea."[24]

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[22] Zhao Suisheng. "China's Global Search for Energy Security: Cooperation and Competition in the Asia-Pacific", *The Asia-Pacific Journal*, Vol. 49-4-08, December 2008.

[23] "South China Sea part of core interests: Beijing", *The Strait Times*, 6 July 12, 2010.

[24] Zhao Suisheng, "China's Global Search for Energy Security: Cooperation and Competition in the Asia-Pacific", *The Asia-Pacific Journal*, Vol. 49-4-08, December 2008.

China and some Southeast Asian countries' claims for control of the South China Sea are not just about access to potential offshore gas, oil and fisheries resources. They also involve history and nationalism. However, the increasing demand for energy is a significant component of Beijing's and some ASEAN countries' South China Sea policies. In China, gas is surpassing dirtier alternatives as the fuel to cook and heat, and the fuel for transport. Aluminum smelters in Inner Mongolia are shifting to gas from crude oil, and power generators in East China have dumped oil for gas. It is predicted that China's gas use will increase from 59 Mtoe in 2007 to 120 Mtoe by 2020, at an annual growth rate of 5.6% (Table 6).

Table 6 Gas Consumption in China and Selected Southeast Asian Countries
(Unit: Mtoe)

	Actual	Forecast			Annual growth rate (%)			
	2007	2020	2030	2035	2007-20	2020-30	2030-35	2007-35
Asia	376	623	959	1,165	4	4.7	4	4.1
China	59	120	255	331	5.6	7.8	5.3	6.3
Indonesia	34	61	96	116	4.5	4.6	3.7	4.4
Malaysia	35	44	57	66	1.9	2.6	3	2.3
Philippines	3	9	16	20	8.8	5.7	4.5	6.9
Thailand	28	50	74	91	4.5	3.9	4.3	4.3
Vietnam	5	15	32	42	8	7.8	5.8	7.6

Source: IEEJ, December 2009, http://eneken.ieej.or.jp/en/report_detail.php?article_info_id=2927

ASEAN countries are also turning to gas in a big way to generate electricity, with the demand for gas increasing rapidly as well, especially in Vietnam and the Philippines. Hence, over the long run, gas is an important element of China's and Southeast Asian countries' overall energy needs. Although Indonesia and Malaysia are projected to remain net exporters of gas, their gas production is expected to remain broadly flat over the next decade. Thus the increasing demand for gas in Asia will also add to energy security concerns and push China and ASEAN countries into competition for gas in the South China Sea.

Enhancing Energy Cooperation in the South China Sea

The South China Sea is the most important conduit for China's energy security. The region not only covers all the energy-shipping routes for China's energy needs, but also offers an important source of clean and alternative energy for China and Southeast Asian countries. China's emergence as an increasingly large gas consumer and its emphasis on getting as much of its future oil and gas from as close to home as possible has increased its interest and incentives in developing energy resources in the South China Sea. ASEAN countries, on the other hand, are also turning to cleaner-burning gas to generate electricity and raise energy consumption efficiency. This

development creates possible conflicts as well as potential cooperation opportunities for the two sides in the South China Sea.

Given the importance and possible conflicts in the gas-rich South China Sea, China and Southeast Asian countries need to further enhance cooperation and forge a rational energy security partnership in general and maritime cooperation in particular. China and ASEAN signed the Declaration on the Conduct of Parties in the South China Sea (DOC), in which all signing parties pledged to seek peaceful resolution to disputes and conduct maritime cooperation in order to maintain regional stability in the South China Sea. China also signed the Treaty of Amity of Friendship and Cooperation with ASEAN in 2003. At the meeting of the ASEAN-China joint working group in Hanoi in April 2010, both sides reaffirmed their commitment to fully respect and realize the DOC in the South China Sea.[25] These indicate that "while predicting future Chinese actions is difficult, it would seem that China is willing to modify its historic claims in return for increased access to indigenous energy reserves."[26]

The prerequisite for China-ASEAN energy cooperation is mutual trust and understanding, particularly with respect to the South China Sea. China considers matters in the islands in the South China Sea as concerning sovereignty, national security, and territorial integrity. "While for some ASEAN countries, the contest to control energy and other resources seems to outweigh the considerations of territory,"[27] it is the energy potentials of the South China Sea that attract their interest in jointly developing energy resources with multinational oil companies.

In general, China's efforts to expand its offshore energy search have two-sided effects: on the one hand, Beijing may stiffen its sovereignty claims over the South China Sea, thus increasing competition with some ASEAN countries and other Asian energy-consuming giants like Japan, India, and South Korea. On the other hand, China might also increase its investment and technological commitment in energy areas in Southeast Asia, hence creating an opportunity to enhance energy cooperation with its neighbors. China's investment may spur growth in host countries, while consortium partners might enjoy expanded market opportunities in China. Ultimately, the concerted efforts among countries and firms within Asia and Southeast Asia should lead to greater energy supply security for both China and other Asian countries.

Clearly, energy cooperation between different parties could function as a confidence-building measure that prepares the ways for other steps, eventually leading to the establishment of official regional energy cooperation, in the form of an "East Asian Energy Community". From an economic perspective, energy cooperation can help countries involved to reach a better understanding of the real value of resources in the South China Sea. Individual countries would regard the energy

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[25] ASEAN, China confirm to observe DOC, http://news.gov.vn/Home/ASEAN-China-confirm-to-observe-DOC/20104/7005.vgp

[26] Zhao Suisheng, "China's Global Search for Energy Security: Cooperation and Competition in the Asia-Pacific", *The Asia-Pacific Journal*, Vol. 49-4-08, December 2008.

[27] Michael Richardson, "A southward thrust for China's energy diplomacy in the South China Sea", *ChinaBrief*, Volume viii, issue 21, November 7, 2008.

potential in the South China Sea from a wider regional perspective, rather than from an individual or nationalistic viewpoint. Moreover, cooperation could facilitate higher levels of financial investment on energy projects in this area, while attaining better economies of scale because of enhanced multilateral coordination and planning. From a security point of view, the advancement of mechanisms to develop resources jointly in disputed waters would create norms for subsequent territorial settlements. Cooperation between states and civil societies to reduce energy-related pollution and the emission of carbon dioxide would help facilitate exchanges leading to greater regional cooperation.

Although Asian nations have differing priorities, they face the same set of problems with regards to energy and the environment, with energy security the central issue. China and ASEAN countries can look at enhancing their energy cooperation in some specific or easy areas as a start, such as embarking on joint research, examining energy efficiency of existing technologies, and modifying consumer behavior in energy use. It is possible that through energy project cooperation, the most immediate obstacles posed by sovereignty in the South China Sea may be side-stepped or shelved.