

Chinese Perceptions of Energy Security and Strategy for the Future of Northeast Asia

Zhang Jianping, Director, Department of the International Economic Cooperation
Institute for International Economics Research
National Development and Reform Commission, China

Amid its approximately three decades of high-speed economic growth, China, with the beginning of the 21st century, began a process of heavy industrialization. After 2003, China fell into an emergency situation of shortages in coal, electric power, oil and transportation. The prices of oil, coal, electric power and the like have been rising continuously. Therefore, energy has become an increasingly obvious bottle-neck restricting the country's economic and social development. From now on China's energy security will have to navigate very difficult straits. The government has raised the significance of energy security problems to an unprecedented height. Sustainable development and effective utilization of energy are the basic requirements for implementing China's sustainable development strategies. Meanwhile, in the era of globalization, China is considering its own overseas energy strategy and seeking to find stable oil and gas supplies. Northeast Asia, as a potential major regional oil and gas supplier, is expected to play a very important role in China's energy security.

Part I. Basic Contents of and Prospects for China's Energy Strategy to 2020

In the period of the 11th Five-Year Plan, China's energy policy is being steered in a new direction. It has changed from the past emphasis on energy supply to an emphasis on energy efficiency and energy saving; from the past monopolistic style of energy management to a primarily market-adjusted one; and from the past stress on self-sufficiency to an energy supply balanced by the utilization of both internal and external resources.

1. General Development Goals for Energy

The general aim of energy development is to double energy consumption, in order to support the realization of a fourfold growth of the economy by the year 2020. The demand for primary energy should be kept to within 3 billion tons of standard coal (and 2.1 billion tons of standard coal in 2010). The proportion of coal within consumption should be kept to under 60%, as should the dependency rate of oil imports. The reduction in the rates of major incidents of pollution should be between 35% and 40%. Thus, a clean and secure energy supply system with a multilayered structure would be established and a new mechanism of sustainable energy development would come into existence.

2. The Priority on Energy Saving and the Advance in Efficiency in Energy Utilization

The new "National Energy Plan," promulgated in 2004, for the first time formally gave primacy to energy saving, the realization of the principle of making energy

conservation the top priority. At present, China's energy utilization rate is about 32%, and is more than 10 percentage points lower than the international advanced level. Energy saving and the reduction of energy costs is regarded as an important way to boost the benefits of economic growth. By 2010, the energy cost per 10,000 yuan (RMB) of GDP would decrease from the 2002 level of 2.68 tons of standard coal to 2.25 tons of standard coal, and in 2020 the amount would further drop to 1.54 tons of standard coal. The annual energy saving rate would reach 3% between 2002 and 2020. Meanwhile, the energy saving capacity would expand to 400 million tons of standard coal in 2010, and further to 1.4 billion tons in 2020, which is equivalent to the reduction of 21 million tons in sulfur dioxide emissions.

3. Adjustment and Optimization of the Energy Structure

China will stick to an energy strategy that has coal as its principal component, electric power as its central focus, and which realizes the full development of different types of energy including oil, gas and new energies. The country's energy structure is undergoing a further optimization process. At present, coal accounts for 70% of China's energy, so taking coal as the principal component is a practical requirement. However, once the annual production of coal reaches 2 billion tons, its exploitation will become increasingly difficult and the costs will rise. Thus, the main direction of development is to optimize the energy structure and actively develop oil, natural gas, liquefied gas, and nuclear power, as well as other renewable types of energy like hydropower, wind power, solar power and biomass power. Currently renewable energy in China only makes up 7% of the primary energy supply, with a less than 20% exploitation and utility rate in hydropower. Less than 2% of the installed capacity in power-generation is accounted for by nuclear power, but China has a plan to raise that amount to 40 million kilowatts in 2020, or 2.5 times the present level. It also plans to raise the proportion of power generated by renewable energy by 10% by 2010, and up to 15% by 2020.

4. Adjustment of Industrial Structure and the Phase-Out of High Energy Consumption Projects

China will abandon the old-fashioned way of development followed by those countries that preceded it in becoming developed, and whose industrialization process featured great expense and pollution. It is striving to work out a new route. The country is vigorously developing its new and hi-tech industries with lower energy consumption. It is taking economic measures to restrict the production and export of products with higher energy consumption and

which cause a great amount of pollution, and is also using its industrial policies to encourage the development of high-tech industries with energy-saving features and lower energy consumption, as well as lower levels of pollution. In this way, China may realize the optimization and upgrading of its industrial structure. In this way the 2010 target of a 20% reduction in the energy consumption per unit of GDP from its level at the end of the 10th Five-Year Plan period would be achieved. The country recently promulgated the "Interim Provisions on Promoting the Adjustment of Industrial Structure" and the "Guidance Catalogue for the Adjustment of Industrial Structure", placing all projects in the eleven high energy-consumption industries such as steel and electrolytic aluminum production, which consume excessive resources and energy, as well as cause severe pollution of the environment on the list for elimination. By rebuilding traditional production, China will find a way to develop high-tech industries with lower energy consumption, and thus to reduce energy wastage.

5. Utilization of Both the Domestic and Overseas Markets: Based Upon National Energy Exploitation and Participation in World Energy Development Cooperation

At present in China there is still potential in the areas of prospecting for and extraction of oil and natural gas, which should be further exploited. Owing to insufficient domestic resources, China is dependent on the international market for part of its oil and natural gas supply. One solution is to import resources via trade, while another way is to implement the strategy of "Going Abroad", participating in overseas oil and natural gas exploitation and setting up overseas bases for energy resources. To date, China's "Going Abroad" for oil has barely started, with just US\$6.7 billion of external investment, or less than 0.5% of the world total in 2004. The resulting oil share obtained by China's oil corporations amounted to only 17 million tons, which is too low when compared with the country's 120 million tons of oil imports in the same year. The target countries of China's "Going Abroad" strategy are diverse, but the recent focus has been on Russia, Kazakhstan and neighboring countries in Central Asia.

6. Accelerated Advancement in Energy Technologies

A thorough solution to the Chinese energy problem requires the updating of energy technology to the world level, the energetic development and spreading of energy saving technologies, mineral fuel cleaning and the technology for its effective utilization, as well as new energy sources and renewable types of energy. A new route of development in the energy industry is called for, that is founded on technological advances. The exploitation and saving of energy resources ought to be led by an emphasis on scientific and technological innovation. In addition outdated facilities, technologies and technicians ought to be replaced by advanced ones. China has become the second largest energy consumer in the world. A great number of its present energy technologies and facilities rely on imports. China's own development capability is very weak. In the future, while still importing technologies from abroad, China should stress independent development, and it should

give technological innovation top priority. China is going to increase inputs into science and technology, striving to accelerate the development of energy saving technologies and the spread of their use.

7. Further Diversification of Energy Sources and the Enhancement of Strategic Oil Reserves

Energy security plays a vital role in China's global strategy. China will establish long-term cooperative relationships with countries and regions such as Russia, Central Asia, the Middle East, Southeast Asia, Africa, and Australia. In 2003, China for the first time set up a national strategic oil reserve system, and marked out a total of four reserve bases in: Zhenhai District, Ningbo, Zhejiang Province; Daishan County, Zhoushan, Zhejiang Province; Huangdao District, Qingdao, Shandong Province; and Xingang District, Dalian, Liaoning Province. The first phase of construction received 6 billion yuan (RMB) of government appropriation, creating a crude oil reserve capacity of 14 days. According to estimates, 2008 will see strategic oil reserves reach a capacity of over 35 days.

8. Environmental Policy for Energy Resources

Environmental protection is a crucial constraint on energy development and utilization. For example, in the past, the pollution from the final consumption of coal received more attention than that resulting from the initial stages of coal-mining. The mining of every ton of coal took away 1.6 tons of groundwater resources as one of its costs. Damage done by coal-mining, such as surface collapse, liquid waste, exhaust gases and waste residues, exerted a grave influence on the health of residents in mining areas. In the future, China will strengthen its environmental protection, take the constraints of energy and the environment into full consideration, and alleviate the influences on the environment created by the energy production and consumption processes. It will strive to reach a basic realization of a sustainable development balance between energy and the environment by the middle of this century. Meanwhile, China is making efforts to implement the "Clean Development Mechanism" (CDM), and cut down on greenhouse gas emissions.

9. Energy Pricing, Fiscal and Taxation Policies

China should push forward with market reform of energy industries and energy management, expand the reforms in energy pricing, and fiscal and taxation policies, establish a rational pricing mechanism, improve energy efficiency and realize its market value via market mechanisms. The country should bring the adjusting role of the domestic market into full play, and improve the saving and efficiency rate of energy with a price leverage based on market demands. Energy imports are exempted from tariffs. The government is providing preferential taxation policies and grants for energy saving products and facilities. The pricing mechanism of refined oil should be fine-tuned, and the inverted relationship between the prices of crude oil and refined oil should be altered by the gradual integration of the refined oil price into the international market. Through the formulation of fiscal, taxation, and pricing stimulation, China can encourage not only the production, sale and

use of energy saving facilities (and products), but also the exploitation and utilization of renewable energy resources.

Generally speaking, Chinese energy policy will put its focus inside the national boundaries for a long period of time. At present, coal takes the principal position in China's energy structure, accounting for 70% of the national total energy consumption. The Chinese government will stick to its long-term guideline of balancing energy production, consumption and environmental protection, taking a supportive stance toward the development and implementation of clean coal technologies as one important strategy for the country. Nevertheless, China has a huge energy consumption volume, which means domestic resources are insufficient to meet market demand. Therefore, the government will encourage energy trade and the participation of competent enterprises into overseas energy development projects.

Part II. China's Consideration of Overseas Energy Strategy

China is a giant energy consumer, as well as an energy producer. Generally speaking, China resorts to domestic resources for resolving energy issues. Coal accounts for around 70% of the total energy production and consumption in China, 60% of oil consumption depends on domestic production, and hydropower and gas have a steadily rising proportion within the total production and consumption of energy. China's primary energy self-sufficiency rate was about 94% in 2004, with an external dependency rate of 6 percent. As oil is the main primary energy source dependent on international markets, China's external energy strategy has been developed with a focus on oil. In light of the growing demand for natural gas, China will rely more on international markets to seek gas sources. As for hydro-electricity, Northeast China has started to import electricity from Russia on a very limited scale, which has no significant impact on the overall external energy strategy of China. A countrywide integrated external energy strategy has not taken shape as yet due to the fragmented nature of energy management amongst the different sectors.

Considering that the Chinese government has not formally announced its strategy to capitalize on external energy, this paper sums up China's energy strategy goals based on its activities in the international oil market, i.e., being active in exploring overseas energy supply channels, implementing global energy strategies, and building a world-wide supply network by way of diversification and "Going Abroad."

1. Diversification Strategy: To Promote Diversification of Energy Development Cooperation and Energy Imports

Currently China relies on the Middle East for 75% of its oil imports. A strategy of external energy diversification is under way in China, shifting from the former "single-energy diplomacy." China's energy diversification strategy has come under the spotlight, with its competition with Japan over Russian oil pipelines revealed. In the past, China focused more on the Gulf region, South America and Africa, or on offshore exploration and exploitation, than

on Russian and Central Asian oil and gas resources. China missed the best opportunity to enter the Russian market as it expressed the opinion that the Russia-proposed oil pipeline-laying costs would be too high.

According to the forecast of the US's RAND Corporation, the ideal future oil security strategy for China should be to obtain one-third of its oil from each of the Middle East, Russia and Central Asia. That view doesn't take into account Africa and South America. At present a quarter of China's oil imports are from Africa. Its energy supply structure will take a new look at diversification in the future, incorporating the Middle East, Russia, Central Asia, Africa and South America. China is developing a global strategic energy plan, and within the latter geographical range priority will be given to Russia, Kazakhstan, Turkmenistan, Iran, Iraq, Sudan, Venezuela, and Indonesia, etc., to expand and strengthen oil and gas exploration and development by increasing output and share of reserves and building solid oil production bases.

Oil and gas cooperation will become a significant part of Sino-Russian economic and trade cooperation. Russia will give active consideration to extending its oil pipelines into China; it embarked on more railway trade in oil to increase its oil imports to China to 10 million tons in 2005 and further to 15 million tons in 2006; both parties have decided to expedite the development of a gas exploitation cooperation plan, too. In the Central Asian region, China has been in successful cooperation with Kazakhstan, with oil pipeline projects under construction. In Africa, it has teamed up productively with Sudan. China has begun to buy oil from Gabon, Egypt and Nigeria, etc., since 2004 and in the meantime signed oil agreements with Cameroon, and Equatorial Guinea, etc. Four countries in South America have been in close negotiations with China over energy investment. China has promised to invest US\$5 billion in oil and gas projects in Argentina over the next five years, and invest US\$8.5 billion in infrastructure and mining in Brazil. Venezuela plans to build an oil pipeline through Colombia to the Pacific Ocean for easier oil transportation to China. China has also reached overall agreement with Canada on investment in the latter's oil resources.

2. "Going Abroad" Strategy for Energy Enterprises

As guided by the energy diversification strategy, the Chinese government has been encouraging domestic corporations to implement the "Going Abroad" strategy to pursue energy cooperation. The major consideration is that the impact of crude oil's high price on economic development will be offset and mitigated to a large degree as long as China has sufficient overseas oil production, and thus "going abroad" to produce oil is preferable to buying oil. Various cooperation projects between China and other countries adopt the form of "shareholding oil", i.e., China is involved in local oil construction projects by means of equity participation or investment, receiving a certain share of oil output each year. In its current overseas oil and gas exploration and exploitation, China has obtained the right of shareholding, equity participation or independent exploration and exploitation in Sudan, the Strait of Malacca, South America, the Gulf of Mexico and Central Asia, etc. The residual recoverable reserve of the overseas

"shareholding oil" in China's grasp exceeds 0.4 billion tons, and the realized capacity of crude oil production amounts to 130 million tons per year. In 2004, China extracted more than 20 million tons of crude oil overseas.

For energy enterprises, there are three major ways to go abroad: the first is through futures and spot trading; the second, through overseas development to obtain refined oil; and third, through setting up overseas production bases. Some domestic energy enterprises have taken steps to aggressively expand the overseas market in the above three ways. The major oil companies including Sinopec, CNPC, and CNOOC have expedited their strategic overseas implementation. Based on data from the Ministry of Commerce, the above domestic oil operators have been involved in 65 oil and gas exploration and exploitation projects in more than 30 countries, having invested US\$7 billion in total and, in return, having obtained 60 million tons of "shareholding oil." Other Chinese corporations are also pushing forward with overseas acquisition activities. Sinopec has successfully gained a foothold in Saudi Arabia, with the largest oil and gas reserves in the world, and participated in local oil and gas projects in Canada, Iran, Saudi Arabia, Gabon, Kazakhstan, Yemen, and Ecuador, etc. CNPC is implementing 44 overseas oil investment projects covering 18 countries and territories on four continents. Four major overseas oil and gas production bases (i.e., North Africa, Central Asia, South America and Asia-Australia) have been set up. At the same time, there is still competition and collaboration between China and major energy consumers, such as Japan, the U.S., and India, etc.

Part III. China's Energy Trade in Northeast Asia and Related Problems

The region of Northeast Asia, despite its relatively small share of China's energy trade at present, exerts a pivotal influence on the country's future energy strategies, as it is one of the important potential energy supply channels for China and other countries. Whereas the future energy market of Northeast Asia may be complicated and difficult, the issue of how to effectively promote energy trade and international cooperation in the region is a problem of great importance and one that China should actively research.

1. China's Energy Trade with the other Countries in Northeast Asia

A. Sino-Russian Energy Trade: Rapid Growth in Oil and Electric Power

Firstly, in recent years, the amount of oil supplied from Russia to China has been growing gradually. In 2003, China's crude oil import volume exceeded 100 million tons, of which only a little over 2 million tons or under 2% were from Russia. In the same year, Russia exported more than 200 million tons of oil, and the volume exported to China was actually under 1% of the total. 2004 witnessed China's crude oil import volume from Russia grow to 5.4 million tons. Then in 2005, oil exports from Russia to China reached 7.7 million tons, or over 30% higher than the previous year. This still, however, lagged far behind the volume designated in the agreement between

the two countries. In 2006, Russia exported about 12 million tons of oil to China, accounting for roughly 10% of Chinese total oil imports[d1]. At present, the main means of transportation of Russian oil exports to China is by railway, and an annual average of about 8.8 million tons of oil reaches China in this way. The limited capacity and high cost of transportation put a restriction on the growth of Sino-Russian oil trade. Since January 2007, Russian oil exports have been able to make use of the China-Kazakhstan Pipeline, and are delivered to China along the Atasu-Alashankou route. It is estimated that an annual amount of 1.5 million tons of oil will come by this route. Besides, Russia is planning to construct another Far East pipeline, taking Siberian oil to the Asia-Pacific region including China. The pipeline's planned annual oil transportation capacity is 30 million tons, and of that amount, 20 million tons would be for China.

Secondly, natural gas trade between the two countries has not yet started. Future Sino-Russian cooperation on natural gas includes a gas supply project from the Republic of Sakha (Yakutia), Russia, to China, and another one from the Kovykta gas condensate field in Irkutsk Oblast, Russia, to China and the Republic of Korea. These two lines have been confirmed and their western parts have already undergone survey. The governments of China and Russia have declared their plans to construct the natural gas pipeline and to transport natural gas from Russia to China within five years. However, to realize this target, the two countries still have to face tough negotiations on pricing.

Thirdly, Sino-Russian trade in electric power will develop rapidly. In 2004, Russia supplied 300 million kilowatts of electric power to China. The two countries decided to construct a back-to-back direct current grid interconnection, transmitting electric power from Russia to Northeast China over the 11th Five-Year Plan period with a transmission capacity of 600,000 to 720,000 kilowatts, or an annual electricity supply of 3.6 billion to 4.3 billion kilowatt-hours. Meanwhile, China and Russia plan to start working on a direct current power transmission project of ± 500 kilovolts, which would be put into operation within the 11th Five-Year Plan period. Upon completion of this project, it could transmit 3 million kilowatts of electric power from Russia to Northeast China, adding up to 18 billion kilowatt-hours per year. In 2006, large-scale electric power cooperation between China and Russia entered the implementation period, and the electricity sales contract for the first phase has been signed.

B. The Trend of Shrinkage in the Energy Trade between China and Japan

China has a certain amount of energy exports to the Northeast Asian region. Japan is China's main energy export destination, but its relative position has dropped noticeably. Japan's proportion of China's energy exports fell from approximately 50% in 1994 to roughly 20% in 2003. The main exported energy sources are crude oil (prior to 2004), coal and coal products. In 1978 when China and Japan signed the "Long-Term Trade Agreement," China exported about a quarter of its annual production of crude oil. At its peak in 1985, Chinese crude oil exports made up 6% of the total Japanese imported volume. China then

became a net importer of refined oil in 1993, and a net importer of crude oil in 1996.

The three years 2001 to 2003 still saw China's export of crude oil to Japan stay at an annual level of 3 to 4 million tons. In 2004, the Sino-Japanese trade in crude oil came to the end. China's coal exports to Japan were 6.5 million tons or 5.6% of the latter's total imports in 1992, and that volume grew to 25.65 million tons or 16% of Japanese imports in 2001. An annual amount of about 20 million tons of steam coal was imported from China, meeting 11% of the total demand made by the Japanese electricity generating sector. For Japanese imports of soft coal in 2003, 17% was from China (according to China's General Administration of Customs), which made China the second largest soft coal exporter, after Australia. In 2004, the Sino-Japanese long-term trade negotiations on coal got bogged down owing to price problems.

C. Gradual Flourishing of Energy Trade between China and the Republic of Korea

At present, China's oil imports have undergone a transformation from a predominance of refined oil to the primacy of crude oil, and the accelerating pace of crude oil imports was faster than that for refined oil. The Republic of Korea has replaced Singapore to become the largest exporter of refined oil to China. According to the 2003 statistics by China's General Administration of Customs, 37% of the total soft coal imports to the Republic of Korea were from China, which made it the second largest soft coal exporter behind Australia. Additionally, Korea Electric Power Corporation (KEPCO) plans to construct two coal-fired power plants in China, and this is the corporation's first undertaking in the Chinese electric power market. The corporation will invest US\$11.5 million to obtain 51% of the project's shares and the right to operational control for 20 years. The first power generator sets would have an installed capacity of 110,000 kilowatts, and the second sets would be capable of 500,000 kilowatts. The power plants are to be built in Luoyang, China.

D. The Increasing Sino-Mongolian Energy Trade

On June 1st 2006, parties concerned with energy cooperation from China and Mongolia signed the "Agreement on the Primary Feasibility Studies on the Construction of Coal Power Projects in Mongolia Transmitting Electricity to China." The cooperation project marked out the future prospect that three large-scale fire-powered generating complexes would be constructed in Mongolia, and each would contain a pithead power plant with 6×600,000 kilowatts of capacity and a coalmine with annual output of 12 million tons. Meanwhile, three direct current power transmission lines of ±500 kilovolts, with single circuit transmission capacity exceeding 3 million kilowatts, would be set up to send electricity to China. Once the construction of the fire-powered plant of 3.6 million kilowatts is completed in Mongolia and enters into operation, most of the power generated would be transmitted to China, according to the plan. Benefits for China would be realized in the utilization of these overseas resources, and Mongolia would benefit from the capital injection from China.

E. China's Energy Trade with the DPRK: A Leap in China's Energy Exports

Since the US stopped its supply of 500,000 tons of fuel oil to the DPRK at the end of 2002, the latter has encountered an increasingly serious energy shortage. Furthermore, owing to the impact of the nuclear crisis, international aid to the country after 2002 shrank greatly. Therefore, the country stepped up its energy imports from China. As seen from China's exports from the Port of Dandong in Liaoning Province to the DPRK, for the first half of 2005, the port exported 295,000 tons or US\$100 million worth of crude oil, which was a 45.5% increase on the same period in 2004 (according to Dandong customs.) In October 2005, China Minmetals Corporation set up a joint venture in the Ryongdung Coal Mine, which was the first joint venture set up outside the development zones in the DPRK, and the first opening up within the country's energy sector.

2. Main Problems Facing the Energy Trade in Northeast Asia

A. Competition Induced by Common Demand for Russian Energy by China, Japan, and the Republic of Korea

China, Japan and the ROK are the largest energy consumers in Northeast Asia. They are all countries with massive capacity in oil refining and petrochemical processing, being highly dependent on energy imports. In order to guarantee energy security, all three countries are eager to strengthen their energy cooperation with Russia. Hence they became competitors in their oil and gas strategies. China and Japan have already been engaged in direct competition for Russian pipelines. Japan regards the oil and gas resources in eastern Russia as a vital part in its own drawing up of a new national oil strategy. Japan was also the earliest in Northeast Asia to develop energy in the Russian Far East. While Sino-Russian energy cooperation has unassailable advantages over other countries, present cooperation is limited in scale and slow in making headway. Regarding the oil transportation route of Taishet Nakhodka (and on to China,) Russia is preparing to construct an oil refinery with an annual processing capacity of 20 million tons at the terminal of its Far East pipeline, and thus restrict the scale of oil transportation to China from pipeline laterals. Both natural gas and electric power cooperation between China and Russia is stalled by price problems. The ROK is almost entirely dependent on oil and natural gas imports, so it is also trying to secure Russian exports. That country has now become one of the important destinations for Russian expansion of its exports of energy products in the region.

B. Regional Energy Cooperation Affected by Geopolitical Factors

Northeast Asia is a region with a complicated geopolitical landscape, which directly affects its energy cooperation. Sino-Japanese and Korean-Japanese political relations are greatly strained by the attitude of the Japanese government in dealing with historical problems. Japan is very suspicious of China's growth in international prestige,

so its policy toward China is influenced negatively. For example, even with the absence of initial investment and technological examinations and assessments, Japan declared it would make huge investments in the Angarsk-Nakhodka pipeline in the Russian Far East. China and Russia have established a strategic partnership, but to develop the economy and regain national strength is where Russia's national interest lies. Japan can provide Russia with the technology and capital it urgently needs, and the Chinese inability to meet those needs causes Russia to have reservations in its policy-making towards China. Apart from the maximization of its national interest, Russia's changes in the Angarsk-Daqing pipeline are due to its hope to develop the Russian Far East with help from Japan. The Japanese government also intends to weaken Chinese regional influence by using Russia. Out of the demands of strategic interests, the relationship between Japan and Russia grew rapidly from financial assistance to regional cooperation, as well as from oil prospecting to military cooperation. The Korean Nuclear Crisis and the bilateral relationship between the US and the Republic of Korea are both factors that affect energy cooperation in Northeast Asia.

C. The Lack of Truly Effective Energy Cooperation Mechanisms

Though Northeast Asia already has a tentative plan and the first stages of multilateral energy cooperation, an effective cooperation mechanism has not yet been established. In their energy cooperation efforts, different countries basically hold the same concept of a "zero-sum game," which means that one country's gain comes from another's loss, instead of a concept of interdependence under economic globalization and regional integration. Countries are worried not only because other countries might gain more income-wise, but also because they might become dependent on others as a result of the realization of cooperation. Therefore, many countries adopt a "going it alone" diplomacy in their oil strategy, resulting in the failure of their own diplomatic efforts, getting only half the result with twice the effort. This situation is likely to result in more competition between countries. At present, Northeast Asian countries' concept of multilateral energy cooperation is still a simple form of oil trade. Other forms of cooperation, like the establishment of a regional energy market and an international consortium on energy exploitation have not yet been initiated.

Part. IV. Analysis of a Number of Essential Issues on Energy Cooperation in Northeast Asia

At the present time, energy issues are becoming ever more important and critical for many countries in the world, accompanied as they are by high oil prices. In Northeast Asia the energy problem seems more complex than in other regions of the globe. It's very difficult to undertake dialogue and cooperation on energy issues among the countries of Northeast Asia because of the lack of awareness about, and competitiveness of, the energy issue. Faced with the problem of energy cooperation in Northeast Asia, many scholars have tried to make proposals to promote

cooperation. However, as a first step, some essential issues on energy cooperation in Northeast Asia should be clarified so that they can help in deepening energy cooperation.

1. Northeast Asia Energy Cooperation: A Complicated, Sensitive and Difficult Issue

For any region, even within a country, economic cooperation and institutional arrangements are usually difficult and complicated, to say nothing of the situation in Northeast Asia, a region with a long-existing complex and sensitive climate regarding political and economic cooperation. With the whole world today under pressure from energy issues, it will be much more difficult for Northeast Asia to tackle the issue of institutional frameworks on top of the existing economic cooperation difficulties, and overlaid with the issues of energy cooperation.

The difficulty of Northeast Asian energy cooperation lies in two aspects: the first being the various internal problems confronting the six countries within this region in conducting energy cooperation, including the lack of mutual trust between the countries of Northeast Asia, the heterogeneity of economic systems, and each country pursuing energy policies that satisfy only their own demand patterns resulting from their different energy market conditions, etc.; the second being the countries of Northeast Asia's external relations in this open era of economic globalization having to consider not only their own energy supply and demand, but also a variety of complex political and economic relationships involving the major energy suppliers and consumers outside the region. It goes without saying that the US and EU are the most important actors influencing energy supply and demand in Northeast Asia.

Meanwhile, the limited supply and sources of energy, combined with competition for energy between China, Japan and South Korea, has resulted in the delicate and intricate relationships among them. As such, the complexity and sensitivity of the energy security issue in Northeast Asia is greatly magnified. It might be safe to say that this issue is one of exceptional difficulty, when compared with other areas of the world. This has arisen from the fact that Northeast Asia is the epitome of global heterogeneity: diverse economic and social systems, different stages of economic development, and distinct paths of economic development.

The issue of energy security is vital to national security. In response to this, we need to have sufficient knowledge of the long, arduous process of energy cooperation in Northeast Asia, and need to make an unremitting effort. During this process, the concerns and priorities of any country relating to energy cooperation should be respected by the other countries. All of them should comply with the principle of "Seek common ground while maintaining differences" in dealing with this issue.

2. Can we Separate Economics and Politics when Addressing the Energy Problem?

We often hear of the the principle of the separation of politics and the economy, or "cool politics and hot economy" in studies of Northeast Asian economic

cooperation. Most of the concepts probably indicate the political and economic relationships between China and Japan. From the perspective of theoretical study, political factors can be separated from economic factors, just as politics and economics can be separated from one another theoretically.

However, it is hard to imagine how a national government could in practice set aside major political factors and simply push ahead with economic or energy cooperation in handling major issues concerning national security such as energy. As energy issues have been elevated to the level of national security and foreign relations, they inevitably have a mutually-dependent relationship with politics.

In light of this, we should work to realize the following situation in cooperation:

First of all, some of the countries are required to reach consensus in the political arena, at least without political confrontation on dogma or political standoffs. Such consensus will help create the basic conditions and atmosphere for multi-level energy cooperation, in particular for the major energy cooperation issues and projects requiring a relatively harmonious political atmosphere with high-level consultation and coordination between countries.

Secondly, some countries need to adopt convergent energy strategies to create mutually beneficial and interdependent ties. In the past China and Russia's peculiar development paths and stages were related directly to the failure in building strategic energy cooperation as close neighbors, as China had only a small demand for external energy, and Russia had an uncertain future regarding economic development. In the years to come, the major economies should communicate and coordinate on economic and energy strategies with a view to building multilateral cooperation. Each country should have its own room for growth, while no one country should hinder or restrict the development of others.

3. Multilateral Cooperation or Bilateral Collaboration?

Whether Northeast Asian energy cooperation takes the form of multilateral cooperation or bilateral cooperation reflects the conflict of what is ideal and what is realistic. Energy suppliers such as Russia naturally want to have the maximum possible choice in selecting export destinations, so as to gain more advantage, whereas the energy importers also hope to have a greater number of and more varied sources of energy imports for the purpose of their energy security.

Based on the rule "don't put all your eggs in one basket", multilateral cooperation is the safer option, which is more likely to help create a balance of energy exploitation and trade in Northeast Asia. Building a multilateral cooperation mechanism is consequently a sensible requirement. Multilateral cooperation is the ideal goal and the desired outcome of Northeast Asian energy cooperation, but it cannot meet the needs of the current situation, as it may have low efficiency, with higher transaction costs and slow progress. Just as in the comparison of the thorny progress of WTO negotiations and the rapid development of FTAs, bilateral negotiations or multilateral negotiations with fewer parties are more likely to reach agreement, while

the multilateral talks with more parties are subject to more failures. It is always harder to reach plenary consensus at any time than to reach agreement among small groups. That is the reason why multilateral negotiations often stumble during the process of trying to establish Northeast Asian energy cooperation.

Northeast Asia at present heavily depends on bilateral collaboration in energy cooperation. How to break through from bilateral cooperation and enter into multilateral cooperation and what kind of process is required for the above shift is a problem to be explored. In theory, the countries involved in bilateral collaboration will turn to multilateral cooperation only when they find their total transaction costs are higher than those under multilateral cooperation.

In reality, existing bilateral collaboration, other than multilateral cooperation, is primarily the result of the lack of mutual trust between Northeast Asian countries. With rivalry and conflict stretching back to the beginning of 20th century, there are still political and economic tensions between the countries of Northeast Asia. Without mutual confidence-building there is a low possibility of successful energy cooperation. Therefore, it is paramount for the countries concerned to treat each other with sincerity and enhance mutual trust. Secondly, the competition between China, Japan and South Korea is of no benefit to the establishment of multilateral cooperation. The three countries are all oil importers and major petrochemical processors with high capacity in oil processing. It is expected that China, South Korea and Russia will have a relatively bright future in power cooperation for reasons of geography but there is still a lot to be done in oil and gas pipeline construction and transportation.

4. Institutional Frameworks or Project Implementation First?

Actually there has been a history of Northeast Asia pursuing multilateral cooperation going back to the beginning of this century. Such a process serves to highlight a lot of new progress in the establishment of multilateral cooperation mechanisms, and also the high degree of difficulty entailed.

Some scholars and officials therefore propose to first initiate major projects (e.g. oil and gas pipeline construction) and then to facilitate the creation of collaboration mechanisms via the operation of those projects. It is a practical idea, but the question is whether mechanism building and project operation contradict, conflict with, or oppose one another? Does it mean that to advance in one area we have to retreat in another?

As we can see from the current development of Northeast Asian energy cooperation, the Russian oil and gas pipeline construction projects remain in the process of continuing negotiation, consultation and compromise, despite the many "stories." At the same time multilateral cooperation is being driven forward gradually. The two options should therefore be complementary. The Northeast Asian countries have lost a great deal of precious time in the past, when we did not have sufficient demand and the conditions for energy cooperation. At present we have the demand but not the adequate conditions. We cannot,

however, start to act only when all the conditions have reached maturity.

To have all the people of the Northeast Asian countries benefit from energy cooperation as early as possible, we should approach energy cooperation by two paths simultaneously. We may apply the "from-easy-to-tough" principle to investigate the appropriate mechanisms for energy cooperation; for example, we can make an attempt at multilateral financing mechanisms as the first step, and eventually pursue building a Northeast Asian Energy Community.

5. The Key to Pushing Forward Institutional Structures in Northeast Asian Energy Cooperation: Identify Directions and Foci

With the various existing barriers and problems, the establishment of Northeast Asian institutional cooperation on energy has a long way to go. The central question that any institutional framework should address is the desired destination, which could become more realistic and achievable through cooperation. One practical issue, i.e., that China and Japan have not yet participated in building multilateral mechanisms, should be noted and watched. That is quite normal because the two economic powers are confronted with many issues and lack the due conditions for cooperation.

The countries concerned need to identify directions and foci, and work out the details through studies and discussion to promote the establishment of an institutional framework for Northeast Asian energy cooperation. For instance, what issues need to be highlighted in defining the major goals and contents of an institutional framework? What is the main form that deliberations should take

meetings between people from the energy sector or between high-level officials? What conditions are required for setting up an energy community? How to fulfill those conditions with all of the stakeholders participating in the arrangement? And, how to remove the existing barriers?

We should also propose bold hypotheses for the future and a schedule for the institutional framework, forecasting the situation five or ten years ahead, based on our studies. For instance, European energy importing countries have had a smoother process of energy collaboration, in comparison, as they are at quite similar levels of development. Does Northeast Asia need such a precondition for energy cooperation? In terms of the principle "from easy to difficult" the first step is to establish a simple Northeast Asia oil or gas alliance, followed later by a Northeast Asia energy alliance. All these kinds of questions call for in-depth analysis. With the key issues resolved, the institutional framework of Northeast Asian energy cooperation will move ahead steadily.

Part V. Scenarios for Northeast Asian Energy Cooperation and Possible Schemes for Cooperation

1. China's Energy Policy: General Self-Sufficiency in Energy Supply Led by Coal

China has a structural shortage of energy types like oil and natural gas, so the shortfall has to be made up through both domestic and international markets. Presently the

scale of energy trade between China and other Northeast Asian countries is small, accounting for a relatively small proportion of China's total volume of imports and exports for the main types of energy. Chinese coal exports to Japan and the Republic of Korea are decreasing. A mid- and long-term outlook shows that Russia and Mongolia will become the essential energy-trade channels for China.

2. Great Efforts in Expanding the Regional Energy Trade in Northeast Asia

At present, the volume of energy trade in the Northeast Asian region is limited, but its growth potential is large, given the prospect of wider cooperation in the future. This is of long-term strategic significance for various countries in the region. The countries concerned should mutually respect each other's national circumstances, and try to mutually understand each other's points of interest. They should make compromises at the earliest opportunity concerning the pricing of oil, natural gas, electric power, and investment in oil and natural gas pipeline construction. Meanwhile, energy infrastructure construction should be further promoted so as to lay the foundations for the expansion of energy trade and the reaping of common benefits.

3. Establishment of the Regional Energy Cooperation Mechanism in Northeast Asia to Accord with the Common Interests of Various Countries in the Region

Nowadays with the increasing pace of economic globalization and regional integration, Northeast Asian economies are becoming increasingly interdependent, and energy security has turned into a security problem at the regional level. The common demand for Russian energy has provided a basis for energy cooperation in Northeast Asia. As all three are energy demanders with an intention of safeguarding common interests, China, Japan and the ROK should explore ways to establish a regional energy cooperation mechanism and an energy network with Russia as the supplier. This would make for the achievement of a steady and secure energy supply, the formation of strong purchasing power, and the solution of the "Asia Premium" problem in Middle East crude oil supply.

4. Deepening of Energy Cooperation via Multiple Measures

The expansion of energy trade in Northeast Asia calls for the enhancement of both the faculties for intergovernmental coordination and mutual trust between countries. It also requires the promotion of regional economic development as well as a stabilized political environment within an accelerated regional integration process. Via a multilateral cooperation mechanism, we should carry out in-depth studies on, and examination into, important issues concerning energy cooperation in the Northeast Asian region. The countries involved should strengthen cooperation among their energy enterprises, and enable trans-national corporations to participate in Northeast Asian energy development and trade by means of joint ventures, joint stocks, and mergers and acquisitions, etc.

5. For China, Oil and Gas are the Major Areas for

the Implementation of its External Energy Strategy in the Future, Subject to its Specific Structure of Energy Production and Consumption.

China's external energy strategy mainly comprises the diversification of external energy sources and a "Going Abroad" strategy for Chinese energy corporations. Its external oil strategy is still in the early stages, and its share in the global oil trade value is a mere 6%. Russia and Central Asia will become the most significant strategic partners of China in oil and gas cooperation. As neighbors with complementary economies, they will enter into a new era of energy cooperation. Meanwhile China should be prudent in addressing the issue of competition and collaboration with the major oil consumers, including the US, Japan and India.

The gradually improved strategic partnership among the Northeast Asian countries is allowing cooperation for energy development in Northeast Asia to become reality. The basic condition for energy exploration in Northeast Asia is to satisfy the requirements of stockholders. Due to the complicated political and economic relationships caused by territorial conflicts and historical problems between these countries, there is still a long way to go. In order to make the energy development and cooperation plan viable and sustainable, countries concerned should understand, cooperate, and be tolerant of one another, and balance the interests of the major stakeholders. In a word, cooperation is the only right way for maintaining energy security in Northeast Asia.

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北東アジアの将来に向けた中国のエネルギー安全保障観と戦略

中国国家発展改革委員会国際経済研究所対外経済協力部長 張建平

要 約

今後、エネルギー安全保障とエネルギーの効率的利用は、中国が持続可能な開発戦略を実施していく上での基礎的要件である。第11次5カ年規画に含まれたエネルギー政策においては、市場手段の適用や国内外資源のバランスの取れた利用に基づくエネルギー供給によって、エネルギー効率の改善と省エネルギーを促進することに力点が置かれた。エネルギー協力や輸出ルートの多角化を目指す「多様化戦略 (diversification strategy)」や石油権益の委譲と引き替えに海外の石油プロジェクトに参入する「海外進出戦略 (going abroad strategy)」が基軸となっている。

潜在的に大きな石油・ガスの供給国が北東アジア地域内に含まれていることは、中国のエネルギー安全保障にとり非常に重要なことである。北東アジアにおいてエネルギー貿易を進める上での主な障害として、ロシアのエネルギーに対する中国、日本、韓国による競争や地域エネルギー協力に対する地政学的要素の影響、エネルギー協力を目指す上での真に効果的なメカニズムの欠如 - が挙げられよう。

北東アジアにおけるエネルギー協力は複雑、微妙、且つ困難な課題であるが、協力を推進する上では、経済と政治を分けて議論することは非現実的である点や、多国間と2国間双方の協力枠組が重要であることを踏まえる必要がある。他方、制度の構築とプロジェクトの実施が相互に促進する形になるべきである。地域内エネルギー協力に向けた制度の構築を図る上では、まず方向性と重点項目を明確化しなければならない。北東アジアのエネルギー安全保障を確保する上では、協力が唯一の正当な手段である。