

Brief analysis of cooperation prospect on oil and gas industry of China, Japan
and South Korea

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**1. Favorable cooperation conditions are provided in the oil and gas industry
of the three countries**

Currently, the wish for strengthening cooperation among China, Japan and South Korea is intensifying continually on the macro background of unsteady international situation and unceasing conflicts between regions. An universal consensus has been reached that the economic and social development depends on good international and regional circumstances, and strengthening cooperations among China, Japan and South Korea correspond with three nations' fundamental interests. Especially in the oil and gas cooperation field, a solid foundation and some favorable conditions have been formed, and they are as follows:

Firstly, China, Japan and South Korea are friendly near neighbours depending on each other, with centuries-old historical ties. Confucianist culture nurtured People of the three countries, and the "harmarmony" in the common culture background laid a solid foundation for communication and cooperation of the three countries, guiding their future cooperation. Since the establishment of diplomatic ties, three countries' cooperation relationship in various economic fields developed drastically.

Secondly, the rapidly growing oil & gas demand provides huge market for the three countries' strengthening resource cooperation. With continuous and rapid development of the three countries' economy, the oil and gas demand is also increasing fast and stably, and the proportion of this region' total oil and gas demand in the world gross need is rising continuously.

According to the BP statistical review, the oil demand of Japan, China mainland and South Korea accounts for over 90% of that in entire China, Japan and South Korea region. Especially china's rapid economic growth provides more opportunities for economic cooperation in this region. Currently, china's economy is in the rising phase of the new round of growth period, and internal vitality promoting growth enhanced. So China's economy will grow rapidly in the next 10~20years, thus driving the fast increase of oil and gas demand. In terms of the goal of GDP tripling by 2020 over GDP in 2000, the oil need in china is predicted to climb up to 350 million tons by 2010 and 450 million tons by 2020, 1.1 fold and 1.5 fold over 2003 respectively. The demand for three major oil products of Gasoline, kerosene and

diesel and chemical feedstock is the primary driving force, and it will rise by 240 million tons by 2010 and 320 million tons by 2020, 1.4 fold and 1.8 fold over 2004 respectively. Meanwhile, gas demand also grows rapidly, the demand is predicted to reach 100 billion cubic meters by 2010 and 200 billion cubic meters by 2020, with a good market potential, so the rapidly growing oil and gas demand provides more cooperation opportunities for China, Japan and South Korea region.

Thirdly, they are jointly facing Challenges from oil and gas resources shortage. According to BP statistical review, China, Japan and South Korea are the second, third and seventh largest oil consumers in the world respectively in 2004, and the total oil consumption amounted to 655 million tons, accounting for 17.38% of the global total, with china 8.19%, Japan 6.41% and South Korea 2.78%. Among the above three countries, Japan is the traditional importer for oil and gas resources, the oil import up to 263 million tons in 2004, and is the importer of second-largest in the world and largest in China, Japan and South Korea region. Oil and gas resources in South Korea depend on import entirely, the oil import up to 106 million tons in 2003, and is the importer of fourth-largest in the world and second-largest in the China, Japan and South Korea region. Though the remaining oil recoverable in china ranks the world eleventh, the production up to 175 million tons in 2004, ranking the sixth in the world, the robust oil demand growth led to the oil import dependence rising continuously. China became the importer of fifth-largest in the world and third-largest in the China, Japan and South Korea region, due to the 123 million tons of crude import in 2004 causing the dependence up to 38.7%. It is worthy to be pointed out that China, Japan and South Korea all rely heavily on the oil resource of Mid-East region, and the current dependences of the three countries on Mid-East are 79%, 75% and 50%. From the above data we can see that oil consumptions of China, Japan and South Korea all depend on external oil supply to some degree, and their oil imports mainly come from Mid-East. So how to efficiently meet the oil and gas need and secure the oil and gas supply have already been the jointly facing challenges.

Fourthly, there is complementarity in oil and gas cooperation among China, Japan and South Korea, and more favorable conditions are existent for developing cooperation. China has great market potential, advanced fundamental science research capacity, valuable experience of oil and gas production, plentiful labor force and continuously rising industrial manufacture level. Especially in oil and gas E&P field, China accumulated valuable experiences, and got competent E&P capability. Otherwise Japan and South Korea have strong competition predominance in capital, operation, industry technology, marketing and so on, and especially have valuable experiences in oil stock system, energy-saving, improvement of energy efficiency and control of CO₂ emission. If the predominances of three countries could be well combined, the international competition capability of three countries on oil and gas industry would be improved further.

Fifthly, the top leaders of China, Japan and South Korea region attach much importance to strengthening energy cooperation. We are glad to see that the energy cooperation of China, Japan and South Korea has made practical advancement. In the **Joint declaration of China, Japan and South Korea promoting three parties' cooperation**, it is definitely declared that the win-win cooperation in energy field of the three parties should be expanded, jointly dedicated to ensuring regional and world energy security. In July 2004, the first session of energy ministers from ASEAN and China, Japan and South Korea (10 plus 3) announced a joint declaration, which emphasized once more strengthening energy infrastructure building up in the region. In ASEAN 25th session, intensifying establishment of transportation and energy infrastructure in the region was also stressed. All of these fully expressed the keen wish on energy cooperation of each government in the region, unveiled the cooperation curtain in the region, and laid a solid foundation for the future energy cooperation development.

Sixthly, unstable Mid-East region is the major source for oil import in China, Japan and South Korea, so all of the three countries are facing the "Asian crude premium" of \$1~3 per barrel. And the crude exported from Mid-East and Africa must be transported through more and more crowded Malacca Strait with security under threat. So the three should make joint efforts to solve the problem of "Asian crude premium" and ensure the transportation passages security.

Seventhly, oil and gas industry is confronted with more and more rigid environmental protection requirements, and China, Japan and South Korea are all facing the critical challenges for fulfilling their commitments in **Kyoto Protocol**. According to **Kyoto Protocol**, the developed countries must meet the requirements of reducing greenhouse gases by 5.2% during the period of 2008~2012 over 1990, and Japan and South Korea have signed. Japan must decrease the greenhouse gases emission by 6% by 2008~2012 over 1990. Therefore, the three pay more attention to the R&D of the new technology. The three need to actively exploit alternative energy while strive to improve energy efficiency and save energy,

Eighthly, the three are all facing the impact of high oil price, and are the victims of price hike with wide fluctuation range. The three countries' governments have a goal in common, that is ensuring oil security and steady economy at home. The three have established or are establishing strategic petroleum reserve systems. Strategic petroleum reserve is crucial for resisting the regional sudden oil supply disruptions. In the case of emergency, establishment of ASEAN joint oil stock will make for the security and stabilization of ASEAN and its adjacent countries. But there is some difficulty in building up such regional oil stockpiling, and the costs for establishment and maintenance are rather high. So it need to obtain capital and technology assistance of other economies through expanding the "10 plus 3" energy cooperation framework (ASEAN plus Japan, China and South Korea). China, Japan

and South Korea need to establish “10 plus 3” energy security system.

2. Some suggestions for strengthening oil and gas cooperation of three countries

Currently, China and South Korea have formed benefit-sharing basis and conditions in oil and gas industry, the petroleum and petrochemical enterprises of China, Japan and South Korea should intensify communication, develop further cooperations in resource, market and technology, striving for more substantial headway.

2.1 Enhance cooperation, jointly ensure oil security

China, Japan and South Korea are all giant oil consumers and importers. In the face of future growing oil supply shortage in China, Japan and South Korea region, developing cooperation is the efficient ways to solve the problem. There are five ways as follows:

First, strengthen the communication and cooperation in oil stock, give full play to respective advantages, and search cooperation program of mutual benefit; second, reinforce monitoring the navigation on the transportation passage of Malacca Strait, maintain navigation order, jointly ensure the “throat” transportation passage’s security; third, develop new oil transportation passages together, for example, actively promoting the crude pipelines between Russia and East Asia region; fourth, jointly intensify the exploitation of renewable energy and new energy, utilize widely clean energy such as natural gas, reduce the dependence on oil; fifth, develop and apply advanced energy-saving technologies, improve energy efficiency.

2.2 Strengthen the communication and cooperation in oil trade

Basing BP statistical review, the total oil trade in 2003 was 2.3 billion tons, while the oil trade of China, Japan and South Korea was about 240 million tons, accounting for 10.4% of the world total. As the world oil trade has the characteristic of strong monopolization, relying on gigantic transportation system and complicated transportation means, so China, Japan and South Korea should enhance communication continuously, establish some cooperation mechanism mode step by step, make great efforts to solve the problem of currently existent mid-east crude “premium”, raise their negotiation status in the global oil market, and efficiently reduce the impact of oil price fluctuation. In addition, they can further discuss to organize and establish ocean oil transportation fleet, build up continuously the capacity for dealing with international oil market change and emergency.

2.3 Intensify the cooperation on oil and gas E&P

Oil companies of China, Japan and South Korea have respective technology advantages and features. China has formed E&P theory and technology series on oil

and gas fields of terrestrial facies, with valuable oil and gas E&P experiences, established large scale E&P engineering technical service troops and equipment-manufacturing troops, owned predominances of advantaged market and talent, while Japan and South Korea hold abundant finance and advanced management experiences. As such, the three should develop oil and gas E&P activities in Asia and world, exploit oil and gas fields through joint venture. For example, they should actively participate in the E&P activities in Mid-Asia region, Russia and Africa etc., organize and establish oil technical service companies and so on, give full play to advantages of three countries' resource, capital, technology and market, exert synergistic effect and reduce respective overseas investment risks.

2.4 Strengthen wider cooperation in midstream and downstream, trying for common development

In recent years, Korean enterprises have begun to enter into the staple petrochemical product field and oil product field, on the basis of consolidating downstream investment projects of fine chemicals industry, plastics processing, chemical fiber and textile. While Chinese government is also actively encouraging foreign enterprises to launch investment cooperations in multiple fields, such as gas exploitation and utilization, basic organic chemical feedstock, engineering plastics, specialty equipment manufacture etc. Therefore, the petroleum and petrochemical enterprises of china, Japan and south Korea should intensify communication, discuss jointly the cooperations in gas exploitation and utilization, oil refining, petrochemical equipment, improvement of old plant technology level and establishment of distribution system and so on, realizing the goal of mutual benefit and win-win.

2.5 Reinforce cooperation, jointly deal with maritime transportation risks

Maritime transportation of oil and gas resources has become important transportation means, thousands of millions of oil need to be transported on the sea each year. Once shipwreck accidents happened, such as oil leakage, it will yield great impact. So china, Japan and south Korea should discuss to establish jointly responding system for emergency, develop cooperations in fund, equipment and talent etc., deal with together maritime sudden events. Moreover, the three should consider to build up common bearing maritime risks system. In case shipwreck happens, they can bear risks together, reducing the great risks and loss taken on by one country.

2.6 Formulate periodical communication mechanism, promote jointly the stabilization and development of Asia-Pacific petroleum and petrochemical market

With the acceleration of Asia-Pacific economy integration process, Asia-Pacific petroleum and petrochemical market became an inseparable market further. Therefore, the petroleum and petrochemical enterprises of china, Japan and south Korea need to

strengthen communication and cooperation in market information, formulate periodical communication mechanism, deepen and expand communication, promote mutual trust and understanding, discuss together the approaches and programs for solving problems.

We believe, the continuous deepening and extending cooperation of energy enterprises in china, Japan and South Korea will surely provide reliable oil supply for the three countries, thereby make great contribution to healthy and rapid development of economy and society of china, Japan and south Korea region.

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