

A paper Presented to the 15<sup>th</sup> Annual Meeting of  
North East Asia Economic Cooperation

## China-Russia Energy Trade and Cooperation

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Economic globalization and lasting world economic growth have lead to a global energy shortage, which offers a historical opportunity for the energy-rich Russia. In the meantime, China, the world's largest developing nation, is faced with serious challenges and opportunities to optimize its energy strategy. The energy cooperation between China and Russia is a win-win deal not only important to their trade relations, but also critical to their strategic partnership. In addition, it will have significant impact on the future energy and economic cooperation of the North East Asia region.

### I.The Historical Opportunity of China-Russia Energy Trade and Cooperation

The bilateral trade of China and Russia has been growing rapidly. The major exports of Russia to China include weapon, oil, and timber; and China's main exports to Russia are finished industrial products. China is the world's 2<sup>nd</sup> largest oil consumer next to the US, but its reserve of regular energy resources is not abundant. Due to its fast growth, China's oil demand has been increasing by 16% annually in recent years, much higher than the world average of 6-7%. It is estimated that by 2010, 2015 and 2020, China will have to import respectively 45.3%, 50.1% and 55.4% of its oil consumption. China's natural gas probable reserve is 8.8 trillion cubic meters, cumulative proven reserve is 3.62 trillion cubic meters, and recoverable reserve is 1.51 trillion cubic meters. Its total natural gas production in 2003 only accounted for 1.3% of the world total, and per capita production was 1/172 of Russia. Shortage of oil and gas resources is obvious in China.

74.1% of China's oil import in 2004 came from the Middle East and Africa. Its reliance on the Middle East oil is far above the world recognized safe level. The undiversified oil source and increasing reliance on import are problems critical to China's energy security and need to be resolved. The safety of its "oil route" is another biggest challenge to China's oil security. Of more than 100 million tons of oil imported by China, only a small proportion is transported via ground from Russia, Kazakhstan, and Mongolia. The remaining 90% has to be transported by sea, through a number of risky straights and areas. China must find alternative and reliable oil sources, as well as safer transportation routes.

Russia's abundant energy reserve is very important to the economic development of other countries, especially its neighbors. It is estimated that the oil reserve of the gulf region would be used up in 50 years time. By then, Russia would become the most important oil producer and would be critical to the world oil market. As a long term and steady oil-gas producer and

exporter, Russia would be the best option for China. Importing Russian oil by land is economically efficient and politically safe, and it should be a strategic priority for China's long term energy solution.

## II. China – Russia Energy Trade and Cooperation is at an Initial State

The energy dialogue between China and Russia started 15 years ago. Although the two countries have made a lot of efforts in the key area of pipeline construction, the overall progress of energy cooperation is not satisfactory. In 2003, China imported 2 million tons of oil from Russia, which is less than 2% of its total import, and 1% of Russia's total export. Since 2004, the volume of oil trade began to increase rapidly. According to their agreement, Russia should export 10 million tons and 15 million tons oil to China respectively in 2005 and 2006. According to Russian statistics, its actual oil export to China in 2005 was 7.7 million tons, 30% higher than the previous year, but still below expectation. Currently the oil transportation from Russia to China is mainly by railway. The low handling capacity and relatively high cost of railway transportation are constraints of oil trade development and energy cooperation between the two countries.

China and Russia are working on the following four energy projects:

- Russia – China pipeline construction
- West – East gas transfer project (feasibility study has been approved by both countries, and the implementation is in progress)
- Gas transfer from Irkutsk's Kovyktinskoye gas field to China and ROK (feasibility study underway)
- Yakut-Sakha Republic to China gas project (feasibility study completed).

Among all cooperation projects, the pipeline construction between China and Russia has experienced most changes. Following the cancellation of Angarsk - Daqing pipeline and Angarsk – Nakhodk pipeline, Russian government approved Taishet – Nakhodk pipeline by the end of 2004. As per the schedule, phase one of Taishet – Nakhodk pipeline will be completed by 2008. It will be able to transfer 30 million tons of oil to China per year, of which 20 million tons to Daqing. The 2<sup>nd</sup> phase will extend the pipeline to the Pacific coast.

In addition to oil, China and Russia's power trade is also growing quickly due to the **complementarity** of their power sector. The Far East area of Russia has a power oversupply while China's northeast has a lake. For cost reasons, some cities in China's northeast has initiated small scale power cooperation with the Russian side. According to Russian statistics, it supplied 300 million KWh of electricity to China in 2004. China and Russia are negotiating on transmitting power to China's west.

China and Russia have reached consensus that energy is one of the most prospective and important areas of cooperation. Firmly implement the cooperation program in the oil and gas sector is critical to their strategic partnership. Cooperation has started between the leading

energy companies of the two sides. Though the total volume is not big yet, energy trade will definitely become a significant part of their bilateral trade in future.

#### (I) Pipeline Agreement between Gazprom and PetroChina

In the next 15 years, Asia Pacific's demand for natural gas will increase significantly. The total demand will be twice as much as Europe. Gazprom, the leading Russian gas company, has set exploring new market (especially the Asia and Pacific market,) increasing the share of energy business, expanding oil operation, and upgrading its oil and gas refining capacity as the 4 pillars of its development strategy. Gazprom has reached agreement with PetroChina, to build two pipelines for transporting 68 billion cubic meters of natural gas to China per annum. The west one, starting from Siberia to China's Xinjiang via Altai will be connected with China's west to east gas pipeline, and then supply gas to China's east coast. The east line is able to transport the natural gas either from Sakhalin, or from **Kaiyankim?** gas field.

#### (II) Successful Oil Trade between Sinochem and Posneft

In June 2006, Russia's TNK-BP announced that it had entered into agreement with Sinochem on acquiring Udmurtneft. Sinochem would then transfer 51% of Udmurtneft stake to its partner in this deal, Posneft. Sinochem's acquisition of Udmurtneft is a milestone in the development of China – Russia bilateral relations, as well as a breakthrough of China's investment in the Russian energy market. In this transaction, Sinochem gave up some of the interest by transferring the shares to Posneft who helped Sinochem to win the bid. But it has gained the access to the Russian oil recovery market.

#### (III) PetroChina's Equity Investment in **Russian Oil**

In July 2006, PetroChina acquired 66,225,200 shares of Russian Oil for USD500 million, successfully achieved its strategic objective of investing in large oil companies in Russia. PetroChina only owns less than 1% of Russian Oil, and is no able to influence its decision making. But through the equity participation, Chinese companies are able to obtain the first hand information of Russian's oil industry, which will pave the way for future investment in Russian's energy sector, and serve their long term strategy.

### III. Analysis of the Advantages and Problems of China-Russia Energy Trade and Cooperation

Economic globalization and regional integration are accelerating today. Since the Iraqi war, the world energy situation has experienced profound and rapid changes. In this context, all major oil producing countries in the world are actively seeking diversified buyers, and looking for global markets. In the meantime, the big oil consumers are also searching for different sources to purchase. This is a historical opportunity for China and Russia to cooperate in the energy sector.

#### (I) Three Major Advantages

## 1.Resources Advantage

Russia's oil reserve is one of the largest in the world. In west Siberia, east Siberia, and the Caspian Sea Basin, there are rich oil and gas reserves. These places are among the world top ten oil rich areas. Russia's daily oil production is 9.3 million barrels, account for 11% of the world total. China and Russia are highly complementary in the oil trade area, which makes their energy trade and cooperation possible and viable. The health bilateral political relationship has brought new opportunities and a brighter future for the energy trade. The sustainability and further improvement of this favorable macro environment need continued support and efforts from various sectors, including the strategic planning of energy companies.

## 2.Geographical Advantage

The unique geographical advantages are the basis for the China – Russia energy cooperation. As the two countries are connected by land and water, the oil transportation is very convenient, reliable, and cost efficient. Russia can satisfy China's demand by upgrading and connecting the existing pipelines easily. Of all overseas oil supply options, Russia is the best in geographical terms because of its abundant reserve and that its oil can be delivered to China by land. Most of Russia's proven reserves are close to China, and the existing oil fields are not far from the Chinese markets. According to regional economics principles, when the energy base has a large reserve and is close, it would save transportation time and cost, as well as reducing risks and increasing economic profit.

## 3.Political Advantage

Both Chinese and Russian governments have good control of the political stability, and their domestic and foreign policies are well established. Russia has set developing the energy industry as a strategy to revitalize the nation. In China's 11<sup>th</sup> Five-Year Plan, the energy development strategy is to "depend on domestic resources and explore overseas market." Their energy strategies are consistent with the two countries reality, and are compatible with, and are complementary to each other. From security perspective, China and Russia share a common ground, and have similar positions on global and regional security and development issues. By cooperation, their energy sector can support and backup each other. For geopolitical reasons of the post cold war era, the United States has been trying hard to control the belt of West Asia, Central Asia and East Asia. NATO's eastward expansion, America's military presence in Central Asia and the upgrade of US-Japan security scheme make Russia and China feel more imperative to secure a peaceful and stable regional environment. The two countries foreign policy will have no other choice but to work together for the peace of Asia and the energy security of the region.

## (II) Issues and Problems

China and Russia share a strong common ground for energy cooperation: China's rapid growth requires a stable and sustainable oil and gas supply; and Russia is desperate to develop its energy industry. But to achieve successful cooperation, there are a lot of things need to be done. The

most important issue at present is that Russia's oil export to China is low: only 5% of China's total purchase. In 2005, Russia exported 7.7 million tons of oil to China, lower than its commitment of 10 million. The major reason for this shortfall is the weak handling capacity of the Siberia railway. In addition, Chinese companies are faced with difficulties and impediments to invest in Russia's energy sector, and the energy cooperation projects available for cooperation are limited. They need to boost their energy cooperation.

The existing Far East railway, **Back** Baikal railway, and east Siberia railway already have the oil transportation capacity and don't need additional investment for upgrade. There are adequate tank wagons. Since Russia's railway is able to satisfy the demand of East Siberia – Pacific pipelines, we believe it is able to transport 10 million tons of oil to China per annum.

At present, the two-way electrical Siberia railway is under operating. Russia is marketing this railway's service to China, Japan, ROK, and Europe in order to benefit from the Asia-Europe trade. In May 2005, China launched regular container train express service to Germany via this railway. By July 2005, the exports through the railway ports of Manzhouli and Suifenhe reached 11 million tons. If this trend continues, the annual export would be able to meet 20 million tons as agreed. Together with another two railways through Mongolia and Kazakhstan, the target of transporting 10 million tons of oil by rail is able to be met.

The major constraint of China – Russia oil trade is that since the Yukos case, the Russian government has increased oil export tax repeatedly. As a result, the profitability of oil export is lower than domestic trade. Oil companies are significantly discouraged from the export business. Between Feb. 1, 2004 and June 1, 2005, Russian government adjusted oil export tax 5 times. Export tax per ton firstly increased USD41.6, and then to USD69.9 on Aug. 3, 2004, to USD101 on Dec. 1, 2004, to USD102 on Apr. 1, 2005, and to USD136.2 on June 1, 2005. Yukos used to request the government to reduce the tax on oil export to China, and Rosneft, Russia Railway Company also made similar requests. But the government policy is that the tax rate could be reduced by 10% when a single oil company's export volume to China reaches 30 million tons, which is beyond any anyone's current ability.

In natural gas area, China and Russia have announced to build two pipelines and would transport Russian gas to China within 5 years. Before this target can be met, the two parties would have a tough negotiation on the price. The Russians want to sell their gas at a "market price" which is calculated by the same formula as its gasoline and diesel export to Europe. But the Chinese side is reluctant to enter into any long term import contract with Russia because the price is pegged to international market price, which is higher than China's current level. As a result, the cooperation has a lot of difficulties in real implementation.

#### IV. Future Trend of China – Russia Energy Trade and Cooperation

With China's economic growth, its demand for oil and gas will increase in the long run. Energy trade and cooperation between China and Russia are beneficial to both as they will contribute to China's energy security on the one hand, help Russia to enter the global oil market and develop its

economy on the other hand. Their energy cooperation is an inevitable trend, and has a bright future.

#### (I) Upgrade of Oil Trade and Cooperation

China and Russia are interested in boosting the cooperation in energy area. Energy trade, especially oil trade will contribute to their bilateral relationship and economic growth. The two parties have announced that the bilateral trade volume would reach USD60 to 80 billion, of which energy is a major component. In order to achieve this objective, they need to take initiatives to create favorable conditions, i.e. the Russian authorities may need to reduce the oil export tax rate to a reasonable level.

We estimate that Russia's oil export to China will increase significantly to 12 million tons in 2006 for the following reasons. One, by upgrading and renovating the railway infrastructure and export ports to China, the oil handling capacity of the Russian railway will be considerably improved. Two, since Jan. 1, 2006, the railway transportation rate to China has decreased by 16.9%, which is an incentive to Russian oil companies to export to China. Three, Russia is going to export oil to China via the Atasu - to Allah Mountain Pass section of the Kazakhstan – China pipeline, which will boost the total trade volume.

In future, Russia will expand its oil export to China through the Far East pipelines which will be developed in two phases. The first phase is from Taishet to Skovorodino, and the oil export facilities at Perevoznaya Bay in its Far East coast will also be built. The designed handling capacity of the phase one of the Far East pipeline is 30 million tons per year, of which 20 million will be supplied to China, and the remaining 10 million to the Pacific by railway transportation.

#### (II) Gas Export to China

Russia is the largest gas producer in the world, but it is not exporting to China yet. Following the signing of energy agreement between the two countries, a panel of Chinese and Russian specialists is reviewing the feasibility of investing in the west gas pipeline. The implementation of the agreement will depend on Russia's commitment and China's regulatory policy change. By 2020, Russia will supply more than 40 billion cubic meters of natural gas to Asia and Pacific countries including China. Japan and ROK are potential buyers of Russia's Far East natural gas pipeline, but the largest buyer will be China who will have 80 billion cubic meters of shortfall in 2020.

#### (III) The Three Steps in Power Cooperation

7 - 10 million KWh of the electricity generated by the coal and hydro power plants of Siberia is not used. An important part of Russia's power export to China is to develop a 5-11.5 KV power transmission network. The first step is the connection of Russia's Far East grid to China's Heilongjiang grid. The transmission power will be 600 to 700 MW, and export 3.6 – 4.3 billion KWh electricity per year. The next step is the power transmission at 500 KV direct current from Far East Grid to Liaoning Grid. The transmission power for this section is 3000 MW, and the

annual transmission is 16.5 to 18 billion KWh. The third step is to transmit power to China's Northeast or Northwest at 800 KV direct current and 6400 MW. The annual transmission will be 30 billion Kwh.

In the power cooperation area, Russia is expecting more than the simple electricity transmission. The cooperation may include joint development of projects, construction of networks, manufacturing and supply of power generation facilities. Under this framework, China is not only a power importer, but also has other investment opportunities.

#### V Regional Impact (Conclusion)

China and Russia both are big nations in the NEA. Since China is a major energy importer and Russia is a large exporter, their energy cooperation is a key component of the regional energy cooperation. The two countries are developing their cooperation extensively and intensively. In addition to energy trade, they are moving into the areas of production and investment. The energy cooperation of North East Asia region is complicated, and in the medium and long run, a multilateral scheme would be established. But right now bilateral dialogue is irreplaceable, and will continue for a couple of years for China and Russia to resolve their issues and problems. They also need to settle down the problems with other countries through bilateral negotiation. Before the bilateral issues could be resolved, multilateral cooperation is very difficult to come true. China and Russia should use their influence to play an active role in sharing the risks and maintaining NEA energy security.