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The Russian Energy Outlook and Its Influence on East Asia

MOTOMURA MASUMI

INTRODUCTION

Russian energy is becoming more important for Northeast Asian countries. For a decade, Russia has steadily increased its oil and gas production and has now embarked on expansion to the East, adding to the traditional European market, by constructing several new pipelines and elaborating new distribution plans. In addition to this, new energy flows by oil tanker and as liquid national gas (LNG) from the previously isolated Sakhalin offshore shelf are now coming on line as key sources for Asian consumers.

The aim of this article is to describe the production forecast of Russian oil and gas and its emerging oil and gas flows, especially to the east. The activity of Russian oil companies will be examined and we will see that most companies' production policies are succeeding in creating stable production growth.

The oil pipeline plans are also analyzed as the embodiment of Russian longterm energy strategy, which will affect the targeted regions. Here, special attention should be paid to Northeast Asia, where energy-dependent countries have traditionally not been cooperative with each other, but recognize that they now need to concert their policy to avoid being played off against each other.

Meanwhile, Russian gas exports are facing competition. Turkmenistan is strengthening its ties with China and the possibility of a gas pipeline project to China being realized is increasing. Gas prices play a decisive role in this case.

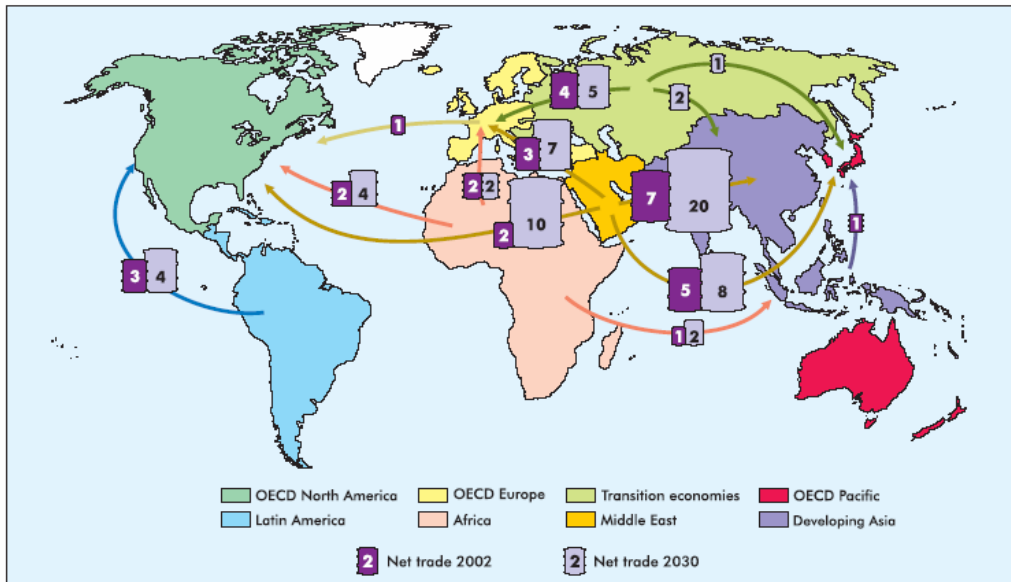
FUTURE ENERGY FLOW FROM RUSSIA

Shift of Global Energy Flow up to 2030 as Forecast by IEA

The shift of global oil flows in the future is illustrated by the International Energy Agency (IEA) in Fig. 1 below.¹ The actual global oil flow in 2002, mainly achieved by pipelines and tankers, is shown by the size of barrels on the left side with numbers for crude oil in millions of barrels per day. The barrels on the right side are the forecast for the year 2030. Though IEA's forecast of oil demand for 2030 seems too high due to the effect of high future oil prices as a demand dampener not being sufficiently taken into consideration, the forecasted trend itself is persuasive. This study was well-cited and is still supported by most energy researchers.

1 International Energy Agency, *World Energy Outlook 2005* (Paris: 2005).

Fig. 1. Inter-Regional Crude Oil Trade in 2002 and 2030 (in million barrels per day)



Sources: IEA, *World Energy Outlook 2005* (Paris, 2005).

We might expect the following changes in global inter-regional oil flows during the next three decades: It is obvious that the world oil demand is continuously increasing and especially oil-starved East Asia will increase its oil imports, which will change the oil flow for the future as follows:

- 1) The Middle East increases its importance as oil supplier until 2030.
- 2) Oil producers in East Asia (like Indonesia) are to lose their capacity for oil export and the oil flow in this region will no longer go long distances to market.
- 3) The oil flow from Russia will acquire a new route towards the East, and will have two fronts, i.e. the traditional market of Europe and the emerging market of East Asia, including China.

Though Russia is not as powerful as OPEC countries as an oil supplier, it will be able to create a new energy flow to Northeast Asia in the next decade, if enough oil production inside of Russia is secured.

The Nature of International Pipeline Strategy

Pipeline systems have a characteristic of “self-organization.” We quite often see “positive feedback” while developing a pipeline system: once the first trunk line was constructed, new additional routes joined to the existing lines and finally grew into a total system connecting certain oil and gas regions to various markets. When there is competition between multiple plans, the plan which successfully incorporates the idea without delay will have the power of determination for the future development of the region. “Pipeline geopolitics”

Fig. 2. Eurasian Oil Pipeline Network



Notes: Solid lines show existing pipelines and broken lines - planned ones.

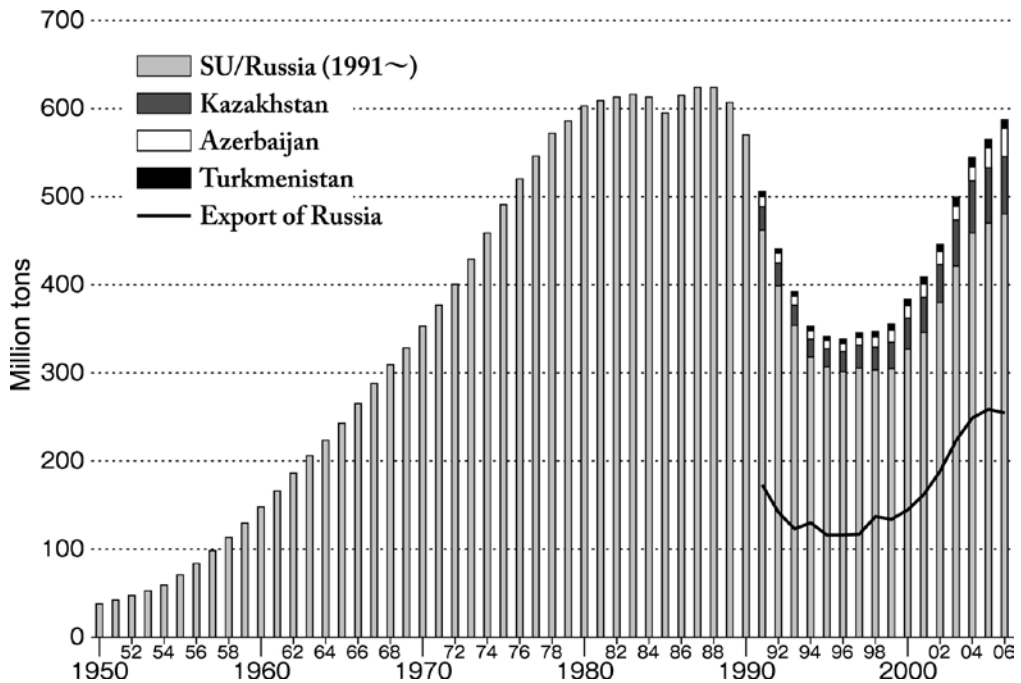
Sources: Compiled by the author based on *The Atlas of Oil Pipelines in Russia, CIS, Eastern & Central Europe* (Moscow: Cartographic Information Centre "INCOTEC," 2005).

is a common word, however the reality is not only "geopolitics" but rather economics, which is a complex competitive interaction among effectiveness, possibility and cost.

As will be shown in this article, Russia is able to supply both oil and gas to both Europe and Northeast Asia, and will sustain its influence on these regions. To establish an energy flow to the emerging market of Northeast Asia is now a priority for Russia. On May 26, 2004, Vladimir Putin gave his annual address to the Federal Assembly after being elected with an overwhelming 72% of support in March. In his address Putin stressed the importance of the trunk pipeline policy, as part of infrastructure development.

"...among the most important tasks that the country faces, I would like to single out one especially - the development of transport infrastructure. When we take into account the size of Russia and the geographic remoteness of certain territories from the political and economic centers of the country, I would say that the development of infrastructure is more than an economic task. Solving it will not just directly affect the state of affairs in the economy, but ensure the unity of the country as a whole letting people feel that they are citizens of a united, large nation, and that they can make use of its advantages. ... At the same time, a modern, well-developed transport infrastructure

Fig. 3. Trend of FSU Oil Production since 1950



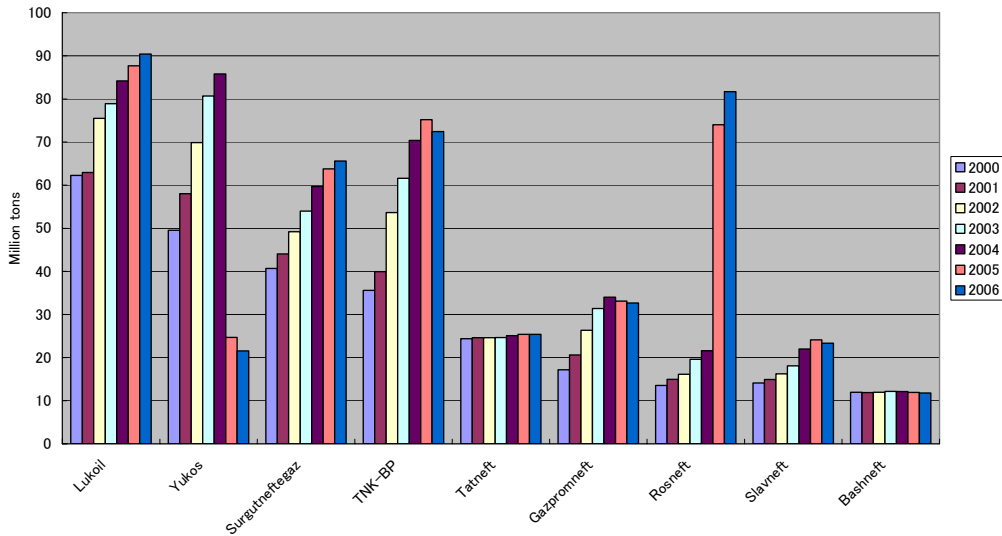
Sources: Compiled by the author from Aleksei M. Mastepanov, *Russian Energy Strategy of 21 Century* (Japanese translation, Tokyo: Tozai Boeki Tsushinsha, 2001), *Interfax* and other sources.

is capable of turning Russia's geographical features into a real competitive advantage for the country."²

Putin went on to specify the following five oil pipeline projects in his address: i) expanding the capacity of the Baltic Pipeline System, ii) opening the West Siberia-Barents Sea Pipelines, iii) determining routes from oilfields in East Siberia, iv) bypassing the Bosphorus and Dardanelles Straits, and v) integrating the Druzhba and Adria oil pipelines (see Fig. 2). Adding to this, he stressed the necessity to develop the gas distribution network, including expansion to the East of Russia as well as the new export pipeline to Germany, named the North European Gas Pipeline (Nord Stream).

Russia occupies the northern half of the Eurasian continent, which has two growing economic centers on both sides, Europe on the west and the Northeast Asia region on the eastern side. We should not miss Putin's strong and long-range intention to increase national power by arranging and re-arranging the transportation systems. This is key background in order to understand his pipeline policy.

2 Annual Address to the Federal Assembly of the Russian Federation on May 26, 2004. Website of the President of Russia [http://www.kremlin.ru/eng/speeches/2004/05/26/2021_64906.shtml].

Fig. 4. Trend of Oil Production by Russian Oil Company

Sources: Compiled by the author from *Augus FSU Energy*, January 26, 2007 and other materials.

PRODUCTION FORECAST OF RUSSIAN OIL AND GAS

Production History of Russian Oil and its Outlook

Oil production in Russia was 480.48 million tons (9.61 million barrels per day) in 2006, which is only 2.2% higher than 2005.³ In actual fact, the growth rate of oil production in Russia is continuously decreasing: i.e. 11% in 2003, 9% in 2004, and 2.5% in 2005 (see Fig. 3). This trend of leveling off is mainly due to the crude oil export tax, which recorded a historic high of \$250.3 per ton (\$34.29 per barrel) in October and November in 2007,⁴ and careful observation by the Ministry of Natural Resources, which is watching over the oil companies to keep the oil production level of each oil field within the amount stipulated in the production license issued by the ministry.

However, the government of Russia is not pessimistic about future oil production, which will still increase gradually and actually exceed the optimistic case of the forecast of “the Russian energy strategy up to 2020” released by the then Ministry of Fuel and Energy in 2003.

Table 1. Recent Oil Production of FSU Countries (in millions of tons)

Year	1999	2000	2001	2002	2003	2004	2005	2006
Russia	304.8	323.3	348.1	379.6	421.4	458.8	470	480.5
Kazakhstan	30.1	35.3	40.1	48.2	52.4	60.6	62.6	66.1
Azerbaijan	13.9	14.1	15	15.4	15.5	15.6	22.4	32.5
Turkmenistan	7.1	7.2	8	9	10	9.6	9.5	8.1

Sources: Compiled by the author from *BP Statistical Review of World Energy* (2007).

³ *Interfax*, February 9, 2007.

⁴ Russian Governmental Resolution No. 587 (September 13, 2004).

Production Trend by Company

Even though several oil companies showed a decline in oil production, three of the largest four companies indicated steady or even lively growth (Fig. 4).⁵ This would be the reason for the steady growth of nationwide oil production.

Lukoil has been the number one oil producer in Russia since 1993, except for a period in 2003-2004 in which Yukos was at the top. Lukoil's level of oil production in 2006 reached 90.417 million tons, 3.1% growth from 2005, and has shown stable growth throughout this decade. Lukoil is also active in foreign countries like Uzbekistan, Turkey, Iraq, Venezuela etc. It is especially active in the USA with its network of service stations purchased from Getty Oil in the 1990s.

Yukos was looking like it was going to become Russia's top oil producer, exceeding Lukoil with technology imported from Schlumberger for its horizontal drilling and hydro-fracturing operation in oil fields since 1998. However, the main part of Yukos' production arm, Yuganskneftegaz, was sold to Rosneft at the end of 2004. Since then Rosneft has become one of the major oil companies in Russia, while Yukos has shrunk in its scale to one third of what it previously was. The rest of the business entities of Yukos have been auctioned off over the course of 2007. Most of them have been absorbed by Rosneft.⁶

Rosneft increased its production to 81.711 million tons in 2006, showing 10.3% growth from 2005, which is remarkable because its policy of oil field operation has proved to be the main driver. Rosneft is a state owned oil company whose technical policy is considered to be rather conservative and uninterested in Western oil technologies. However, most of Yukos' capable managers were appointed managers of Rosneft after the transfer and successfully inherited Yukos' achievements, which proved to be effective during their operations in the early 2000s.⁷ Adding in the good results of Sakhalin-1, which started production in September 2005 and reached its plateau production at 12.5 million tons per year (250 thousand barrels per day) in February 2007 and the Vankor oil field in the Evenki Autonomous District, which will start production in 2008 and will flow to the Pacific, Rosneft's activities are expected to be even more successful in coming years.

Rosneft plans to produce 103 million tons of oil in 2007, which will make it the No. 1 oil producing company in Russia. Rosneft also plans to increase production to 140 million tons by 2011-2012, Bogdanchikov, the president of Rosneft, said on September 1, 2007. Excluding the assets newly acquired from

5 The source of this figure (*Argus FSU Energy*) is a weekly magazine on the former Soviet Union's energy industry. There is a charge for access to their website which is <http://www.argusmediagroup.com/pages/StaticPage.aspx?tname=Services&pname=Publications>

6 *Interfax*, August, 16, 2007.

7 Personal communication from Thane Gustafson of Cambridge Energy Research Associates (CERA) in April 2007.

Yukos, Rosneft has set its production target at 90 million tons for 2007.⁸ The production growth of Rosneft has been achieved not only by the Yukos acquisition, but also by its own successful investment in Sakhalin, East Siberia, and other areas.

Surgutneftegaz produced 65.552 million tons in 2006 and showed 2.8% growth compared with that of 2005, however its production growth in 2007 is forecasted at 0.9%⁹ and the company is facing a tough situation with regards to oil replacement since its new reserves are rather limited.

TNK-BP's oil production in 2006 is 72.421 million tons and is No. 3 among Russian oil companies. This volume is a 3.7% decline compared with that of 2005, however it does not imply a serious situation, because this year TNK-BP sold its Volga-Ural subsidiary, Udmurtneft, to Sinopec, one of the Chinese National Oil Companies, which is a kind of "asset management," disposing of an old oil production arm and concentrating on the prospective oil fields under high-end operation, like the Samotlor oil field in West Siberia.¹⁰ After that a 51% stake of Udmurtneft was acquired by Rosneft and Sinopec kept 49%.

The oil production of Gazpromneft, formerly Sibneft, fell down to 32.669 million tons, which is a 1.4% decrease from 2005. This is due to Sibneft's policy of distributing most of its profit to shareholders and neglecting new investments in the field, which has caused a delay in the development of oil fields.

Tatneft, with its production of 25.405 million tons, and Bashneft at 11.728 million tons, are both located in the Volga-Ural oil region, which has matured, reaching a stable production level, with no prospects for expansion.

Gas Production of Russia and Its Forecast

Gas production in 2006 was 656.233 billion cubic meters, 2.4% growth compared with 2005.¹¹ This is not a bad result compared with the foregoing trend of production levels over the last few years (Fig. 5).

Table 2. Russian Natural Gas Production and Export (in billion cubic meters)

Year	1999	2000	2001	2002	2003	2004	2005	2006
Total Production	590.1	584.1	581	596.6	617.6	634	641.9	656.2
Gazprom	545.5	523.1	512	523.8	540.2	545.1	547.9	550.5
Independents	6	18	n.a.	29.9	33.5	n.a.	36	47.3
Oil Companies	38.6	43	n.a.	42.9	43.9	44.9	58	58.4
Gas Export	126.8	129	126.7	129.4	138.9	149.1	151.3	151.5

Sources: Compiled by the author from Website of Gazprom; *Gas Matters* (August 2006); *Interfax*, January 9, 2007; *BP Statistical Review of World Energy* (2007); Jonathan Stern, *The Future of Russian Gas and Gazprom* (Oxford University Press, 2005).

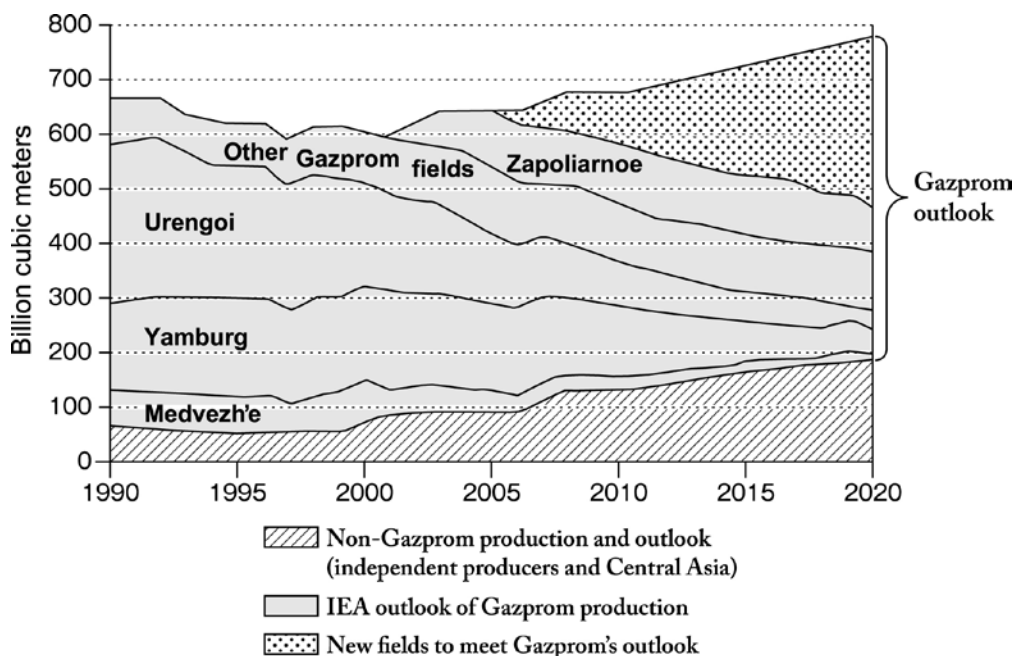
8 *Interfax*, September 3, 2007.

9 *Interfax*, April 18, 2007.

10 *The Moscow Times*, June 28, 2006.

11 *Interfax*, February 9, 2007.

Fig. 5. Russian Gas Supply Outlook



Sources: IEA, *Optimizing Russian Natural Gas, Reform and Policy* (Paris, 2006), p. 193.

Gazprom's share was 92% in 1999 but steadily declined to 84% in 2006, which created a lot of criticism against Gazprom's activity inside of the Russian Government. In contrast, independents like Novatek have been increasing their production rate, especially in the 21st century,¹² which illustrates their distance from Gazprom with regard to investment policy and efficiency in operations. There has also been an increase of gas production by oil companies. The production share of the independents climbed up to 7%, while that of oil companies was 9% in 2006.

In the 1990s, three super-giant gas fields named Urengoi (discovered in 1966), Medvezh'e (discovered in 1967) and Yamburg (discovered in 1972) occupied 80% of the gas share in West Siberia. However, since the end of the 1990s the production level of these three fields has been declining rapidly. The commencement of production at Zapoliarnoe in 2001 enabled the total production level in Russia to reverse its negative trend and it increase. However, this effect will not last long and Gazprom needs to develop new gas fields to meet its outlook (Fig. 5).

12 *Gas Matters*, August 2006 (This is a publications, data and research business offering insight and analysis on the global natural gas and LNG industry. There is a charge for access to their website which is <http://www.gas-matters.com/>); *Interfax*, January 9, 2007.

Vladimir Milov, President of the Institute of Energy Policy, and his co-authors identified several problems for the Russian oil and gas sectors and asserted that Russia's energy gap between domestic demand and Gazprom's supply capacity may grow to 200-230 billion cubic meters per year in 2010.¹³ This view seems to be one-sided since the authors assume production growth for Gazprom of only five billion cubic meters from 2004 to 2010. This is completely different from the past growth trend and neglects the effect of Gazprom's new investment policy based on the higher domestic gas price. At the same time, the contribution of emerging gas production from independents and oil companies, which occupies 16% of Russia's total gas production now, is disregarded as well in calculating the gap between domestic demand and the country's production capacity

The budget of Gazprom for the year 2007 is \$19.9 billion (531.78 billion rubles), which increased 45% compared with that of 2006,¹⁴ though this is actually regarded as not large enough. This illustrates the change of the policy of Gazprom with a move towards proactive development of gas fields. For instance, super-giant Bovanenkov field on the Yamal Peninsula with reserves of 143.85 trillion cubic feet, was discovered in 1971 but had been left aside for more than thirty years due to tough drilling conditions in the permafrost region, is now scheduled for development. This will surely contribute to the forecast of gas production by Gazprom. The budget for 2008 is \$23.3 billion and with \$26.3 billion for 2009, the upward march of Gazprom is set to continue.

RUSSIA'S NEW OIL PIPELINES TO EAST ASIA

A plan to lay pipeline to the Daqing oil field in the Northeast region of China from the Angarsk terminal in the Irkutsk Oblast, East Siberia, was agreed at the meeting between Putin and the Chinese President Jiang Zemin in July 2001. As a counter, Transneft, which has the Russian monopoly of transportation of crude oil, suggested a route from Angarsk to Nakhodka.¹⁵ Both plans were endorsed by then Premier Kasianov in March 2003 and described as "the Angarsk-Nakhodka route accompanied by the spur to the Daqing oil field" – as a compromise.¹⁶ The Angarsk-Nakhodka route has now been renamed the "East Siberia-Pacific Ocean (ESPO) Pipeline."

However, the plan has since changed several times. In July 2003, the route was changed to the north of Lake Baikal from the south, because crossing the

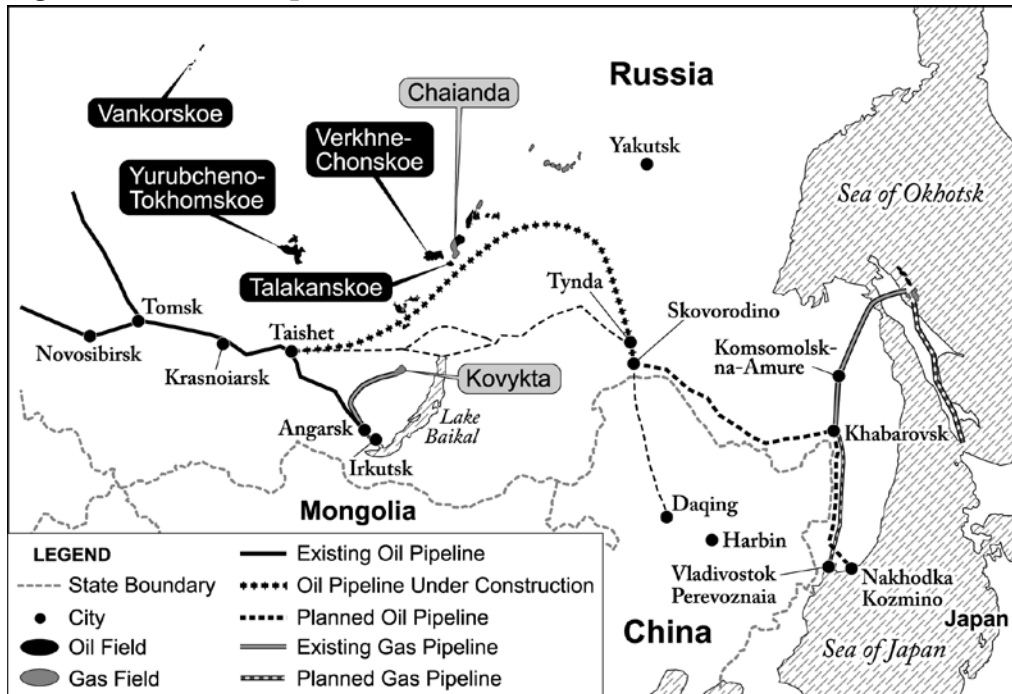
13 Vladimir Milov, Leonard L. Coburn and Igor Danchenko, "Russia's Energy Policy, 1992-2005," *Eurasian Geography and Economics* 47:3 (2006), p. 305.

14 *International Oil Daily*, October 30, 2006 (This is a publications, data and research business offering insight and analysis on the oil and gas business. There is a charge for access to their website which is http://www.piwpubs.com/publicationhomepage.asp?publication_id=31).

15 *Interfax*, July 19, 2001.

16 *Vedomosti*, March 17, 2003.

Fig. 6. Oil and Gas Pipelines in East Siberia as of December 2007



Sources: Compiled by the author.

national park in the south of the lake would have been a violation of the Russian environmental law. In February 2004, the route was changed again to pass through Taishet, a parting from the Siberian Railway and BAM Railway, passing by the northern coast of Lake Baikal and finally reaching the Primorsk Krai via Skovorodino (see Fig. 6), which was formally issued as the governmental decree by then Prime Minister Fradkov in December 2004.¹⁷

The construction of the pipeline consists of two phases. The first phase is to build the section from Taishet to Skovorodino with a capacity of 600 thousand barrels per day (30 million tons per year), which started in April 2006. This is expected to be completed in 2008. This route has shifted further north from the original plan, passing by the oil region, by the order of Putin two days before the start of construction (Fig. 6). The modification is beneficial for oil companies, since they only need to lay short connecting pipelines from the producing fields to the trunk pipelines. The timing of the construction of the second phase from Skovorodino to Nakhodka depends on the magnitude of discovered reserves in East Siberia. After the completion of the first phase, oil will be transported from Skovorodino to Nakhodka by train. The second phase will start after confirming the production rate achieved by the exploration activities in East Siberia.

¹⁷ Russian Governmental Resolution No. 1737 (December 31, 2004).

The final capacity of this pipeline is 1.6 million barrels per day (80 million tons per year). The supply through this pipeline, together with the output from Sakhalin starting in 2008 (estimated at 0.4 million barrels per day, namely, Sakhalin-1: 0.25 million and Sakhalin-2: 0.15 million) through the late 2000s and early 2010s, is to cover around 12% of demand for the market of Northeast Asia, which is importing 11.3 million barrels per day including oil products in 2004 (5.1 million for Japan, 3.0 million for China, 2.2 million for Korea and 1.0 million for Taiwan).¹⁸ The terminal at Nakhodka is located close to these markets, which takes only several days by oil tanker. And moreover, there is no political choke point of the transportation in the Sea of Japan or the East China Sea. The ESPO Pipeline will play an important role for the energy security of Northeast Asia. Iurii Trutnev, Russia's Natural Resources Minister, said that there is enough volume of oil to transport, as oil companies have submitted bids to transport oil along the ESPO in the following volume: 29.8 million tons for 2009, 33 million tons for 2010 and 38.3 tons for 2011.¹⁹

In July 2007, China National Petroleum Corporation (CNPC) and Transneft signed an agreement stipulating the construction of a Chinese leg of the ESPO that would run 70 kilometers from Skovorodino to the Chinese border on the Amur River as a part of the Daqing Spur. In Chinese territory CNPC will construct its own pipeline.²⁰ At the end of August 2007, Semion Vainshtok, the President of Transneft, made a report to Putin that the first phase would have a capacity of 600 thousand barrels per day (30 million tons per year) from Taishet to Skovorodino, with a capacity of 300 thousand barrels per day (15 million tons per year) for the Daqing Spur and another 300 thousand barrels per day (15 million tons per year) to Kozmino, the terminal at Nakhodka port, by rail from Skovorodino. Construction design for the second phase is already completed, with a capacity of 1.6 million barrels per day (80 million tons per year) from Taishet to Skovorodino, a capacity of 1 million barrels per day (50 million tons per year) from Skovorodino to Kozmino and a capacity of 600 thousand barrels per day (30 million tons per year) for the Daqing Spur. Branches will also be built to oil refineries in Khabarovsk (5 million tons per year) and in Komsomolsk-na-Amure (7 million tons per year).²¹

It has been discussed that the spur to Daqing raises concerns that this route connects only to the market in Northeastern China, not internationally, which will create "a monopoly of demand." That means that after completion of the pipeline the demand side will take a stronger position to decide the price of crude oil, which Russia could not resist. Such an incident did occur in the case of "the Blue Stream" gas pipeline to Turkey in 2003,²² which is well

18 IEA, *Energy Balances of OECD Countries, 2003-2004* (Paris, 2006); IEA, *Energy Balances of Non-OECD Countries, 2003-2004* (Paris, 2006).

19 *Interfax*, August 29, 2007.

20 *International Oil Daily*, July 20, 2007.

21 *Interfax*, August 28, 2007.

22 Arkady Ostrovsky and Leyla Boulton, "Turkey Tries to Rearrange Russian Gas Pipeline Deal," *Financial Times*, July 3, 2003.

remembered by Russian politicians and business people. To avoid such a situation, it is indispensable for Russia to have the Pacific route for the diversification of transport routes.

In September 2007, Sergei Bogdanchikov, President of Rosneft, proposed to postpone construction of the Daqing Spur in Russian territory from Skovorodino to the Amur River, though the agreement on this and the first payment by CNPC for the feasibility study had been made in July, only two months earlier.²³ Adding to the influence of monopoly, Rosneft may also fear that the Daqing Spur could have a negative effect on the second phase, when Rosneft plans to export oil products from a new refinery at Nakhodka. This means there is still controversy in Russian oil circles over the implications of the Daqing Spur and as of September 2007, CNPC is still waiting on a Russian decision.

The delay of the Daqing Spur does not affect China's oil importing schedule. Oil is a commodity and so far there is no obstacle to importing crude oil from the international market, even from Kozmino in the future. These complexities and uncertainties suggest that it is high time for countries in the Far East, as a potential market of Siberian crude, to pursue discussions to eliminate concerns regarding disruption of crude oil importing.

SLOW PROGRESS OF RUSSIA'S NEW GAS PIPELINE SYSTEM TO CHINA

Kovykta

Compared with oil flow development in East Asia, discussion of gas flow to the East, especially to China, is stagnant due to the large discrepancy of proposed gas prices between the supply side and the demand side.

The interest of CNPC in the Kovykta gas field in Irkutsk Oblast, East Siberia, dates back to 1995, when Sidanco, the licensee of the field at that time, and CNPC agreed to study development of the field and transportation of gas to China. The field was discovered in 1987 and is a unique gas field in East Siberia with reserves of 1.6 trillion cubic meters (56.4 trillion cubic feet). The feasibility study was carried out from 2002 by Russia, China and Korea after a long dispute regarding whether the pipeline route should pass through Mongolia or not, in which CNPC insisted on skirting Mongolia. The study was completed in November 2003, however it emerged that the project cost would jump from \$11 billion to \$18 billion.²⁴ In addition to that, there was a vast discrepancy of gas prices between Russia and China, which deadlocked the project.

Until recently, shareholders of the Kovykta field were TNK-BP (62.89%), Interros (25.8%) and the Irkutsk region's state property management committee (11.2%). Gazprom is interested in the development of this field, however, there is still a lot of controversy regarding the timing of development of the

23 OILRU, September 7, 2007 (This is a site of general daily news with free access at <http://www.oilru.com/>); *International Oil Daily*, September 12, 2007.

24 *International Herald Tribune*, August 14, 2003.

field. The field contains 0.3% helium, which brought another argument that the world demand-supply condition of helium is expected to be tight in the 2010s and that the best timing for this field to start production is no earlier than 2017.

There is a series of negotiations on gas prices between Russia and China, however the two are far from agreement. The recent figures are reportedly \$160-170 per 1,000 cubic meters by Russia and \$70 per 1,000 cubic meters by China at the end of 2005, which is still more than a two-fold discrepancy. The Ministry of Industry and Energy of Russia proposed a freeze of negotiation of gas export to China for two years in October, 2005.²⁵

On the other hand, the Ministry of Natural Resources has been showing serious concern about the situation of the Kovykta field for years, and mentioned repeatedly its intention to revoke the license. The field finally started producing and transporting gas to the city of Irkutsk through a domestic pipeline in 2006, however its amount of production was only 33.8 million cubic meters, which is only 0.4% of the obligatory amount of production stipulated in the license. The gas demand of Irkutsk city is thought to be approximately 2.5 billion cubic meters and the obligatory amount of 9 billion cubic meters which is stipulated in the license seems to be too large.²⁶ TNK-BP has responded to the ministry by arguing that the reason for the small production rate of the Kovykta field is the absence of an export pipeline to China, which should be constructed by Gazprom.

In June 2007, BP announced an agreement with Gazprom whereby TNK-BP, a joint venture with TNK in Russia, will sell 62.89% of its share in the Kovykta field and 50% of its share of the East Siberian Gas Company (ESGC), a gas distributor in the Irkutsk area.²⁷ TNK-BP's investment is reported at \$450 million,²⁸ and the book value is \$500 million.²⁹ Some analysts have said that the project is worth \$20 billion,³⁰ however this would be the value only after full development of the field and export to the international market is realized. Gazprom will pay between \$700 million and \$900 million for TNK-BP's stake.³¹

Andris Piebalgs, the EC Commissioner, commented that Russia has made an appropriate evaluation of TNK-BP's past investments, and this will have a good influence over the investment climate in Russia.³² Gazprom is making a

25 Sergei Glazkov, "Eastern Gas Pipeline on Hold," *Russian Petroleum Investor*, January 2006, pp. 24-29. This is one of the most popular monthly magazines in the Russian oil and gas business.

26 *Gazeta.ru*, June 6, 2007.

27 *International Oil Daily*, June 23, 2007.

28 *Vedomosti*, July 30, 2007.

29 *International Oil Daily*, June, 25, 2007.

30 *The Moscow Times*, June 26, 2007.

31 *The Moscow Times*, June 25, 2007.

32 *Interfax*, June 25, 2007.

development plan, but it is said that the production of the Kovykta field will not start earlier than 2017.

Altai

Putin visited Beijing in March 2006 and agreed with Chinese President Hu Jintao to enter into "The Strategic Partnership on Energy." Agreement was made between CNPC and Gazprom to export gas to China with 60 to 80 billion cubic meters per year to travel through "the West" and "the East" routes.

It was said "the East" route may be the pipeline from Kovykta or a line from Sakhalin, and "the West" route is also called "the Altai Pipeline System," which is to start from the gas-rich region of West Siberia, crossing the Altai pass to reach the Xinjiang Uygur region and then connect to the existing West-East pipeline to Shanghai.³³ The capacity is 30-40 billion cubic meters per year, and the pipeline will become operational in 2011. The pipeline will connect the Urengoi-Surgut-Cheliabinsk pipeline with the Nizhnevartovsk-Parabel-Kuzbass pipeline and will pass through the Novosibirsk region and Altai republic to the Chinese border (Fig. 7).³⁴

From April 2006, CNPC and Gazprom experts began to meet but the source gas field for this pipeline in West Siberia has not been announced yet. In private, it has been suggested that this project was proposed on purpose to break up a Turkmenistan gas pipeline project to China.³⁵

The plan of the Altai project rippled through the European markets when it was announced, because the China market emerged as a competitor against Europe in gas imports as a new situation in 2006. Long term contracts of gas sales and purchases for 20 to 25 years were made after the news of the Altai project between Gazprom and European energy companies like DONG of Denmark, E. On of Germany,³⁶ ENI of Italy,³⁷ and Gas de France (GdF) of France.³⁸ In addition to this, Gazprom was given direct access to the market in Italy and France.

In June 2007, Gazpromexport, an export arm of Gazprom, announced a policy to cancel the agreement on gas supply to China concluded in March 2006.³⁹ The Altai Pipeline project has met with a setback, because there was no compromise on gas price, which is almost similar to the Kovykta case. Some consultants hint that Gazprom may give up on China as a gas market and concentrate on the traditional European market, while Rosneft, which has close

³³ *International Oil Daily*, March 22, 2006; *Itar-Tass*, March 22, 2006.

³⁴ *Interfax*, September 8, 2006.

³⁵ By oral communication with Russian oil and gas consultants based in Moscow in late 2006.

³⁶ *Argus FSU Energy*, September 1, 2006.

³⁷ *Interfax*, November 15, 2006.

³⁸ *Argus FSU Energy*, December 22, 2006.

³⁹ *Argus FSU Energy*, June, 1, 2007; *Weekly Petroleum Argus*, June, 4, 2007 (This is a weekly magazine providing commentary on the oil business scene).

ties with the Far East, is to take care of the Chinese market.⁴⁰ For Gazprom the Altai project worked to a degree to create competition between markets in the West and the East.

Sakhalin

Sakhalin-2 is to start exporting 960 tons per year of LNG in the third quarter of 2008, which is around one year behind schedule. The LNG terminal has the possibility of expanding and accepting extra gas from Sakhalin-1 as an option. The authorized state body for PSA of Sakhalin-1 decided in August 2007 to consider the possibility of gas supplies to the Russian market as a "priority option."⁴¹ This means there is no possibility of gas exports to China, though ExxonMobil concluded a preliminary agreement of gas supply with CNPC in October 24, 2006.⁴² Sakhalin-1 alone can supply 3.2 billion cubic meters of gas by 2010, and 11.4 billion cubic meters from 2015 to 2020, which were under pressure by Gazprom to supply domestically, while demand in the Russian Far East would reach 13 billion cubic meters by 2010 and 16 and 19 billion cubic meters by 2015 and 2020, respectively, according to Gazprom.⁴³ If there is surplus gas at Sakhalin-1, the gas will be supplied to the LNG facility of Sakhalin-2 at Prigorodnoe to make LNG.

Eastern Gas Program

After five years of discussion, Industry and Energy Minister Viktor Khristenko signed a decree in September 2007 approving "a program to build an integral system for gas production, transportation and distribution in Eastern Siberia and the Far East, with a view to potential gas exports to China and other countries in the Asia-Pacific region."⁴⁴ This has been labeled the "East Gas Program."

According to this program, the east of the country plans to produce as much as 27 billion cubic meters in 2010, 85 billion cubic meters in 2015 and 150 billion cubic meters in 2020,⁴⁵ in other words, gas production will increase 18-fold by 2020 and 20-fold by 2030, compared with the level in 2006. The gas supply to the United Gas Supply System (UGSS), which is the existing gas network system distributing in the European part of Russia and West Siberia, will be 35 billion cubic meters per year by 2020, and the export of gas to China and Korea by pipeline will reach 25 to 50 billion cubic meters per year. LNG to Pacific countries will amount to 21 billion cubic meters per year. A 2.4 trillion ruble (\$94 billion) investment will be necessary for the program up to 2030.⁴⁶

40 *Weekly Petroleum Argus*, June 4, 2007.

41 *Interfax*, August 2, 2007.

42 *Interfax*, October 24, 2006.

43 *The Moscow Times*, September 5, 2007.

44 Order of the Ministry of Industry and Energy, No. 340 (September 3, 2007); *Vremia Novosti*, September 10, 2007; *Interfax*, September 10, 2007.

45 *The Moscow Times*, September 10, 2007.

46 *Interfax*, September 10, 2007.

Fig. 7. Eurasian Gas Pipeline Network



Notes: Solid lines show existing pipelines and broken lines - planned ones.

Sources: Compiled by the author based on *The Atlas of Gas Pipelines in Russia, CIS, Eastern & Central Europe* (Moscow: Cartographic Information Centre "INCOTEC," 2005).

Kovykta will start production in 2017, however, if it goes into the UGSS, this timetable could be moved up. This indicates Kovykta's production program is very flexible. In June, Anatolii Chubais, Chairman of United Energy Systems (UES), asserted that the gas of Kovykta should be supplied domestically, especially to West Russia.⁴⁷

The Kovykta field has plenty of reserves and if it is to supply gas to Proskokovo to connect to UGSS, it means that West Siberian gas does not have to be transported to the south of Siberia, but can rather be transferred to the European market, which would economically make sense. At present, the policy of development of Kovykta is still proceeding at a slow pace, though the so-called East Gas Program was approved. It is obvious that if Russia wants to export gas to China, it will take a long time, say more than one decade to organize. On the other hand, if Russia wants to expand exports to Europe, to increase gas supply to UGSS from the peripheral region would be a practical solution.

Jonathan Stern pointed out, "the most difficult to know is whether Russian gas customers will be willing and able to pay prices that are sufficiently

⁴⁷ *Interfax*, June 15, 2007.

high to make profitable the development of new gas fields."⁴⁸ The answer to this is that only the European market can afford to purchase "expensive gas." Russia might have lost the competition in the Chinese gas market to Turkmenistan, which still can supply "less-expensive gas."

TURKMENISTAN GAS TO CHINA: A NEW COMPETITION WITH RUSSIA

Turkmenistan's Gas Policy and Russian Influence

Turkmenistan has been content as a supplier of gas to Russia and does not have its own market. However, last year an agreement with China for gas export was made. It was possible because Turkmenistan can afford to export "less-expensive gas" at around \$100 per 1,000 cubic meters at 2006 prices, which is quite different from Russia. Russia is now shifting to "expensive gas," or global price gas, since Russia is developing new gas regions like the Yamal Peninsula, East Siberia and the Arctic Sea, where development costs are more than two times as high as in conventional regions like West Siberia.⁴⁹ Russia is still having difficulty agreeing on gas prices with China, the main importer in East Asia, while Turkmenistan seems to have been successful in clinching a deal with China.

The gas reserves of Turkmenistan are 101.0 trillion cubic feet (2.9 trillion cubic meters),⁵⁰ which is the second largest among CIS countries after Russia and number 13 in the world. Turkmenistan produced 62.2 billion cubic meters in 2006.⁵¹ However, in 1991 it produced 84 billion cubic meters of gas and occupied 13% of the Soviet Union's production at the level of 652.3 billion cubic meters, which was almost peak production throughout its history.⁵²

In Central Asia, Turkmenistan's position is rather peculiar. Turkmenistan is the second largest gas producing country next to Russia, however the country's export route for natural gas is essentially controlled by Russia and to co-exist with Russia has been the unique solution for Turkmenistan to get along as a gas producing country. As such, it has been an important subject for Turkmenistan to find new export routes and to reduce reliance on the Russian market.

After the breakup of the Soviet Union, Turkmenistan's gas production fell drastically due to a conflict with Russia on gas pricing and with Ukraine on the issue of nonpayment. In 1998, gas production fell to 13 billion cubic meters, which was only supplied to the domestic market. Putin, who was inaugu-

48 Jonathan Stern, *The Future of Russian Gas and Gazprom* (Oxford University Press, 2005), p. xvi.

49 Aleksei M. Mastepanov, *Russian Energy Strategy in the 21st Century* (Japanese translation, Tokyo: Tozai Boeki Tsushinsha, 2001), p. 576.

50 BP, BP Statistical Review of World Energy (2007) [<http://www.bp.com/productlanding.do?categoryId=6848&contentId=7033471>].

51 Ibid.

52 BP, BP Statistical Review of World Energy (1992).

rated as the Prime Minister of Russia in August 1999, started negotiations with Turkmenistan from the end of that year, and agreed to the gas price of \$36 per 1,000 cubic meters, which was the price at the border between Turkmenistan and Uzbekistan. The fact that gas exports resumed in 2000 was a diplomatic victory for Putin.

The gas price was raised to \$40 per 1,000 cubic meters in February 2000, when Russia's export gas price to Europe was around \$120 per 1,000 cubic meters. Turkmenistan's gas was being sold to Russia at one-third of the price that Russia was selling gas to Europe.⁵³ Turkmenistan's long-cherished desire is direct access to the European market, and export of its gas at the international price. "The Energy Charter Treaty," which was signed in December 1994 and entered into legal force in April 1998, declared the principle of "freedom of transit" of energy materials and products and eliminated discrimination as follows: "Each Contracting Party shall take the necessary measures to facilitate the Transit of Energy Materials and Products consistent with the principle of freedom of transit and without distinction as to the origin, destination or ownership of such Energy Materials and Products or discrimination as to pricing on the basis of such distinctions, and without imposing any unreasonable delays, restrictions or charges."⁵⁴

Turkmenistan is exporting gas through the Central Asia Center (CAC) Pipeline to Russia and Ukraine, as shown in Fig. 7. However the fact is that it actually hands over gas to Russia at the border of Uzbekistan. If Turkmenistan wished to conclude a sale and purchase agreement directly with the European market at the international price, Russia would be requested as a transit country for Turkmenistan to execute the principle of "freedom of transit" of energy. This situation could explain why Russia would not ratify the Treaty, though it was signed in 1994.

Turkmenistan has already ratified the Treaty. The EU has repeatedly urged Russia to ratify, but Russia refused to do so until the transit clause of the Treaty was replaced by one which may give advantage to Russia. As Russia still has a concern about future gas production, it is a safe policy for Russia to contain Turkmenistan in a corner of landlocked Central Asia and allow Turkmenistan only one way out - via Russia. Turkmenistan cannot be content with this situation.

A New Gas Pipeline from Turkmenistan to China

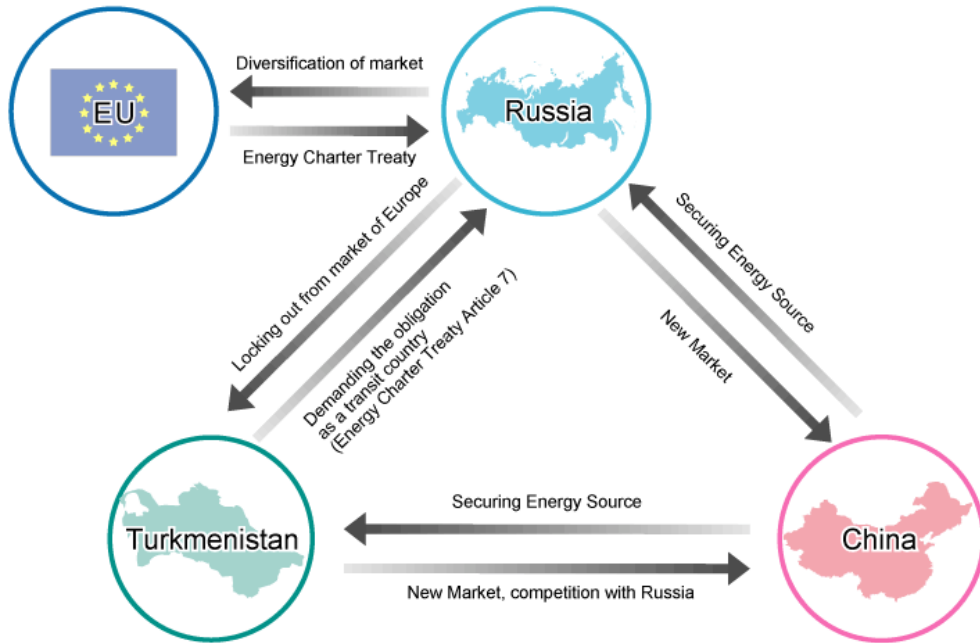
Saparamurat Niyazov, the then Turkmenistan President, visited Beijing in April 2006, two weeks after Putin's visit, and agreed with China to supply 30 billion cubic meters of gas per year from 2009.⁵⁵ Turkmenistan is the only

53 Malcolm Butler, "Russian Gas for Europe," *Oxford Energy Forum* 48 (2002). We can access the Oxford Energy Forum on the Oxford Institute for Energy Studies website [<http://www.oxfordenergy.org/forum.shtml>].

54 Article 7 (1) of Energy Charter Treaty [<http://www.ena.lt/pdfai/Treaty.pdf>].

55 *Argus FSU Energy*, April 7, 2006.

Fig. 8. Relationship between the Countries Interested in a Natural Gas Pipeline to China



Sources: Compiled by the author.

candidate who can compete with Russia in the field of gas supply in Eurasia, while Russia is aware of this situation, and their strategy has been to constrain Turkmenistan to export gas only within the markets of Russia and Ukraine. Fig. 8 describes the relationship between Russia, China and Turkmenistan, partly including the EU, on pipeline projects and other energy issues. China is in a position to accept proposals from both Russia and Turkmenistan and try to stimulate competition between these two, while Russia is eager to discourage Turkmenistan from finding its own export route.

Niyazov died unexpectedly of heart failure on December 21, 2006, and Gurbanguly Berdimukhammedov, the Deputy Prime Minister and the Minister of Health, succeeded to the presidency after Niyazov by election on February 11, 2007. In April, the new president visited Moscow and confirmed the gas supply agreement, which was concluded in 2003 to supply gas to Russia for 25 years until 2028.⁵⁶ In May, Putin, Nazarbaev and Berdimukhammedov got together at Turkmenbashi city on the Caspian Sea to agree to the new construction of a CAC-3 Pipeline to Kazakhstan along the Caspian coast and to the upgrade of other existing CAC Pipelines, which will raise the level of gas exports from Turkmenistan to Russia from 42 billion cubic meters in 2006 to 90

⁵⁶ *The Moscow Times*, April 24, 2007.

billion cubic meters.⁵⁷ This behavior indicates Berdymukhammedov appreciates the value of the Russian market for Turkmenistan and is prepared to treat it as his first priority.

However, at the same time the new leadership of Turkmenistan is likely to pursue new export routes – notably to China – to reduce their reliance on Russia.⁵⁸ In September 2006, the National Development and Reform Commission (NDRC) of the People’s Republic of China approved the construction plan of the 4860 kilometer “Second West-East Pipeline,” which starts from a village named Korgas on China’s border with Kazakhstan, runs parallel to the West-East Pipeline from Xinjiang-Uighur Autonomous District, separates at Zhengzhou (Henan Province) and then turns to the south to Guangzhou (Guangdong Province). The capacity is 30 billion cubic meters per year. It is reported that the source of gas is not from the Tarim basin, but from Turkmenistan, and the gas price is already agreed with China at \$100 per 1,000 cubic meters,⁵⁹ which seems to be the border price at Turkmenistan and Uzbekistan and happens to be the same price from Turkmenistan to Russia since September 5, 2006.⁶⁰ In 2007, some guesswork is made that the price of gas at the Chinese border would be lower than \$180 per 1,000 cubic meters, which is surely lower than the gas price offered by Russia at that time.⁶¹ The 2007 price has been raised by inflation in costs of materials and construction and seems to include transportation costs of more than 2,000 kilometers in Central Asia and tariffs of transit countries.

In April 2007, Ma Kai, the chief of NDRC of China, and Azimov, the Deputy Prime Minister of Uzbekistan, signed the intergovernmental agreement on construction of a gas pipeline in Uzbekistan, which is 530 kilometers long with a capacity of 30 billion cubic meters per year.⁶² So far, Uzbekistan has no extra gas resources to export. Supposing from its length and capacity, this pipeline must be a transit line from Turkmenistan to Kazakhstan. During a visit to Beijing by Berdymukhammedov in July 2007, a production sharing contract (PSC) was signed with CNPC to develop the Bagtyyarlyk acreage in the Amu Darya basin, East Turkmenistan.⁶³ In August 2007, Hu and Nazarbaev agreed to construct a pipeline through the southern part of Kazakhstan with a route reaching the Kazakhstan-China border at Korgas village and a capacity of 30 billion

57 *International Oil Daily*, May 15, 2007.

58 *International Oil Daily*, Jan. 8, 2007.

59 *Wall Street Journal*, September 28, 2006.

60 *Financial Times*, September 7, 2006; *Wall Street Journal*, September 6, 2006.

61 *China Oil, Gas & Petrochemicals*, September 1, 2007 (This is a biweekly magazine on the Chinese oil, gas and petrochemical industry. There is a charge for delivery of the magazine by email. The address is chinaogp@xinhua.org).

62 *International Oil Daily*, May 7, 2007.

63 *International Oil Daily*, July, 18, 2007.

cubic meters per year.⁶⁴ This assures that two transit countries in Central Asia have agreed to construct gas pipelines to China.

Finally, on August 29, 2007, Berdymukhammedov announced the launch of construction of a new pipeline that will bring gas from the right bank of the Amu Darya River in Turkmenistan to China.⁶⁵

In addition to that, a new discovery was reported recently near the Yoloten Gunorta (South Yoloten),⁶⁶ which, although not confirmed yet, does offer some possibility of a hike in Turkmenistan's gas reserves.

It seems that so far Russians have failed to enter the Chinese market because of their high gas price policy, while China has been successful in finding cheaper gas suppliers elsewhere.

CONCLUSIONS

Backed up by its huge oil reserves, Russia will still increase its oil production steadily and maintain its position as the number two oil producing country, following Saudi Arabia. As for Russia's export oil pipeline system, the ESPO Pipeline is now under construction and will create a new oil flow from East Siberia to the Pacific market. Sakhalin has already started oil exports to the Far East. These could be an important development for the energy security of Japan, which has been failing to diversify its dependence on Middle East oil.

Russia is number one in the world in gas reserves and level of production. However, there is a concern about the future of gas production due to a lack of investment throughout the past decade. To cope with increasing demand from the domestic and international markets, Russia needs to activate investment for new field development and infrastructure. Gazprom has expanded its budget considerably in 2007, which was possible by revising gas prices in domestic and CIS markets. Independent gas companies and oil companies have also been achieving good performance in production growth. It is necessary to get rid of the monopoly in the gas industry by approving third party access to the trunk pipeline to create an efficient gas industry.

Gas exports to China from Siberia have been suspended and at the same time gas field development in East Siberia has lost its drive. It seems that Russia's gas export strategy in the Far East has collapsed because of soaring gas producing costs in Russia, which the northeastern part of China cannot afford. On the other hand, Turkmenistan is eager to export to China with a less expensive gas price, and this plan is taking shape instead of exports from Russia.

64 *Argus FSU Energy*, August 24, 2007.

65 *International Oil Daily*, August 31, 2007.

66 *Oil and Gas International*, November 6, 2006.