DRAFT
RIETI, BBL Discussion Group
Tokyo, October 13, 2005

RUSSIA'S ENERGY POLITICS: FOCUSING ON NEW MARKETS IN ASIA

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In Russia's foreign policy, the central direction taken after September 11, 2001, was close cooperative relationship with both the U.S. and Europe. However, Vladimir Putin's second term in office continues to be fraud with western complaints about his neo-authoritarianism and declining significance of democratic institutions in Russia. These voices are multiple with some U.S.-based organizations leading the chorus. According to "Freedom House", for example, Russia has been singled out as the country that became less democratic and more authoritarian during George W. Bush's presidency.[1]

Fortunately for Putin, pragmatic overtones in his relationships with the West prevail. In addition to Russia's efforts in combatting international terrorism, the political leaders in Europe and increasingly so in the United States concentrate their attention on Russia's role as a supplier of energy to the world markets. On January 1, 2006, Russia will assume the rotating presidency of the G8. The next G8 summit in St. Petersburg will be focusing on energy security and education. Focus on energy is in Russia's interests because it is, indeed, positioning itself as an "energy superpower," or, at the very least, the indispensable supplier of oil and natural gas to Europe.

On the other hand, Moscow has began pursuing an active policy towards Asia, rapidly expanding its economic links with China, Japan, the Republic of Korea. The purpose of this brief overview is aimed not as much at clarifying the prospects of Russia's energy links with Asia, but rather raising the questions on (1) why this shift is important for Russia's economic interests, (2) how these links may affect Russia's development prospects, and (3) what are the problems that could hinder Russia's drive to become a "global" supplier of energy.

Shifting Status …

Along with its readiness to host the G8 summit and progress in relations with the eastern neighbors, Russia continues to find itself in a very difficult socio-economic circumstances, including wide-spread poverty, low productivity, unfavorable long-term life expectancy scenario and declining population, in addition to many other shortcomings in education, public health, regional development and government inefficiency.

[1] "Russia's step backwards into the Not Free category [from "Partly Free"] is the culmination of a growing trend under President Vladimir Putin to concentrate political authority, harass and intimidate the media, and politicize the country's law-enforcement system," said Freedom House Executive Director, Jennifer Windsor. See: http://www.freedomhouse.org/media/pressrel/122004.htm

Vis-à-vis the rest of the world and major powers Russia's relative economic position changed unfavorably over the last two decades (Table 1.)

Table 1: Global Output Shares: 1980-2015 (in purchasing power parity terms)*

	1980	2003	2015
United States	20	21	19
EU25	26	22	17
Japan	7	7	5
China	3	13	19
India	3	6	8
Brazil	4	3	3
Russia	4	3	2
Other	34	25	27

Source: IMF, Consensus Forecast, HM Treasury in *"Long-term Global Economic Challenges and Opportunities for Europe*," (London: March 2005, HM Treasury), p. 25.

In this context, the "energy superpower" scenario is perhaps the only medium-term option for the political leadership and the government to to cope with various challenges associated with unexpected and swift transition to capitalism. Indeed market forces and external demand so far were more than convincing in making this scenario a viable option.

Since 2000, the oil production increased by 40%, while in 2005 it could grow further by about 3%, meaning additional 13-15 million tons (Mt), which is roughly equivalent to oil exports to China by rail planned for the next year. In September 2005, Russian oil companies were producing 9.53 million barrels a day (Mbd); 349.5 Mt in January-September, or 2.4% above the January-September volumes in 2004. Russia's oil exports are growing faster than production. In September 2005, non-CIS exports via Transneft's pipeline system climbed to a new high of 3.99 Mbd, an increase by 15.5% compared with same period of last year. In 2005, total exports, including those by pipeline, rail and other means (the latter accounts for about 4.5% of the total), could expand by 10-11%. In physical terms, exports would constitute about 275 Mt, with domestic demand remaining close to 200 Mt.[2]

New projects are coming on line. Following Sakhalin 2, the Sakhalin 1 project will further boost crude output and exports. On October 2, 2005, ExxonMobil, the project operator, launched commercial oil production at the offshore Chaivo field. By 2007, output from Sakhalin 1 may reach 0.25 Mbd.

… and Growing Revenues

Growing oil exports and favorable oil prices contributed to the Russia's Central Bank hard currency and gold reserves, making also possible the establishment of the Stabilization Fund[3] (Table 2) and the Investment Fund and allowing swift repayment of the external debt.

[2] In January-June 2005, Russia's oil exports stood at 125 Mt. It was valued at $32.5 billion and contributed 33% in export revenues and 53.4% in exports of fuels (in June, average export price for "Urals" was $324 per one ton).

[3] The fund's main source of income are revenues that depend on oil prices, namely oil export duties and the oil extraction tax. If the "actual" price exceeds the "base" price, the surplus is transferred to the fund. In addition, the government decides on an annual basis whether to transfer part or all of any fiscal surplus, regardless of the source. On the other hand, if the oil price drops below the federal budget's breakeven point, the stabilization fund will be used to bridge the deficit. It may also be used to cushion expenditure burdens, such as foreign debt payments when the fund exceeds a certain limit.

Table 2: Sovereign (Stabilization) Funds in Russia and other Countries*

Country	Fund name	Assets	Established	Source
United Arab Emirates	Abu Dabi Investment Authority	250,000	n/a	Oil
Norway	Government Petroleum Fund	170,000	1990	Oil
Singapore	GIC	100,000	1981	Non-commodity
Hong Kong	Investment Portfolio (HKMA)	100,000	1998	Non-commodity
Kuwait	Kuwait Investment Authority	65,000	1953	Oil
Singapore	Temasek Holdings	55,000	1974	Non-commodity
Brunei	Brunei Investment Authority	30,000	1983	Oil
USA Alaska	Permanent Reserve Fund	29,800	1976	Oil
Russia	Stabilization Fund	29,000	2003	Oil
Malaysia	Khazanah National BHD	15,800	1993	Non-commodity
Taiwan	National Stabilization Fund	15,800	n/a	Non-commodity
Canada	Alberta Heritage	9,800	1976	Oil Trust Fund
Iran	Foreign Exchange Reserve Fund	8,000	1999	Oil
Kazakhstan	National Fund	5,200	2000	Oil, gas , metals

* Above US$5 billion

Source: Andrew Rozanov, "Who Holds the Wealth of Nations?," *State Street Global Advisors*, August 2005, p. 2.

As table 2 demonstrates, the Stabilization Fund is modest in comparison with similar funds established by many other economies, both oil producing and those export-oriented economies that import oil. However, in the current economic context, the fund could serve as significant source of stability and certainty in periods of low oil prices. Reportedly, the fund could grow further, expanding to $100 billion by 2008 and reaching one-third of the projected hard currency and gold reserves.

Current Priorities

Obviously, maintaining and enhancing the role of the leading oil producer and exporter Russia needs to sharpen its strategic focus in a number of areas, including investment in infrastructure that opens new export routes, enlargement of reserves, marketing and other issues.

Ironically, the ***first*** and foremost concern lies with the countries of Europe, the Baltic States and the CIS neighbors. Following the dissolution of the Soviet Union, Russia lost major ports in the west, including those on Black Sea (Odessa) and Baltic Sea (Tallin, Ventspils, Riga, Klaipeda and Butinge). Now it has to pay transit fees and port charges for transporting oil by pipelines built by Transneft on the territories of Ukraine and Belarus. In the context of avoiding transit via these countries, the construction of the Baltic Trunk line System (BTS) with the current annual capacity of 50 Mt appears a major breakthrough.

Second, Russia wants to reduce its current dependence on Europe as the dominant destination for oil exports.[4] According to Transneft, this dependence is behind the phenomenon that can be called a "European discount." Similar to the "Asian premium", which oil importers in Northeast Asia pay because they lack sufficient supply alternatives, the "European discount"

[4] In 2003, 58% of Russian oil exports were to the EU and 22% of total net EU oil imports in 2002 came from Russia. This represented 16% of total EU oil consumption. In addition, 88% of its total natural gas exports were delivered to European countries. Approximately 65% of the natural gas exported to Europe in 2003 was delivered to the EU, representing 32% of EU gas imports and 19% of total EU gas consumption.

reflects the lack of alternative outlets.[5] In this context, diverting some 30 Mt of oil from Western Siberia to the markets in the Asia-Pacific region means higher revenues.

Third, the government intends to build up modern refinery capacity in Russia. Among other plans, it is proposed to avoid mixing high-sulfur oil produced in the Volga region[6] with light oil extracted in Western Siberia. The "Urals" — Russia's main export oil blend — is a result of such mixing. Because of the widening gap in prices of Brent and Urals, the Urals' discount to Brent recently reached $5-6 per barrel. If high-sulfur oil cut off from the export pipeline, the value of West Siberian oil would increase, promising additional revenues.

Fourth, the government envisages oil output reaching 530 Mt by 2015-2020, including 65 Mt produced from new sources in Eastern Siberia and the Far Eastern region. Under this scenario, oil exports could reach 310 Mt by 2020, with 30% of these volumes directed to markets in Northeast Asia and beyond.

Fifth, with the cost of adding new delivery infrastructure and new reserves on the increase, the total amount of investment required for the oil sector in the next 15-20 years could be close to $60-70 billion, including the huge amount of investment needed for geological exploration and development in new areas.

Sixth, in order to ensure that oil-producing companies invest in new exploration and development projects in new areas the delivery infrastructure must be built. The two-phase project called an Eastern Siberia Pacific Ocean pipeline (abbreviate in Russia as VSTO) should serve as the infrastructural backbone of the Russian oil strategy, aimed at (1) lessened export dependence on Europe to avoid unwanted commercial losses[7], (2) drastically improved environment for exploration and development in new areas, and (3) the industrial and social advancement of Russia's eastern regions.

The VSTO Project

Recently, Transneft has submitted a feasibility study of the VSTO pipeline project to the government for review. The document pertains to the first phase of the project only, which envisages building the 2,400 km, 0.6 Mbd Taishet-Skovorodino section and an oil terminal on Perevoznaya Bay. If approved, construction reportedly will be completed in 2008. Transneft planned to raise $6.6 billion to finance the first phase of the project. In the meantime, President Putin branded VSTO pipeline as project of national significance.

The second phase may be financed through a project-financing scheme, bringing the full cost of the pipeline to $11.5 billion. The second phase will include the 1.0 Mbd pipeline stretch from Skovorodino to Perevoznaya and the expansion of the capacity of the Taishet –

[5] Reportedly, this means a loss of about $1 on each barrel ($7 per ton) of exported oil.

[6] Produced by Tatneft, Bashneft, TNK-BP's Udmurtneft and Saratovneftegaz, as well as YUKOS' Samaraneftegaz.

[7] Transneft also plans to build the 0.48 Mbd Northern Pipeline, which will run from Kharyaga in the Timan Pechora oil province to Indiga on the Pechora Sea, at the same time with the Pacifc pipeline. Earlier, Transneft had planned to launch the former only once the initial stage of the latter is complete. The northern pipe is to carry crude from the Timan Pechora region, an area being developed by LUKoil.

Skovorodino section to 1.6 Mbd. In addition, the government plans to maintain and increase the oil-by-rail exports to China and may consider a pipeline connection from Skovorodino to Daqing. This approach mirrors the one proposed by the *2020 Energy Strategy*: a pipeline to the Pacific (50 Mt) plus a branch pipeline to Daqing (30 Mt). It is worth noting, however, that according to the government, Transneft and independent sources, no decision has yet been taken on a branch pipeline.

The implementation of the second phase of the project would depend on overall progress in developing the oil fields already licensed to companies (Urubcheno-Takhomskoe, Kuyumbinskoe, Srednebutuobinskoe, Verkhnechonskoe and Talakanskoe), as well as progress in implementing the special program of licensing new lots for development. Feed pipelines were also planned to deliver oil from the new fields to Taishet and Kazachinskoe.

There are differences among the operator of the project, the government, the legislators, independent experts and NGO's on the issues of the project's compliance with environmental regulations. There were also numerous questions raised with regard to sources of funding.[8] Another source of uncertainty is the volume of oil reserves in Eastern regions. Confirmed reserves are close to 1,500 Mt. The good news, so to speak, is that the level of geological exploration is only 12% in the Far East and less than 8% in Eastern Siberia. In any event, the filling the pipeline with oil would be responsibility of the oil companies, including those under the state control.

According to Rosneft, there will be enough oil to operate the project profitably. First, Rosneft itself made a decision on construction a feeding pipeline, connecting its Vankor fields in Krasnoyarskiy Krai with the Transneft's system. It will be 350 km long with annual capacity of 18 Mt, the volume Vankor will produce in 4-5 years after the beginning of production.

Second, the Talakan field in Yakutia could produce 8-10 Mt of oil by 2010-20012. Surgutneftegaz, the project operator, also announced its plans to build a feeding pipeline that on the way to the south could also connect Verkhnechonskoe field to the VSTO pipeline.

Third, for the TNK-BP, the eastward-oriented projects also likely to be the priority direction, including the development of Verkhnechonskoe field with 201.6 Mt in reserves. The indication is the recent decision by the company to allocate $270 million for the test phase of oil production and plans to coordinate production with the VSTO pipeline project.

Meanwhile, in 2005, the Natural Resources Ministry has published a list of 104 blocks that to be offered for exploration by private companies. The list supplements a similar catalog of 137 prospects published earlier. Both lists include seven exploration licenses set aside for Russian entities only. Reportedly, the "strategic fields", i.e. those subject to particular restrictions under Russian legislation are defined as those with reserves (or resources) above 1.1 billion barrels of oil and 1 trillion cubic meters of natural gas.

[8] Transneft maintains that it can raise as much as $7-8 billion for a period of 15-18 years under an attractive refinancing rate. During the last 48 months, the company has invested about $3 billion by borrowing money. Currently, its outstanding debt is about $500 million. Recently, Moody's Interfax Rating Agency assigned to Transneft "Aaa.ru" national scale level rating. Moody's Investors Service confirmed that "Baa1" long term local currency and "Baa3" foreign currency ratings of Transneft are under review for probable further upgrading.

The Pacific pipeline, indeed, is very important for Russia's trade and policy ties with Northeast Asia. It could play significant role in oil supply to Northeast Asia, including Japan and China. The best option is to consider this pipeline in a broader integrative context, promoting trilateral and multilateral dialogues.

Natural Gas in Eastern Russia

Both in Eastern Siberia and the Far Eastern region, the confirmed reserves of natural gas are much larger than the confirmed reserves of oil, but among the problems that constraint development of these reserves are (2) the limited domestic demand for gas, (2) the lack of access to the neighboring markets, which are either insufficiently prepared for receiving pipeline gas, or rely on LNG, or both, and (3) expensive delivery infrastructure and processing facilities (Table 3).

Table 3: Natural Gas in Eastern Russia: 2010-2030 (Bcm, including LNG)

	2010	2020	2030
Extracting potential	60	160	190
Regional domestic demand (Eastern Siberia and Far East)	15	29-35	44
Additional domestic demand (if connected to UGS)	15	51	80
External demand	17	40	50
Anticipated production range	32-47	79-130	130

Source: Anatoliy B. Yanovskiy, "Energy Strategy of Russia and the Role of Siberia and the Far East," Address at the Siberian Energy Congress, Irkutsk, June 7, 2005.

There are many uncertainties with regard to how fast and to what extent the reserves of natural gas in Eastern Russia are developed. The list of concern includes the following issues:

- The future of Kovykta project, prospects for separation of helium and its storage
- The separation of other valuable components for export-oriented industrial use
- Prospects for gas transformation technologies and exports of liquids
- Prospects for region-to-region export supply projects
- Prospects for new urban areas development
- Prospects for agricultural settlements improvement
- The protection of the coal industry interests in Eastern Russia.

Finally, the pricing of natural gas—domestic and international—will define the development prospects of the gas industry in Eastern Russia, as well as the feasibility of investment in exploration in and development in the areas with very harsh climatic and terrain conditions. To the extent, the long-term trends in the prices of oil could provide some guidance. In most of the recent forecasts, western energy analysts agree that the $35-40 per barrel (bbl) could constitute the new plateau in prices, driven by strong demand on the part of China, India, the United States and Europe, as well as low spare capacity. Some of them suggest that a likely scenario would see oil prices rising to $80/bbl by 2008, dropping to $60/bbl by 2012, reflecting the influence of high cost on demand.[9]

Unlike in the cases of oil and LNG exports, mostly driven by the markets, prospects for pipeline gas exports will depend on the policies and energy choices made by the governments of the neighboring countries, including China, the Koreas and Japan. It is worth noting that

[9] Fereidun Fesharaki, FACTS Inc., cited in the *Oil & Gas Journal*, May 2005, p. 5.

speaking in Irkutsk, at the Siberian Energy Congress held in June 2005, Anatoliy B. Yanovskiy, Director of the Energy Department of the Ministry of Industry and Energy briefly mentioned the draft agreement prepared with the Republic of Korea with regard to pipeline gas supplies. The relevant discussions between Gazprom and KOGAS took place in Moscow in May 2003. In January 2005, the high-level delegation of Gazprom visited Pyongyang. It is also possible that the high-level contacts between Russia and China will facilitate gaining a market access for gas produced by Sakhalin 1 project.

In Japan, the most recent METI publication "FY 2006 Economic and Industrial Policy: Key Points" refers to the set of issues called "Securing stable energy supply by strengthening fuel strategy."[10] In this document, some measures and steps were identified, including the following:

- independent development of oil and natural gas in such strategic areas as Russia
- diversification of supply sources
- protection of Japanese mining rights in the East China Sea and other areas
- strengthening Japan's relationship with oil and gas supplier nations
- promotion of natural gas-related research and development.[11]

In addition, METI intends promote the environment-friendly and efficient use of natural gas. To fulfill these goals, promoting natural gas imports from Eastern Russia (Sakhalin) a realistic transportation options should be under review. Considering that a natural gas pipeline project would be difficult to realize any time soon, as well as high and increasing cost of LNG, potential importers of gas in Japan may explore a compressed natural gas (CNG) transportation technology. Moreover, stranded gas can be used for the project and production potentially may be under control of Japanese companies.

The CHG carriers serve as transport and storage vehicles, discharging their cargo directly into the land based gas grid via both offshore and onshore terminals thus avoiding costly liquefaction, re-gasification and storage. The new type of ships (VOTRANS and PNG types) are much lighter in weight, making possible a large storage volume up to 34 million cubic meters of gas. For distances of 2,500 nautical miles or less, this technology should be very competitive both vis-à-vis pipeline gas and LNG, reducing investment in infrastructure and offering greater flexibility in purchasing. The storage could be located both onshore (underground) and offshore.

Prospects for Electricity Exports

Although many trans-border electricity projects are still at the stage of concepts, these projects are getting more attention from international organizations, research institutions, policy makers and industrialists. In terms of the electricity consumption trends, over the last

[10] Available at: http://www.meti.go.jp/english/policy/FY2006keypoints.pdf

[11] For development of the GTL and DME technologies, as well as other fuel sources: JPY 14 billion were allocated. On the other hand, the support measures for increased demand for natural gas accounted for another JPY 14 billion. These amounts are relatively modest, if compared with funding allocated for the effective management of oil reserves and the national petroleum stockpile (JPY 225 billion).

30 years, the electric power demand was growing fast not only in China, but also in Japan and South Korea and this trend is very likely to continue well into the future (Table 4).

Table 4. China, Japan and South Korea: Electricity Consumption by Sector, 1973-2003 (TWh)

	1973	1980	1990	2000	2001	2002	2003	1990/2003, %
Total consumption, incl.								
China	--	301.6	621.2	1,355.6	1,471.6	1,641	1,910.5	
In MTOE*	--	23.3	49.3	81.8	88.9	108.7	127.6	
Industry*	--	19.2	38.2	48.9	52.8	69.7	83.5	
Transport*	--	0.23	0.91	2.42	2.66	2.91	3.41	
Agriculture*	--	2.32	3.67	5.79	6.56	6.68	6.75	
Commercial, residential *	--	1.64	6.53	17.78	19.66	21.52	24.62	
Japan	421.67	520.25	758.44	956.62	940.43	956.32	946.79	1.7
Industry	291.38	327.79	366.41	399.01	382.72	386.32	384.81	0.4
Transport	13.23	15.23	16.81	18.57	18.44	18.51	18.51	0.7
Agriculture	1.20	1.21	1.65	1.60	1.62	1.62	1.44	-1.0
Commercial & Public use	30.14	52.96	180.65	267.43	268.41	272.19	267.79	3.1
Residential	79.19	116.09	184.15	257.85	257.19	265.86	261.59	2.7
Energy	6.53	6.98	8.78	12.15	12.07	11.83	12.66	2.9
South Korea	12.83	32.74	94.38	233.54	250.37	300.79	318.06	9.8
Industry	8.85	22.72	57.79	126.95	132.16	160.44	168.51	6.6
Transport	0.13	0.40	1.01	2.04	2.26	2.27	2.33	6.6
Agriculture	0.08	0.19	1.46	5.31	5.99	6.7-16	5.94	11.4
Commercial & Public use	2.22	4.11	16.39	68.14	70.76	89.64	96.71	14.6
Residential	1.55	5.32	17.74	31.10	39.21	42.28	44.57	7.3

* Million tons of oil equivalent.
Source: *International Energy Agency Statistics*, *Electricity Information 2005* (IEA/OECD: Paris, 2005), 410, 427 and APEC Energy Database, available at http://www.ieej.or.jp/egeda/database/database-top.html

As the table demonstrates, in Japan, the commercial and residential users of electricity together formed the leading source of demand, surpassing the industry back in 1990. In South Korea, this turning point in the demand equation could be reached soon, while China in this regard may be two-three decades behind South Korea. What is important, however, is that in 2000, the absolute demand for electricity in China already surpassed the combined demand on the part of Japan and South Korea. Consider how this equation would evolve towards the year 2020—the target year set by the Chinese government for quadrupling the size of its GDP compared with 2000?

It was estimated that with an annual growth rate maintained at 6%, China's primary energy demand will surge from 850 million tons in 1999 to 2,400 million tons in 2030. However, due to the physical limits in the resource base only 1,700 million tons of primary energy can be procured domestically. This means that in 25 years from now, China would have to rely on about 600 million tons of imported oil—same amount as the U.S. imports today, and some 200 billion cubic meters of natural gas—same as EU countries import today. Obviously, large volumes of electricity imported from the neighbors could help alleviate energy supply imbalances.[12]

These prospects elevate the links with energy-exporting economies high on China's foreign policy agenda and the plans for investment abroad. Not surprisingly, the Chinese government has psychologically crossed the sacred line of self-reliance, accepting not only dependence on

[12] See: Li Zhi Dong, "Energy and Environmental Problems behind China's High Economic Growth: A Comprehensive Study of Medium- and Long-term Problems, Measures and International Cooperation," The Institute of Energy Economics, Japan, March 2003.

imported oil, but also coming partial reliance on external sources in electric power and natural gas supplies. In addition to China and because of diverse reasons, South Korea, North Korea and Japan could also become attentive to the idea of a sub-regional cooperation in the electricity sector.

Indeed, there is no less rationale for tapping geographically close reserves of electricity compared with the already stated interest in importing more oil and natural gas from the sources nearby, in some cases used to produce electric power. According to estimates by regional experts, in Eastern Siberia and the Far Eastern region of Russia, the additional generation capacity of hydroelectric, tidal power and natural gas generation dedicated to exports could amounts to 20 GW in 2020. If nuclear and coal generation are added, the potential generation capacity would be 40 GW, which nears the current generating capacity of the ROK and far exceeds Russia's projected regional electricity needs.

On the other hand, these impressive figures appear relatively modest in the context of China's anticipated needs. By 2030, in order to meet the rapidly growing electricity demand and replace old power plants China would have to add 860 GW of generating capacity at the total cost of $883 billion.[13] For instance, by 2020, the total hydroelectric power capacity could reach 250 GW compared with about 100 GW today, demonstrating relatively insignificant scale of the potential projects in Russia that still as the mega-projects.

In the end, hydropower plants in Khabarovskiy Krai alone could generate 200 TWh (23 GW capacity), while rivers in Amurskaya Oblast with estimated 9 GW capacity could support production of 80 TWh of electricity. More realistically, by 2025, if adequate investment is secured, several projects—some of them already under construction—would generate up to 80 TWh of electricity

The policy component behind the cross-border power interconnections currently under review may have a very significant influence on the long-term investment plans and specific projects. There are indications that such policy support could be available in case of the trans-border transmission projects between Russia and China. On the other hand, the chances of building a trilateral consortium, involving the DPRK, the ROK and Russia are less favorable at the moment compared with a trilateral agreement between Russia, China and the ROK.

From the purely business perspective, a reliable long-term electricity demand projection for in China and South Korea, as well as the estimated price range will serve as the most important beacon for the proposed projects' design and commercial viability.

However, in case of China—by far the largest market in the area,—such projections are complicated by the ongoing electricity reform, the new plans for the northeastern provinces development and hard-to-predict price levels for fuels, in particular the price of coal and the cost of coal transportation. Moreover, large-scale trans-border projects could be designed and implemented with support of the Chinese government as part of the electricity reform process that emphasizes competitiveness.

In any event, the provinces of northeastern China, including Heilongjiang, Jilin and Liaoning provinces, as well as eastern part of Inner Mongolia will serve as a stepping-stone in

[13] *World Energy Outlook 2004* (IEA/OECD: Paris, 2004), 208.

implementing first trans-border power transmission projects.[14] On one hand, the central government of China is now paying close attention to the economic restructuring and development of these provinces. On the other hand, some of these provinces are likely to enhance their roles as the "electric power donors." This role can be reinforced by the neighboring Russia via power interconnections and high voltage direct current transmission systems.

Conclusions

All economies, including those in Europe and East Asia, are now facing the linked challenges of energy security, rising energy prices and climate change. These challenges all point in the same direction: the need for an increased emphasis on energy efficiency and on the de-carbonization of energy sources. Achieving these goals, in a way that enhances growth and competitiveness, will require (1) the development and use of the most cost effective policy mechanisms, and (2) a coordinated international policy framework.

Improving energy efficiency in Russia should be seen as an opportunity to improve the productivity of the economy and of individual businesses. Innovation can create new markets and increase competitiveness through greater resource efficiency and new investment opportunities. Governments' role is to provide the effective policy framework and remove barriers to encourage the development and commercialization of new eco-efficient technologies and products.

In this context, the policy and investment decision taken in Russia with regard not only the future of its oil and gas industries, but also export-oriented electric power generation and the massive application of technologies that improve energy efficiency could have significant regional and even global implications. This is the approach shared by the United States and European Union in their policy and energy dialogues with Russia. On both these fronts, Russia is engaged in intensive professional exchanges, as both the U.S. and EU cultivate Russia as their strategic source of energy supply for decades to come.

For example, in the framework of energy dialogue with EU, more than 100 experts from Russian and European companies and governments participate on a regular basis in the working-level discussions on investment, infrastructure development, trade and energy efficiency, preparing practical recommendations for Moscow and Brussels. Moreover, on October 3, 2005, the first meeting of the Standing Partnership Council on Energy took place in London.

Despite Russia drive towards diversifying its export markets for oil and gas, the political influence and practical value of these bonds is difficult to overestimate. What could be highly desirable for Japan and Russia, as well as other economies of Northeast Asia is to look at these models and find ways to make the subregion they share a part of the global energy agenda.

[14] The second phase could involve the markets of Beijing, Tianjin and Shandong provinces.