

PART III

NORTH PACIFIC ACCESS TO ARCTIC ENERGY RESOURCES

5. Strategic Importance of Arctic Oil and Gas to Energy Security in the North Pacific

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INTRODUCTION

According to the latest estimations of the U.S. Geological Service (2008), some undiscovered reserves of hydrocarbons in the Arctic amount to 412 billion barrels in oil equivalent (around 25% of world reserves). At the end of May, 2009 the American magazine *Science* published the results of the first complex research and estimation of oil and gas reserves of the Arctic. According to this research, 13% of undiscovered world oil reserves and 30% of natural gas reserves are embedded in this region.¹ At the same time, major parts of these oil reserves are embedded close to Alaska's coast, while practically all the natural gas reserves are near Russia's shores.

In a paper presented in Houston at the first Offshore Technology Arctic Conference (Feb. 6-9, 2011), Mark Blazot from Total SA listed the following data: within the Arctic areas, which represent around 20 million km², around 40 billion barrels of oil equivalent (boe) have already been discovered, 80% being gas. The main proved basins and mostly untapped reserves are located in Russia, the Barents Sea, the Kara Sea, and the Yamal Peninsula for gas, and in Alaska, the North Slope basin for oil. Other important basins are Timan-Pechora in Russia and the Mackenzie Delta and Sverdrup basin in Northern Canada. Several basins, mainly located in Eastern Russia, are totally virgin, devoid of any exploratory wells. They are mainly the offshore North Kara Sea, Laptev Sea, the East Siberia platform, and the North Church, which together represent more than five times the surface area of Texas.² Arctic resources play an especially important role in the Russian economy, not only because the Russian Federation possesses the largest part of the Arctic coast (up to 40%), but also because 1% of Russia's population inhabiting this region has a 22% share of Russia's exports and 20% of its GDP.

Recently (especially in 2008-2009) serious ágiotage flared up around

the Arctic, and not only in the mass media. Many governments and international organizations made statements and even declarations, and sometimes the former had little to do with the Arctic (NATO, the European Commission, etc.). The main factor that has stimulated interest in the Arctic was the consequences of a changing climate – a fact that nowadays almost nobody denies, though there are still considerable differences in opinion regarding the reasons for this warming. One of the manifestations of this natural phenomenon lies in the considerable reduction in the total volume of the Arctic sea ice and the general reduction of the extent of the Arctic Ocean's ice cover. Such a development may seriously influence in perspective at least three spheres of human activity in the Arctic: firstly, considerably simplify access to the richest resources in the ocean (especially energy ones); secondly, create new opportunities for fishing; and thirdly, promote opening of new (shortened) routes for northern navigation.

Russia has not stood aside. In early 2009, the RF Security Council published a document signed by President Dmitry Medvedev entitled “Bases of the Russian Federation's State Policy in the Arctic for the Period up to 2020 and Further Perspective.” It's quite a balanced document, with the ideas of peaceful settlement of disputable issues in the Arctic, international cooperation and provision of mutually beneficial cooperation on bilateral and multilateral basis with other states neighboring the Arctic on the basis of the existing international agreements and treaties running all through it.

The document envisages a stage-by-stage solution of all the tasks within the framework of the outlined state policy in the Arctic. In the first stage in 2008-2010, it was decided to concentrate mainly on geological and geophysical, hydrographic, cartographic and other work to prepare materials to substantiate the external border of the RF Arctic zone; expansion of international cooperation, including for effective development of natural resources; realization of investment projects within the framework of state-private partnership, etc. In the second stage, from 2011 to 2015, legal official registration of the external RF Arctic zone borders will be provided; solution of goals of structural reconstruction of the economy in the Arctic zone; development of infrastructure and management system for communications of the Northern Sea Route (NSR) to resolve the tasks of Eurasian transit provision, etc. In the third stage, from 2016 to 2020, the RF Arctic zone will be turned into the leading strategic resource base of Russia.

In reality, Russia will have to address a long-range strategy for

restoration and rehabilitation of its Arctic territory, with enormous financial expenditures, and to overcome severe natural obstacles. But a difficult goal is facing the country's leadership role, where there is considerable lowering of double-dyed bureaucracy and overall corruption, which will take more than one decade and consistent political will. Nevertheless, in spite of a seemingly oppressive picture the main accent in this paper will be on new, reassuring tendencies in Russia's oil and gas sector, which began to form in recent years, and that in several years will lead to important shifts inside this sector and in interconnections and cooperation between Russia and the outside world. First of all, it's the beginning of the "washing out" of monopolism of some large state corporations (primarily such monolithic enterprises as Gazprom) and, secondly, the turn of the country's leadership and Russian oil and gas business to the Asia Pacific (AP), which has already begun, diversification of export oil and gas routes, etc.

There is absolutely no doubt that Russia, whose leadership has already realized the enormous importance of AP countries in world development, will in the coming decade make an increasing contribution to the provision of energy security for its neighbors within the framework of mutually beneficial and equal cooperation. At the same time, bearing in mind the really complicated and controversial situation in today's Russia, the present paper puts the main accent on disclosure of those historic difficulties and opposition of two tendencies – traditionalistic-inertial and modernizing-innovational – that today stand in the way of successful cooperation between Russia and the AP. The author of the paper has consciously avoided describing the multiple declarative "strategies" in the sphere of Russia's energy that are in abundance and are being produced by the Russian bureaucratic machine. Instead, the paper seeks to show the preference for specific analysis and contrast of two main oil and gas corporations operating in the Arctic that especially personify two opposing tendencies.

THE SHTOKMAN PROJECT'S ROUNDABOUT WAYS OF REALIZATION

Of course, developing hydrocarbon raw materials is difficult in such environmentally challenging areas as the Arctic and especially sub-Arctic waters, where operating floating production systems is a tremendously

difficult task, largely due to sea ice and icebergs as well as the challenges of having people working offshore in such extreme environments. Nevertheless, two floating production, storage and offloading (FPSO) vessels have been operating successfully off Newfoundland, Canada (by Husky Energy), on the White Rose field, and Suncor Energy at Terra Nova, while an FPSO has worked off Sakhalin in past years by Shell. But Shtokman is a far bigger project than any of these. Besides, in the efforts aimed at development of this deposit, as if in a drop of water, one could see all the historic twists and turns the country and its economy have passed in the transitional period from the USSR via Yeltsin's epoch and up to the present day.

Opened more than 20 years ago, the Shtokman deposit³ is unique not only due to the volume of its reserves (3.9 trillion cubic meters of gas and 50.3 million tons of condensate), but also due to the diversity of its participants and approaches to its development in the post-Soviet period. In the Time of Trouble of the early 1990s it was decided to pass the deposit to Rosshelf, created by a number of military-industrial complex (MIC) enterprises at the height of the conversion company. By the mid-90s, however, all the absurdity of this decision became obvious, and by Boris Yeltsin's order Gazprom was embedded in the project. Gazprom itself did not express special enthusiasm at having received such a present, as it was busy with more "serious" business, placing its assets into "reliable hands." Meanwhile, large foreign oil corporations were on the contrary very interested in that project, especially hoping to realize it within a "production sharing" scheme and expecting that gas exports would be performed by sea and not by pipes controlled by the Russian monopoly. In 1996, Rosshelf signed a protocol of intentions on Shtokman with Conoco, Fortum, TotalFinaElf and Norsk Hydro. But the undertaking was fruitless. And in 2002, during the first presidential term of Vladimir Putin, state oil and gas companies Gazprom and Rosneft created JV Sovmorneftegas, which besides everything else was given the license for the Shtokman development. However, in 2004, Rosneft was busy obtaining Yuganskneftegas and, needing the means to accomplish it, decided to sell its share in the JV to Gazprom (just as later it also decided to sell half of its 40% share in the Sakhalin-1 project to Indian company OGNC).

Then Gazprom began to consider conditions for future partnerships with Chevron, ConocoPhillips, Hydro, Statoil and Total independently. It marked North America as the priority market for its gas and its intention

to urge for exchange of assets with future foreign partners during the conclusion of its deals. After long negotiations, Gazprom's leadership suddenly made an incongruous declaration about the intention to develop Shtokman independently. Foreign companies were given an opportunity to act as contractors. But very soon the monopoly's leaders changed their mind, and in 2006-2007 renewed negotiations with foreign companies. As a result, in the second half of 2007 a framework agreement was signed on cooperation in realization of the first phase of the Shtokman deposit with Total and StatoilHydro. Within the framework of that phase in 2016 delivery of 23.7 billion cubic meters/year of pipe gas and 240 thousand tons of condensate should begin. (Further on, following the completion of all three phases, it is planned to get 71 bcm of natural gas, produce 30 mln tons of LNG and 740 thousand tons of gas condensate yearly).⁴ In 2008 the company-operator of the project, Shtokman Development AG, was created. The shares in the project were allotted as follows: 51% remained with Gazprom, 25% was received by Total, and 24% by StatoilHydro. But the general contractor was Sevmornefte gas (i.e. Gazprom), with the license remaining at its complete disposal.* Gazprom also controlled gas sales (then it proposed to sell all the gas on shore). The beginning of gas extraction and pipe deliveries was planned for 2013, with LNG production slated for 2014. In February 2010, however, the time was again postponed to 2016 and 2017, respectively. Gazprom also insisted on the fact that within the framework of the project's first phase there should be singled out a separate stage of launching complex construction to organize gas deliveries by a pipeline-submerged extortion subsystem, pipeline to the shore, gas processing unit. In this connection it assured that the final investment decision (FID) on pipe gas deliveries and on LNG would be made separately: in the first case in March 2011, and at the end of 2011. (Let me remind you that in the initial version the general FID was planned for the end of 2009- beginning of 2010).⁵

Gazprom explained the transfer of terms by an unfavorable situation for gas sales on world markets (global crisis and reduction of demand, growth of shale gas production in the U.S.), but in reality the problem was not only for those reasons. After all, according to the most optimistic

* Further on, Gazprom twice changed the name of its 100% "daughter" to Gazprom Neft Shelf and Gazprom Dobycha Shelf.

forecasts, LNG from Shtokman field would have come to world market in 2017. By that time the crisis would have remained in the past, while the new main LNG consumers (China, India, etc.) would have increased the demand for it. And all the large and not so large oil and gas corporations (IOCs) and national companies (NOCs) already urgently began from 2009-2010 to invest in LNG projects in Australia, Southeast Asia, etc. Probably understanding the above, Total's Chief Executive Christophe de Margerie repeatedly addressed Russia's leaders with advice not to protract Shtokman's development. In an interview with *Kommersant* in July 2010, he in particular said, "I just asked the prime minister to help us accomplish the project in due time and not to detain it. The same I asked of President Dmitry Medvedev."⁶

In the meantime, due to indecision, and most probably the insufficient experience of Gazprom's top management, Shtokman got bogged down for almost two years in internal contradictions between the project's participants. Contradictions appeared, in particular, during the endorsement of technical parameters, for example, on transportation of gas to the shore. The rift revolved around how gas and condensate should be pumped from the Shtokman production vessel over 600 kilometers to shore near the Russian village of Teriberka. Although as far back as 2008, the board meeting approved the concept of two-phase pumping of the mixture of gas and condensate to the shore, Gazprom Dobycha Shelf start insisting in 2010 that the operator, the Shtokman Development company, should amend the previous plan. The Russian company now argues the operator should add gas condensate separation facilities to the Shtokman production vessel to be able to take out the material from the well flows, and also look at alternative options for condensate export. However, Shtokman Development is refusing to consider the installation of gas condensate processing and storage facilities on the production platform because of safety and fire reasons. The argument led to replacement of Shtokman Development General Director Yuri Komarov, who backed the standing of Total and Statoil, and the appointment of Alexei Zagarovsky from Gazprom Dobycha Shelf instead, but at the end of 2010 foreign partners managed to insist on the variant of two-phase mixture of gas and condensate.⁷ However, controversies regarding the question of transportation of condensate by shuttle-tankers to avoid construction of two pipelines remained.⁸

Meanwhile, serious competition began on the market around large contracts of the first phase of the Shtokman project. In particular, the bet

was on a contract worth USD 15 billion to deliver a ship-shape floating production unit (FPU). Two consortiums opposed each other: Saipem, Samsung Heavy Industries and Sofec competed against rival group Aker Solutions, SBH Offshore, Technip and Daewoo Shipbuilding & Marine Engineering, to build the FPU. The planned FPU would be about 330 meters in overall length and about 65 meters wide. It will also have a “turret structure” for mooring, with emergency disconnection in less than three minutes as a “last resort” in the face of ice floes. The project team hopes to access Novaya Zemlya, east of the field. Most of the island is controlled by the Russian military, but the army has signaled its willingness to consider allowing the project to make use of the island, such as for helicopter flights to and from Shtokman. Parallel to this, competition by Russian contractors is also on: from one side, Russia’s Zvezdochka military shipyard has confirmed it will receive Western technologies and will begin a massive upgrade in anticipation of an Aker Solutions-SBM-Technip-Daewoo consortium winning a several billion dollars contract to build an FPU in the Barents Sea, and on the other side the second consortium of Saipem, Samsung Heavy Industries and Sofec are working closely with another Severodvinsk military yard, Sevmach, on a similar technology transfer and upgrades. New Shtokman Development Chief Executive Alexei Zagarovsky said on April 22, 2011 that the company is now planning to award all engineering, procurement and construction contracts for both onshore and offshore jobs by September. The Shtokman Development operator declared that preference would be given to that group of claimants whose claim would envisage a higher level of participation by Russian subcontractors, even if it would be connected with a certain rise in the contract’s price.⁹

In early June 2011, mass media published information (confirmed by Gazprom) quite favorable for the future of the Shtokman deposit, in particular, for the solution of one of its main problems – future LNG sales. On June 1, 2011, the main LNG importer in India, Petronet LNG Company, said that it was ready to buy 2.5 million tons of fuel a year from Gazprom over the course of 25 years. While on June 2 it was found that similar agreements were prepared with other Indian companies, GSPC and GAIL. All in all it will be up to 7.5 billion tons a year for the next 25 years, as the trading “daughter” of Gazprom GM&T said. For the moment, memorandums of understanding have been signed. According to Reuters, deliveries on future contracts are planned to commence in 2016-2018. (Gazprom has delivered small LNG consignments to India since 2007).¹⁰

But Gazprom would have stopped being “Gazprom” if lengthy arguments, negotiations and seemingly found compromises would not threaten the final decision on the project with another shift of timing. The adoption of an FID on the first project stage planned for March 2011 did not take place and was postponed to April. In April at a Shtokman Development Board of Directors meeting at the request of Gazprom the decision on an FID was again shifted to the end of 2011. Meanwhile, in the mass media there appeared an announcement by the head of the Rosnedra agency about Gazprom leadership’s request to postpone launching of the project for one year (i.e. to 2017 and 2018, respectively). And the last information about it was voiced in the middle of June 2011 in the lobby of the Petersburg Economic Forum by the head of Rosnedra, Anatoly Ledovskikh. It is interesting that when a Moscow News reporter asked the second executive manager of Total Iv, Lui Darricarer, about the timing of his company’s Russian projects, the latter diplomatically, shortly but firmly answered, “Total is invited to the project not to frustrate the determined timing.”¹¹

NOVATEK SAGA: GAZPROM’S MONOPOLY IS UNDERMINED

In recent years in the West, it has become fashionable to speak about the threat of a Russian energy monopoly for Europe that in the future might allegedly lead to political dependence. These statements are constantly disseminated by almost all Western mass media sources, with the latter naturally not taking any trouble to present in the least bit serious analysis of the real state of affairs. Especially popular is criticism of Gazprom due to its conflicts with transit countries (Ukraine and Belorussia), which are independent states, but who knows why persistently insisted on much more favorable terms and prices for Russian gas (compared to the world’s usual ones). They procrastinated on signing contracts, provoking Gazprom to stop gas delivery, being sure of moral support (but not of material support for some reason) from the outside world.

It’s quite enough, however, to address facts and statistical data to receive evidence that in the decades following the time when historical “gas in exchange for pipes” agreements with Austria and Germany were signed, in spite of an absolute physical increase of gas deliveries from

the Soviet Union, its share in the total volume of European gas imports decreased more than twice. It happened naturally due to diversification of import sources (from Norway with Algeria as well as other North African countries, plus Qatar, Trinidad and Tobago, etc.). What monopoly are we talking about?

And, nevertheless, Gazprom is a monopolist, but only in its own country. The company has at its complete disposal all the main export gas pipelines thanks to which it “makes miserable” the life of all the independent gas producers in Russia, either by imposing crushing terms for gas purchases or forcing them to burn associated gas in flares, polluting the atmosphere. History, however, shows that any monopoly sooner or later comes to an end. And such a monopoly usually breaks at its weakest link. Until recently Gazprom’s life was comfortable. It was sitting on a “Soviet inheritance” and kept to the comfortable tracks beaten in earlier times. But when it became necessary to develop new deposits Gazprom’s “weak link” became apparent – the Arctic with its multiple challenges: severe climate, need for absolutely new innovative technology, its unknown offshore, etc. The monopoly’s leadership was neither psychologically, nor professionally ready to meet these challenges quickly, dynamically or widely. This was clearly demonstrated by the story of the long and agonizing development of the largest Arctic project, the Shtokman gas condensate deposit. That’s when the advantages of a small, risky and innovational business became clear, and that business was personified by independent Novatek. The short but extremely eventful history of this company includes everything: clashes with Gazprom, struggles, temporary defeat, restoration and participation in the first actions that broke Gazprom’s monopoly. That is why in order to clarify yesterday’s events in the Russian gas industry, its present state and future prospects, it is necessary to dwell more at length on the Novatek phenomenon.

It should be mentioned that in Yeltsin’s times of “bespredel”^{*} and increasing corruption Gazprom’s fate was unenviable. It can be characterized by a well-known expression “to cast away stones,” i.e. taking away bit by bit the monopoly’s assets or even dispensing its whole subdivisions and “daughters” among relatives and close acquaintances of former Gazprom

^{*} Literally translated from Russian, *bespredel* means “no limits.” However, in the particular Russian context of that period, the connotation of the word means unrestrained lawlessness, unscrupulousness and corruption. *Bespredel* was manifested in an unlimited usurpation, or takeover, of the most valuable state assets by a small group of “the elite.”

leadership (Itera, Sibur, Stroitransgaz, etc.). As a result, by the time the leadership of the company changed early in this century, Gazprom, following intra-corporate price manipulations, looked like a semi-ruined, practically unprofitable enterprise. By the way, it quite “efficaciously” harmonized with persistent efforts of the IMF and some foreign governments, as they insisted on Gazprom’s reform, i.e. upon its dismemberment, putting it forward as a condition for giving another tranche of the financial aid that finally led Russia to default in 1998.¹² When Putin came to power, he not only changed Gazprom’s leadership but also clearly emphasized the main goal: “to gather stones” or melted-away assets.

Unfortunately, the new Gazprom leadership headed by Alexey Miller had only one quality convenient for Putin – implicit faithfulness and readiness to obey orders from the top, which, no doubt, was the decisive argument for Putin, a newcomer in the Kremlin surrounded by a not very friendly but quite implanted powerful bureaucracy. Nevertheless, Miller’s incompetence was slowly but surely revealing itself. He was successful only in one thing: based on powerful administrative support, Gazprom purposefully expanded its sphere of influence even beyond the limits of its abilities to implement this influence positively. This becomes especially obvious after you read a letter by Miller and Sergei Bogdanchikov (then head of Rosneft) sent on February 17, 2003 to Putin regarding East Siberia. Its authors proposed to unite several East Siberian and Yakutiya fields into a complex with a single production and social infrastructure to ensure higher efficiency in the development of the region’s resources. They also proposed to develop oil and gas resources simultaneously, giving priority to development of the gas industry to provide for the needs of the region and ensure deliveries to Asian countries.¹³

Behind the verbal demagogical “concern” about the region’s development and natural gas deliveries to Asia we can see in this letter obvious evidence of Gazprom’s intention to subjugate the vast new oil and gas Russian province together with Rosneft itself (the latter was mentioned by Miller as a settled matter). In reality, however, Gazprom had neither the strength nor means nor ability to deal with such a grand goal, and his behavior in that case was that of “a dog in the manger” – he just wanted to stake out a claim to all the oil and gas treasures of the region to be laid in store, for the future. It is proved by all his actions in East Siberia up to the present day. As for “gathering stones,” Gazprom was so much engaged in this process that it started to lay its hands on assets that never belonged to this monopoly. Special attention

was paid to independent and successful companies. That is where the “saga about Novatek” starts.

Novatek was created as an independent regional company (an open joint-stock company) in 1994 and began its activity in 1998. Initially the company was headed by Leonid Mikhelson (he is still at the head of it), Leonid Simanovsky (nowadays he is first deputy chairman of the State Duma’s Energy Committee), and Iosif Levinzon. The latter was a theorist and strategist who made a valuable contribution to the expansion of the resource base of the company in the initial stage of Novatek’s formation. He is a professional geologist. From 1978 to 1987 he worked for Urengoinftegasgeologia, then headed Purneftegasgeologia, which was carrying out geological prospecting in the region and later became Novatek’s resource base, and in mid-90s joined the latter. In 1996, Levinzon became deputy governor of the Yamalo-Nenetski autonomous region (YNAR) and obviously promoted consolidation of regional independent gas companies, doing so also through the Yamal Development Fund established by the YNAR administration.

An important (but not very long-lived) role was played in this consolidation process by another person, former intelligence agent Nikolai Bogachev, who in the mid-90s staked a purchase of West Siberian prospecting enterprises. Among other things, he controlled the license on prospecting of the South Tambeiski deposit. In 2002, the joint-stock company Tambeineftegaz was created, where 74.9% of its shares belonged to Bogachev’s joint-stock company Tambeigaz and 25.1% to the Regional Fund of Yamal’s Development Fund. With the help of Levinzon, who became a member of Novatek’s board of directors, this share was exchanged for 5.61% of the latter’s shares. By 2005, Novatek’s share in Tambeineftegaz reached 25.1%. The “reinforced” Tambeineftegaz had far-reaching goals that envisaged LNG plant construction and construction of a complex for transshipment of that gas to tankers, which had to provide for export channels independent from Gazprom. This project was developed with the participation of Halliburton and Bechtel and cooperation of Shell, Repsol and Petro Canada. The initial capacity of the plant had to amount to 7.5 million tons of LNG, while the project was to be completed in 2008-2009. In 2004 the project was directed to the profile ministry in Moscow for endorsement.¹⁴

No wonder that such an activity was not welcomed by Gazprom, and its leadership decided to act in both directions: against Novatek

and against Tambeineftegaz. In 2003-2004 Gazprom tried to dispute Purneftegazgeologia's joining Novatek, but in vain. In 2005, probably by using its administrative resources, it managed to squeeze out Levinzon both from Novatek and the post of YNAR vice-governor. In 2006 Gazprom managed to outbid one of Novatek's "daughters" for USD 2.2 billion (19.4%). The monopoly's leadership used its affiliated structure Gazprom Bank Invest against Tambeineftegaz, having bought Novatek's share. Apprehending the worst, Bogachev reissued a license for the South Tambei deposit to his new company, Yamal-SPG, and while Gazprom undertook litigation, Bogachev sold his share (about 75%) to large businessman Alisher Usmanov, who headed the corporation Metallinvest. Usmanov is also director general of Gazprom Investholding, which specializes in buyback of assets.¹⁵ It is quite obvious that Usmanov did not seriously intend to be engaged in the gas business, and we may suppose with a large share of certainty that, perhaps, he interfered in this case at the request of the government (maybe even at the request of Putin himself). The events that followed speak in favor of this supposition. In early 2008 he resold 75% of Yamal SPG to a well-known oil trader, Gennedy Timchenko, known for his closeness to Putin.¹⁶ Then Timchenko had to find a reliable and active partner to use the bought assets properly. It wasn't a difficult task, as in 2008 he already possessed minority shareholding (5.07%) of Novatek, and his name was on the list of the company's board of directors. That was probably enough to realize the serious potential of the company and to stake on it. In May-June 2009 Timchenko and Novatek leader Leonid Mikhelson performed a complicated, ambiguous, but fruitful exchange: Timchenko let Novatek have 51% of Yamal-SPG's shares and an option for purchase of his remaining 23.9% of shares in the course of three years. In response, Timchenko received a possibility to increase his share in Novatek up to 18.2%.¹⁷ According to that agreement Novatek instantly paid USD 250 million in cash, USD 300 million in securities with redemption in February 2010 (already accomplished) and USD 100 million after Novatek managed to sign a contract with Gazprom on the selling of future gas.¹⁸ The final step aimed at complete possession of Yamal-SPG was the appearance of Timchenko's partner Petr Kolbin on the arena – the co-owner of St. Petersburg oil trader Surguteks (49%). Quite of a sudden Gazprombank agreed to give the latter its 25.1% of Yamal-SPG shares for only USD 78.5 million. In December 2009, Kolbin's claim was confirmed at a meeting of government committee on foreign investments headed by

Putin (Kolbin's company is registered offshore, just like Volga Resources, belonging to Timchenko).^{*} Simultaneously at the same meeting Timchenko confirmed his claim for a future increase of his share in Novatek up to 23.49%, which will allow him to leave Gazprom with its 19.4% behind.¹⁹

Thus, it is clear that Timchenko intended to spread business activity to the natural gas sphere.²⁰ At the same time the activity of Timchenko and Novatek against the background of Gazprom's clumsiness and sluggishness in implementation of super-important tactical and sometimes strategic decisions is simply amazing due to its impetuosity, resoluteness and all-embracing complex. Here are only some recent examples that prove the above: firstly, already in the course of 2009 Novatek faced reshuffles among personnel and in its structure. Levinzon returned to Novatek as first deputy chairman. He was charged to create a department on innovations also headed by Timchenko and Burkhard Bergman, former chairman of the board of Germany's E. On Ruhrgas (both are members of Novatek's board of directors).²¹ Further on, during another reelection of the board of directors in May 2011, Vladimir Dmitriev (the chairman of Vnesheconombank) was excluded. This probably happened because a certain uncomfortable situation occurred due to Levinzon's return to Novatek's leadership. The thing is that it was Vnesheconombank that willy-nilly participated in the process of Novatek's destruction; having bought the share of the Regional Fund of Yamal's Development in 2005 (let me remind you that it was established in 2001 and was supervised by Vice Governor Livenzon) and then in mid-2007 this share went to Gazprom.²²

Secondly, Novatek began to aggressively entice former clients of Gazprom and Itera in the home market. Already in October-November 2009 there appeared information that former Gazprom clients with still-valid five-year contracts – OGK-1 and Inter RAO EC (the latter's board of directors up to the middle of 2011 was headed by Vice Premier Igor Sechin) decided to sign new contracts with Novatek in spite of threats from Gazprom to use penalties in accordance with the terms of contracts of "take or pay." New contracts envisaged deliveries of 56 billion cubic meters of gas in 2010-2015 for OGK-1 and 75 billion for Inter RAO EC. But from early 2011, Novatek increased its deliveries to Inter RAO's electric power

* It's interesting that in the same December, Rosnedra, without any unnecessary fuss, prolonged the validity period of the license for Yamal-SPG from 2020 to 2045 (*Vremya Novostei*, March 25, 2010).

stations up to 14-15 billion cubic meters from a total demand of 17 billion cubic meters. Novatek also enticed Itera's 11-year-old client UGMK (a Ural mining and smelting company) in the Sverdlovsk region (the volume of deliveries was 600-650 million cubic meters).²³

Thirdly, Novatek started using the tool of M&A against Gazprom and Gazprombank. In December 2010 Gazprom had to reduce its share in Novatek two times – 9.4% of this share was bought by Gazprombank for 57.46 billion rubles, and in March 2011 an announcement appeared about selling this package to Mikhelson and Timchenko for 82 billion rubles (i.e. the “mediator's” profit amounted to around 24.5 billion rubles).²⁴ The market price of this package this year is about USD 4 billion, but in December 2010 Gazprombank bought it two times cheaper.²⁵

At the end of 2010 – beginning of 2011 another set of deals with the participation of Novatek, Gazprom and Gazprombank took place. The first one dealt with Severenergia. Initially it was called Enineftegas and was created on the basis of assets that Italy's Eni and Enel bought at the auction of Yukos property in April of 2007. The lot, for which the winners paid 151.536 billion rubles (USD 4.84 billion at the going rate) included 20% of Gazprom Neft shares, 100% of Artigas shares, 100% of Urengoil Ink and another 19 small assets. In total, this company owned licenses for oil development at four deposits in YNAR. The total oil resources in the ABC1+C2 categories amounted to 568 million tons, while those of condensate were 155 million tons, and gas was 1.3 billion cubic meters, or 13.3 billion barrels of oil equivalent. Extraction at the first one – Samburskii – was planned to start in 2011. But before the beginning of the auction Gazprom announced that it concluded a call option with Eni and Enel on purchase of these assets. As a result, in April 2009 Gazprom bought 20% of Gazprom Neft shares for USD 4.1 billion, and in August of 2009, 51% of Severenergia shares for USD 1.6 billion. It's the above-mentioned 51% that Novatek and Gazprom Neft intended to buy from Gazprom, having created in the summer of 2010 a JV called Yamal Razvitie. The deal of Severenergia was closed during the last day of October 2010. The remaining share, 49%, belongs to Arctic Russia B.V., the JV of Eni and Enel (60% and 40%, respectively). Naturally, Gazprom Neft was interested in oil extraction, while Novatek was interested in gas and condensate to be processed at the nearby Purovskii gas processing plant. Obtaining Severoenergia's deposits was even more profitable, as by November 2010 the government adopted the scheme of financing for the oil pipeline

Zapoliarie-Purpe, which will pass along three out of four deposits of this company. According to the scheme the state will guarantee credits for the sum of 60 billion rubles, which will allow starting the pipeline in 2015.²⁶

The second deal had to do with the purchase on December 19, 2010 of 51% shares of Gazprom's "daughter" Sibneftegas for 26.88 billion rubles (USD 874 million at the current rate). The story of Sibneftegas is quite instructive as an example illustrating, on the one hand, Gazprombank's monopolist-blocking behavior, and on the other hand, Novatek's activity of breaking through this monopoly. Sibneftegas was controlled by Itera (which branched off Gazprom already under its former leadership). In 2003 Itera even intended to develop its largest deposit, the Beregovoe one. But in the course of three years Gazprom blocked access to the pipe, and at the end of 2006 Itera was forced to yield 51% of assets to Gazprombank for USD 131.5 million, and then extraction at the deposit started. Ever since Gazprombank repeatedly tried to resell its Sibneftegas asset to Gazprom, but the latter always refused, demanding changes in Sibneftegas' charter according to which the company was to be managed on parity terms with Itera (which had around 49%) and the extracted gas would be divided according to the partners' shares. Novatek, on the contrary, was flexible. Its leaders believed that as the shareholder possessing a controlling block of shares and majority in the board of directors it could completely manage operational activity of the enterprise, and to settle serious, key issues, demanding a qualified majority Novatek leadership that would "build partnership relations" with the minority.²⁷

Generally speaking, against the background of Gazprom's sluggishness, lag effect and indecision there is an impression that there are no limits for stormy expansion of Novatek's leaders. Anyway, it spreads to all those spheres where Gazprom, for objective, but more often subjective reasons, applies the brakes. So, for example, in December 2010 Mikhelson's offshore company Miracle agreed with Gazprombank on the purchase of the largest petrochemical holding in Russia, SIBUR, for USD 5.5 billion. The deal was realized stage by stage: at first, a 25% share of this enterprise was bought, in February the next year the Federal Antimonopoly Service (FAS) approved a deal for the next 25%, and in April 2011 Mikhelson placed an application with Russia's Government Commission for Foreign Investments to increase its share in SIBUR to 100%, and the application was approved this summer. The paradoxical nature of this story is in the fact that at one time new Gazprom leadership applied a lot of effort to stop the "flowing

away” of SIBUR’s assets organized by old leaders through mediation of a certain Yakov Goldovsky, placed at the wheel of this holding. However after the arrest and expulsion of Goldovsky with the help of Gazprombank and Russia bank*, Gazprom’s leadership hardly cared about consolidation and modernization of the holding, especially in the years of crisis. Nevertheless, the holding’s management succeeded in making a partial breakthrough: at the Gubkinskii gas processing complex (Yamal) a low-temperature condensation facility was put into operation with the most modern technology, which allowed extraction of up to 99% of liquid fractions from associated oil gas. Mikhelson immediately assessed the situation and arranged for buying from Gazprombank a non-profile and burdensome SIBUR holding. At the same time the fate of the long-frozen Gazprom project on LNG production in the Leningradskaya region, Baltic LNG, was decided. Gazprom for several years had been discussing the project with a number of foreign partners, but in September 2007 assessed it as unprofitable. And now SIBUR buys from Gazprom Germania and Sovkomflot a site where it was planned to build an LNG plant and instead intends to create a methanol production unit with a capacity of 2 billion cubic meters a year. It will be the largest methanol-producing enterprise in Europe.²⁸

It is quite possible that in the second half of 2011 some other M&A processes and purchase of new resources might take place. Anyway, the largest co-owners of Novatek, Mikhelson and Timchenko, plan by 2015-2017 to more than double capitalization of their company (up to USD 100 billion), bring natural gas extraction up to 60-80 billion cubic meters, and that of gas condensate up to 8 mln tons. (In 2010 Novotek’s production was 37.2 billion cubic meters of gas and 26 million barrels of condensate. Its share in Russia’s total gas production is 6%, and its share in deliveries to the Russian domestic market is 11%. Its proven/probable reserves are 1.84 trillion cubic meters of gas and 1.35 billion barrels of liquid. Its engaged employers are about 5,000 people.) In any case, information appeared in the press that Gazprom was discussing the possibility of selling 51% of Northgas** shares if Inter RAO, supervised by Igor Sechin (the deputy chairman of the RF government) bought the remaining 49% from Farkhad Akhmedov, who controlled this shareholding through Cypriote REDI

* The Russia bank is headed by Yuri Kovalchuk, who is closely connected with Putin.

Holdings. In mid-April 2011 Mikhelson just in case directed a letter to Miller asking to allow Novatek to carry out an independent assessment of the cost of 51% of Northgas' shares and present the necessary information. Miller agreed. However, for the moment everyone is waiting for the results of negotiations between Inter RAO and Akhmedov.

Fourthly, Novatek did not shelve negotiations with potential foreign partners. It tentatively created the JV Terneftegas with France's Total to develop the Termokarst deposit in the Yamal-Nenets autonomous region with proved gas reserves of 49 bln cm. Novatek's share in the JV is 51%, and that of Total is 49%. The latter will buy out additional emissions for USD 18 million, and took on itself 75% of expenditures up to the beginning of industrial gas extraction. Novatek itself will spend 25% on prospecting expenses in the next two years.²⁹

However, after Gazprom and Novatek signed a special agreement in the spring of 2010 on export of Yamal LNG abroad (we'll dwell on it a bit later) Novatek received the chance to realize an option for Timchenko's 23.9% share in the Yamal LNG project. When Novatek paid Timchenko a bonus amounting to USD 100 million, it got a free hand to attract foreign partners to the project, and Novatek speeded up negotiations on development of its main field, Yuzhno-Tambeiskii, with Total, Shell, Mitsui, Statoil Hydro, ExxonMobil, ConocoPhillips and Qatar Petroleum. But the most intensive was its negotiations with Norwegian Statoil. This project envisages construction of natural gas liquefaction with a capacity of 15 million tons of LNG a year and 1 million tons of condensate, putting the first line into operation in 2016.

The breakthrough was made in early March of 2011 at Prime Minister Putin's country residence in Novo-Ogarevo. Total Chief Executive Christophe de Margarie and Novatek Chief Executive Leonid Mikhelson approved and signed two deals. In the first deal (which was closed in April) Total will buy a 12.1% stake in Novatek from its two chief shareholders, Mikhelson and Timchenko, for about USD 4 billion. Total has also committed to increase its stake to 18% during first year and to 19.4% during the next three years. In the second deal (planned to close by end of June 2011) the French

** Northgas resources amount to 295 billion cubic meters of gas, and 58 million tons of condensate and oil. In 2010 it extracted 3 bcm of gas with prospects to bring the extraction up to 8 bcm by 2015. Northgas started developing deep Neocomian reservoirs at the North Urengoi field in the Yamal-Nenets autonomous region in 2001 (Upstream, April 15, 2011, p.13; Vedomosti, April 28, 2011).

super-major will take control of a 20% stake in the Yamal LNG project (with this Total was set to become Novatek's strategic foreign partner in the Yamal liquefied natural gas development project). Total will provide technical expertise and financial booking to the development of the asset, which has estimated recoverable gas reserves of more than 1.3 trillion cubic meters.³⁰ Due to the fact that it obtained 12% shares of Novatek, Total had a claim on one place of the board of directors for the election of which an extraordinary meeting of the company's shareholders was held on June 27, 2011. The French have proposed their candidate, the head of its prospecting and extraction department Iv Lui Darrikarrer (the second-ranked person at Total). This would be the second important foreign expert in Novatek's leadership after American Chief Executive Mark Gyetvay, who is responsible for financial aspects of the business.³¹

In the meantime, Novatek's leadership started with confidence the realization of the LNG project's preparatory phase. In March 2011, Novatek subsidiary Yamal LNG awarded U.S.-based Chicago Bridge & Iron (CB&I) a front-end engineering and design (FEED) services contract for its planned liquefied natural gas plant on West Siberia's Yamal Peninsula. The scope covers FEED work for the whole 16.5 million tons per annum plant to enable development and exports from the South Tambey gas field, and the design of LNG storage and loading facilities. CB&I's FEED plan is based on using its international partners – Japan's Chiyoda and Italy's Saipem – as well as collaborating with Russia's NIPI Gazpererabotka design institute to address local design and authority approval requirements. The FEED will provide a basis for the detailed engineering procurement and construction phase, as well as project schedule and cost estimates to enable Yamal LNG to secure the final investment decision. This FEED work is due for completion in the first quarter of 2012.³²

By the end of March 2011, reports suggested Norway's Statoil might also become a partner, though as of mid-June this was still not confirmed. Instead, in May 2011 the Indian paper *Hindustan Times* wrote that a consortium of Indian companies, ONGC Videsh, GAIL, and Petronet LNG, put in a claim for 15% of the Yamal LNG project. While Total and Statoil are important for Novatek primarily from a technological point of view, the Indians might secure another, not less important front, the one of marketing. Participation of the Indian consortium is the guarantee for the sale of about one third of the future Yamal LNG, and on full scale at that. Petronet LNG was created according to a decision by the

Indian government specially as an LNG importer (it already has one regasification terminal, while the second one will be launched in 2012), GAIL, which is controlled by the state and is the main gas seller in India, while ONGC Videsh is the operator of all foreign projects of the ONGC state corporation (it has a 20% share in the Sakhalin-1 project and 100% in Imperial Energy in Russia). A Novatek representative confirmed the fact of negotiations with the Indians, and pointed out that it was still early to speak about details.³³ It is interesting that approximately a year before that the Indian state company ONGC tried to establish business relations directly with Gazprom: on March 12, 2010 they signed with Gazprom a supplement to a memorandum of understanding in which they agreed about possible participation on Yamal.³⁴ However, just as it used to happen, no practical steps followed. And now, perhaps, ONGC received hope to find real mutual understanding with a more pragmatic Russian company.

Fifthly, during all this time Novatek's second co-owner Timchenko did not sit still. At the end of March 2010 the oil trader Gunvor, which Timchenko owns together with Swedish businessman Torbjorn Tornqvist, announced that from April 1 he would begin to work on the European gas market. The vice-president of the gas division of the company, Robert Ellen, told the press that on that very day traders would inject gas into storages on the territory of France, Germany and Slovakia into the preliminary reserved capacities. Gunvor has already concluded agreements with regasification terminals in Belgian Zeebrugge to deliver LNG to the northwest of Europe. The company plans this year to carry out up to five LNG deliveries (the standard capacity of a methane carrier is 130 thousand cubic meters or about 250 thousand tons of LNG), but the main deliveries of up to 20-30 gas carriers a year will be accomplished in two to three years when the LNG plant in Yamal will start working. Gunvor Company will at this stage cooperate with all the main international gas producers and will concentrate on Europe, but in the near future plans deliveries to India, Kuwait, and AP region countries.³⁵

Facing the increasing attack of Timchenko's group alliance with Novatek, Gazprom had to step on the way of historic compromise. On March 23, 2010, the heads of the two companies, Miller and Mikhelson, had a meeting during which, according to the gas monopolist's press service announcement, they "came to an agreement on main principles of cooperation and realization of LNG, which would increase the attractiveness of the project."³⁶ Judging by everything, those were the first

negotiation of partners enjoying equal rights between the monopolist and an independent gas company. But in this case it would have been wrong to ignore the important role of Deputy Premier Igor Sechin, the curator of the Russian fuel and energy complex and the man who personally lobbied in 2008-2011 for free access of independent gas distributors (including associated gas). Naturally, such actions and decisions could not take place unknown to (and maybe with the direct encouragement) of the prime minister himself. This way or another, but the result of the confrontation between Gazprom and Novatek was an “agency agreement,” i.e., an agreement when one party (agent) commits itself to make for remuneration on a commission from another party (principal) legal, and other steps on its behalf, but at the expense of the principal. In the given case Gazprom acts exactly as a commercial agent who receives a commission for his service on organization of Novatek LNG exports. At the beginning of the negotiations the leadership insisted on maximal concessions to buy out all LNG from the client. But Novatek’s leaders insisted on preservation of their gas ownership. Then Gazprom demanded a 2% commission, but finally had to agree to around a symbolic 1%. Another concession in the signed agreement was an acknowledgement of the South-Tambei deposit as “a start-up in creation of LNG capacity in Yamal.”³⁷ As for condensate, it remains in full possession of Novatek (as it can be transported by railway or motor transport). It is interesting that for two years following the beginning of gas extraction will be injected back into the bed to increase condensate output. Besides, in the process of construction of the line for gas liquefaction Novatek might obtain an opportunity to use sea routes, bypassing Gazprom’s transport gas net. It is not an idle supposition and is confirmed by the fact that Novatek practically acted as an initiator in reanimation of the NSR’s efficient exploitation. Of course, it would be wrong to say that before the appearance of Novatek nothing happened beyond the Arctic Circle in the hydrocarbon cargo transportation sphere within the framework of the NSR, which was principally neglected during the Yeltsin era. Let’s take, for example, Naryanmarneftegas, a JV of Russian oil company LUKOIL and ConocoPhillips, which is developing the oil condensate field Yuzhnoe Khylychuy (150 km from Narian-Mar, the capital of the Nenets autonomous region) that is believed to be one of the largest beyond the Arctic Circle. In 2008, LUKOIL put into operation the Varandeiskii oil shipment terminal, whose important constituent is a stationary offshore ice-steadfast dock, located in the open seas 22 km

from the coastline (for the moment, it is the only object of its kind in the world). Beside it, the terminal complex consists of an underwater oil pipeline and coastal reservoirs. Of this complex construction, 30% was financed by ConocoPhillips, and the remaining 70% was given by LUKOIL. In 2009, 18.5 million tons of oil with gas condensate was developed in the Nenets autonomous region, but only a bit more than 7.5 million tons were transported by sea. Bearing in mind that in 2011 it is planned to start development of the Prirazlomny field (located 60 km from the region's coast) and that raw materials from it will be transported by sea, the significance of the speedy development of the NSR is considerably increasing. It's not by chance that the issue was discussed on November 26, 2010 in Naryan-Mar, where assizes of the Council of Federation Committee for National Maritime Policy took place. The session topic was, "Actual issues of state regulation on the Northern Sea Route and its influence on development of the regions (based on the example of the Nenets autonomous region)." It was attended not only by Council of Federation members, but also by State Duma deputies, representatives of the Ministry of Transport, Ministry of Emergency Situations, and other federal executive power bodies.³⁸

While discussions were on active leadership of Novatek, the NSR was practically opened through de facto navigation: on August 14, 2010, the tanker *Baltika*, with an experimental consignment of gas condensate (70,000 tons) freighted by Novatek from Sovcomflot (a state shipping company) left Murmansk in Russia's extreme northwest and went to the Asia-Pacific region across the NSR on September 6. This consignment, for China National Offshore Oil Company, arrived at the Chinese port of Ningbo. The consultancy Business Monitor International commented that Novatek could reduce its normal journey to Asia of around 20,400 km around the Suez Canal to around 12,500 km, allowing for significant reduction in transit time, fuel costs, and the risk of pirate attacks.³⁹ Having demonstrated the route's viability, Novatek aims to send six to eight condensate cargoes along the NSR in 2011. Mikhelson who was on board the icebreaker "Rossi" during the whole route, told a reporter from *Vedomosty* that delivery of condensate via the Suez Canal at that time would have cost Novatek USD 50 per ton, i.e. approximately USD 3.5 million for the whole consignment, while delivery along the NSR cost half a million dollars less. At the same time, Sovcomflot's General Director Sergei Frank, who was on his tanker the "Baltika" during the whole route,

explained that time economy was 45%. He added that Novatek's plans for 2011 would be a serious help for Sovcomflot and Atomflot, as they fall on a low season for them. When the announcement about two accompanying icebreakers, the "Russia" and the "Atomflot," appeared, there also appeared suppositions that it was all done out of over-cautiousness. But soon the "secret" was opened: when the caravan reached the strait between the Novosibirsk Islands and the mainland, the second icebreaker separated from the caravan and doubled the islands from the north to explore a more northern route, where larger-capacity vessels could pass (the Suezmax with deadweight from 150 000 tons). As Mikhelson told reporters, in the near future Novatek plans to direct APR LNG on large-capacity gas tankers.⁴⁰

On February 1, 2011, Novatek and Atomflot struck deal on the NSR. They signed a cooperation agreement that lays down both companies' intent to engage in the fields of safe shipping. The agreement includes:

- a) shipping of equipment for the development of the South Tambey field on the Yamal Peninsula;
- b) shipping of LNG from the same field;
- c) and organization of steering by icebreakers during transportation of Novatek's gas condensate along NSR routes to Asia-Pacific countries in 2011.⁴¹

NOVATEK PHENOMENON – SINGLE SUCCESSFUL START-UP PROJECT OR REAL START FOR NEW STATE STRATEGY?

In special Russian publications and some mass media sources there was certain confusion or even complete incomprehension of the essence of the events that were taking place concerning successes of Novatek in 2008-2010 (and even in the first half of 2011). It's surprising, but was especially demonstrated by the monthly magazine *Neft I Kapital*, which claims to be reputable and knowledgeable. In one of its Summer 2010 issues (when it seems that the situation had almost been clarified) there appeared practically an editorial, strange in its lack of logic, that presented a scheme describing the alignment of forces and Gazprom leadership's behavior.⁴² The article presents Gazprom as an omnipotent organization and Novatek as a toy in its hands. Meanwhile, the article completely ignores the role

of the government (and especially that of Putin), while the very favorable regime created for Novatek is ascribed to Gazprom leaders as a super-resourceful Gazprom intrigue. It turns out that Gazprom allegedly planned it *to deceive foreign investors*, so that they would bite the bait and invest at full capacity, planning in reality to develop Yamal LNG not earlier than 2024-2027 (as was written by Gazprom's leaders in the first variant of "The General Scheme of Russia's Gas Industry Development," presented to the government for adoption, but not adopted. It is interesting that the "traces" of such an interpretation of the situation can be found in further publications not only of the given magazine, but of other mass media sources as well.

The main sin of such an interpretation was, however, in ignoring the fact that the government had long ago formulated the concept of state-private partnership (SPP), where the state's role was in the formulation of ideas and large national projects, in partial investment in the latter (especially in various infrastructure spheres), etc., while the role of business was that of operational initiatives, realization of information technologies and the role of main investor. In the past Gazprom has clearly demonstrated its inability, and even reluctance, to give up its comfortable existence and fit into this SPP concept, having balanced its purely corporate interests with national goals. Instead, Gazprom's leaders spared no money for self-advertisement, for example, broadcasting the slogan "Gazprom is a national heritage," which could be heard from Russian TV sets continually over the course of the last several years. All this could not pass by Putin's attention. Just as the fact that he practically had to display initiative himself in the actual realization of all the largest energy projects by applying the "manual management" method (as if Russia is Singapore). Discontent accumulated. We have already mentioned his tactics in stimulating Gazprom's activity (as well as that of other organizations and agencies) in the Far East, having appointed Vladivostok as the place for APEC summit in 2012. Now he again, probably, decided to apply "shock therapy" for Gazprom in the LNG projects sphere, having created for the latter an active competitor represented by Novatek.

Perhaps it is necessary to stress once again that all the steps made by the government and Putin personally are in no way aimed at destruction of Gazprom as a large corporation. It would have been extremely unreasonable and damaging for the whole economy. But they are efficiently aimed against the negative aspects of Gazprom's monopolism, which in

recent years has turned into the main brake on almost all of Russia's large energy projects, and turned Gazprom itself into a hindering factor in its own development. For the above-mentioned suppositions not to seem a kind of wishful thinking, it is necessary perhaps to present in confirmation some real facts.

1. First, the real divergence of views on the situation in the gas industry between Gazprom's leaders and the government (Putin and Igor Sechin, his deputy on the fuel and energy complex) were more clearly outlined in 2009. The main lesson learned by Putin from the world crisis and the damage caused to Gazprom was that continuation of former conservative-inertial strategy of Gazprom's leaders would inevitably lead the gas industry into a blind alley. The conviction in necessity to find that key link with which it would be possible to pull the whole industry out of a "Gazprom bog" was strengthening. This link could be LNG. Having concentrated the government's efforts on the latter it would have been possible to resolve two principle tasks – to raise the gas industry to a new technological level, on the one hand, and to get natural gas exports out of a narrow regional framework to a global space, on the other. The first serious rift in relations with Gazprom appeared in the summer of 2009 during discussion of a "General Scheme of Russia's Gas Industry Development for the Period up to 2030," a document prepared by experts of applied research institutes under the aegis of Gazprom. It contained no breakthrough ideas, but only outlined general indications for a far-off future, with an excessively large lag between minimum and maximum indicators of future achievements. The government returned the document as requiring improvement. Among the main criticisms there was noticed a lack of concrete plans in the sphere of projects on natural gas liquefaction and data on its export.

2. In a new version of the "General Scheme" (preparation of which took more than a year) there appeared a section on LNG, where the Far Eastern and Shtokman projects were mentioned, and even the Yamal-LNG project. Regarding the latter, quite a detailed comment was given, the essence of which is as follows: yes, technically the project can be realized, but economically it does not seem reasonable. At the same time, negative aspects of the project (real and imaginary ones) were described in detail and the project itself was set off against another Yamal project, Kharasaveisk LNG, that several years before was rejected by Gazprom in favor of traditional transportation by pipe. As a result, Yamal-LNG wasn't even included in the new version of the "General Scheme" on the

list of new LNG capacities under way in Russia. This was equal to a direct challenge to Putin. Already in September 2009 he had held a meeting in Salekhard (the administrative center of YNAR) on energy problems and invited representatives of more than a dozen foreign corporations to it. There he persistently invited co-participation in LNG projects. His signal was obvious: the concept supported by Putin – the one of state-private partnership – as the major component includes not only Russian private capital but large foreign (both private and state) corporations as well. Let me remind you also that at the end of 2009, Putin, as chairman of the Committee on Foreign Investments, contributed in every way possible to the growth and organizational strengthening of Novatek already described above.⁴³ Finally, there is a really momentous fact: in June 2010 in Paris, before the beginning of the International Economic Forum, Putin met with De Margery, the executive manager of Total, and mainly discussed not the issue of the Shtokman project, but Total's participation in the Yamal-LNG project (De Margery expressed a wish to buy a 20-25% share). At the same time he passed a personal message to Putin from the Qatar government expressing hope for cooperation between Qatar Petroleum and Novatek.⁴⁴

3. Though Gazprom's intrigues led to certain hindering of Mikhelson's negotiations with supposed foreign partners in the project (he decided to wait for the final clarification of the government's standing), Gazprom's triumph was not long-lasting. On October 10, 2010, Putin held another assizes in the very same YNAR, this time in Novii Urengoi. On the eve of the meeting the premier visited the main Novatek field Yurkharovskoye. While touring the gas field, which now has a capacity of 33 billion cubic meters of gas per year, Putin inspected a methanol production unit, the only one in Russia installed directly in a gas field. The prime minister also examined the work of the complex that prepares the gas before it is fed into the country's integrated gas distribution system. According to Novatek, which manages the Yurkharovskoye gas field, this project is unique because using the methanol production unit at the field helps rule out the environmental risks related to transporting this reactive substance. The head of Novatek, Mikhelson, informed Putin that capital investment in this field had amounted to about 118 billion rubles and that the field had enough capacity to provide about 10% of the gas consumed in Russia. Mikhelson also briefed the prime minister on the innovative technologies that are being used at the Yurkharovskoye gas field, including the disposal of drilling slurry and on-site methanol production units. In addition, Putin

was told about the recently launched gas condensate pipeline, which is powered only by solar and wind energy. In the morning he announced that he signed an order on the plan of development of liquefied natural gas on the Yamal Peninsular. In fact, at the moment this document has to do only with Novatek, and envisages vast privileges. For the first time within the general scheme framework the government supported only high-tech projects on gas extraction and not the whole extraction. "We have to think about tax benefits for those companies that deal with new gas projects. For example, we shall not manage without such benefits during work on the shelf or LNG," Putin said, adding that he had already "charged the Ministry of Finance and Ministry of Social Development with preparation of appropriate proposals. They have already formed a mechanism for granting benefits."⁴⁵

The plan signed by Putin envisages preparation of an appropriate document package by departments, with final adoption of it by the government for submission to the State Duma in early 2011. Meanwhile, the Russian Parliament is expected to approve a series of tax cuts and incentives later this year to lighten the financial burden on Novatek and its partners in the Yamal LNG project. Under the package proposed by the Finance Ministry, gas produced on the Yamal Peninsula and converted into LNG will be exempt from production tax from January 1, 2012. The ministry also proposed an oil production tax exemption for condensate produced with the gas on the Yamal Peninsula. According to the proposal, the exemption will be valid for the first 250 billion cubic meters of gas produced under a single license, or 12 years from the start of commercial production, whichever occurs first.⁴⁶

According to the complex plan of the Yamal LNG project approved in Putin's order, in 2012, land management works should be completed on the peninsula, and in 2012-2016 it is planned to build the first turn of the LNG plant and simultaneously to prepare documentation, while in the course of 2013-2017 it is planned to create the second turn, and the third one in 2014-2018. (Mikhelson specified that every turn is 5 million tons of LNG per year.) The plan also envisages measures to provide transport logistics, to create infrastructure, to provide labor resources and security of work in offshore strips of the Gulf of Ob and Kara Sea. The Ministry of Transport, Ministry of Industry and Trade together with Sovkomflot and Novatek must determine what is necessary to deliver equipment to Yamal and to transport LNG and condensate from it; to calculate need for an icebreaking

fleet, to create an ice-class tanker fleet, to build an airport and to prepare a pass-through shipping canal and seaport. The Federal Security Service and Ministry of Defense were also given tasks. The former should simplify the regime of stay for company employees working on the Yamal-LNG project in this zone, while the military ought to realize steps to clear the territory of mines.⁴⁷

4. In the course of the meeting in Novy Urengoi, all the statements and Miller's request to spread the benefits system to other gas projects (i.e., those of Gazprom) was met with vague remarks by Putin that "we shall probably think about it." In reality, it was decided to name the project Yamal-LNG pilot start-up project or special green field project, obviously to cut off Gazprom's traditional claims for a state budget. And in November 2010 the government adopted a regulation on standards of opening information to natural monopolies, which are rendering services on gas transportation by pipes. In fact it meant a radical change binding Gazprom" to provide transparency of monopolist services and relations with competing independent gas companies. It considerably reduced the possibility of an ungrounded refusal of access to the pipe. More than that, the government's criticism of Gazprom is becoming more and more open and directly threatening the monopolist status of this company. In early February, 2011, a month before the announcement about Novatek and the Total deal, Putin declared at a meeting in St. Petersburg in 2010 on the results of fuel and energy complex that the government of the Russian Federation may be ready for changes in legislation if Gazprom – a Russian monopolist in gas transportation via main pipelines – did not allow independent gas producers access to its transportation capacities. "Either you work more efficiently, or we shall be forced to change the existing rules, to change the legislation," the premier said at the meeting, having stressed that "the company puts its own interests above the interests of the industry's development."⁴⁸ We could even say "the country."

Promoting in every way possible the formation of a new grand LNG production center on the Yamal peninsula, Putin did not forget to provide it with an additional raw materials base. Soon after the meeting in Novy Urengoi, on December 1, 2010, the premier through his order supplemented the complex plan on LNG with new assignments: Rosnedra, the Ministry of Labor, Ministry of Energy, Ministry of Economic Development and "all the interested federal executive power bodies" must in 2011 grant the right to use the subsoil of the Severo-Obsskii and Vostochno-Tambeiskii regions in

the Gulf of Ob of the Kara Sea and two land fields on the Yamal Peninsula, Salmanovskoe (also called Utrennee) and Geophizicheskoe. The resources of the latter two amount to about 900 billion cubic meters (767 and 142 billion cubic meters, respectively), while the Severo-Obskii plot contains approximately 1.5 trillion of expected gas reserves. There is no data on the Vostochno-Tambeiskoe field, but there is a general estimation for the Severo-Obskoe and Vostochno-Tambeiskoe fields: almost 1.8 trillion cubic meters of gas and 521.4 million tons of oil and condensate. As all these deposits belong to the category of large strategic ones, while two of them are at the same time shelf deposits, during organization of a tender appears the problem of access of private companies. But Premier Putin at the end of 2010 ordered the government committee on gas and energy complex issues, reproduction of the mineral and raw materials base and increase of energy efficiency of the economy to “provide in established order realization of measures aimed at extension of the resource base of the forming center for LNG production on the Yamal Peninsula, including by way of licensing of undistributed funds of subsoil.”⁴⁹ This way or another, claims for obtaining a license were made by Novatek (for all four fields) and Itera, with Yakutskaya Toplivno-Energeticheskaya Kompania (a member of Ziyavudin Magomedov’s Summu Kapital), were interested only in the smallest Geophizicheskoye field. Though the tender for all four plots is planned for June 23, 2011, in early May it became known that only Novatek will be allowed to participate in it, while the other claims the Rosnedra committee regarded as “falling short of the requirements.”⁵⁰

It was absolutely clear from the majority of Prime Minister Putin’s speeches that the question was not about one extraordinary case that became the object of his great attention, but that he regarded Novatek *as an example and a precedent* that would in the future be followed by many other similar projects within the framework of state-private partnership on creation of LNG production to raise the industry’s level and diversify Russian gas exports. It’s not by chance that among the orders directed to Minister of Energy Shmatko he charged him to render every possible assistance to such initiatives. And one such initiative really did not keep us waiting and was right in the Arctic region, near YNAR, the Arkhangelskaya region, to be more precise, in its Nenets autonomous region (NAR). Influenced by the precedent created by Novatek, the small and little-known company Alltech, which received licenses for the Kumzhinskoye and Korovinskoye fields in the Nenets autonomous region in 2010-2011,

changed its initial, more modest intentions and decided to deal with the Pechora LNG project. Alltech is currently looking for a strategic partner outside of Russia to take up to a 49% stake in this LNG project, which calls for the development of two fields in the Nenets region and exports of LNG from the port of Indiga. The project has full backing of Governor Igor Fedorov, as he explained to South Korea's general consul in St. Petersburg, Lee Sok Bae, during his recent visit to Nenets' regional capital Naryan-Mar. An Alltech executive said that the company is in advanced talks with Vietnam's PetroVietnam, with China's CNOOC, and with South Korea's Kogas. Last year, France's Technip completed a feasibility study for the USD 4 billion LNG plant, which will have an initial annual capacity of 2.6 million tons of LNG and which may be doubled in the second phase. The first phase is set to be completed in 2015.

According to the Alltech executive, the company is now considering building the LNG plant on a platform that may be brought to an installation site near Indiga Port to avoid large-scale construction activities in environmentally sensitive onshore areas. Potentially, the caisson foundation of the platform may be ordered from the Sevmash military shipyard, which recently completed an oil production platform to be installed on Gazprom's Prirazlomnoye field (in the Pechora sea), he said. Alltech plans to announce the final investment decision on the Pechora LNG project in 2011. The company also signed an agreement for construction of four tanker-gas carriers (with deadweight not less than 177 thousand cubic meters) with the Far Eastern Shipbuilding and Ship Repair Center.⁵¹

TURN TO ASIA PACIFIC

The second large shift in the Russian oil and gas sector over the last two to three years was the beginning of a turn to the Asia Pacific. If the main essence of Putin's first presidential term was "collecting stones" (not only in the oil and gas sphere, but in consolidation of Russian statehood in general, which Yeltsin had put on the verge of collapse), starting from the second term of his presidency Putin for the very first time in Russian history (including that of the USSR) as the country's top leader began regular visits to Eastern Siberia and the Far East, as well as started to attend forums in the Asia Pacific. There came the understanding (a bit delayed though) of the necessity of a cardinal shift in the process of geographical balancing of the

Russian oil and gas sector, of the need to pull up energy business activity in Eastern Siberia and the Far East to eliminate the one-sided dependence of this sector on Europe.

By the way, ignoring the importance of Eastern Siberian and Far East development for the country was typical for large private and state oil and gas business representatives, who behaved as *timeservers* urging to “squeeze all the juices” from the structures they had obtained and ignoring complicated and expensive, highly cost-based greenfield projects. The first serious battle in this sphere took place in 2003, when the question about construction of an East Siberian and Pacific oil main pipeline (ESPO) was put on the government’s agenda. The most active opponent of this oil pipeline to Nakhodka (today Kozmino Bay) was Mikhail Khodorkovsky, the president of the largest oil company, YUKOS. He personally agreed with the Chinese on a shortened version of the pipe to be closed up on China. He even yielded to China’s insistence and gave up his initial plan of oil transit via Mongolia, with whose authorities he had also managed to conclude an agreement. Khodorkovsky did not spare money to lobby his plan in legislative and executive power structures and in mass media. Unfortunately he also managed to rely on the opinion of former leaders of the Siberian branch of the Russian Academy of Sciences, and certain researchers there stated in interviews that the resources of East Siberia were so scant that they obviously wouldn’t be sufficient to fill the projected pipe capacity (80 million tons a year) and would barely be enough to realize the variant of pipe directly to China (30 million tons a year). However, better late than never, as the saying goes. Nowadays researchers of the Siberian branch are more realistic in their reasoning, as we can, for example, see from publications in the magazine *Neft Rossii* (“Oil of Russia”) and in other sources. That’s what a group of authors now state in a comparatively recent article.⁵²

East Siberia and the Far East concentrate more than 54 trillion cubic meters, or about 21% of the initial total gas resources of Russia, explored reserves of 4.9 trillion cubic meters (10%). The extent of exploration of natural gas reserves in these two regions is 8.6% and 11.3%, respectively, which demonstrates promising perspectives of new discoveries. Total reserves of condensate in the given regions amount to 3.3 billion tons, while for explored reserves, 220 million tons, the extent of exploration is 6.3% and 7.9%, respectively. Here also are more than 15 billion tons of total reserves of oil (more than 18% of total country’s reserves), while the share of unexplored reserves reaches 50%. According to the table presented

by the authors, oil development in East Siberia and the Far East, which increased from 13.8 million tons in 2008 to 36.2 million tons in 2010, is forecasted to reach 75 million tons in 2015 and 95 million tons in 2020, while by 2030 it will reach 112 million tons.

I would like to point out another detail: as soon as Putin, reacting to the request of ecologists and advice of academic experts, moved the route of the ESPO oil pipeline 400 km to the North of Lake Baikal and much closer to the prospective oil and gas fields of East Siberia, representatives of Russian oil and gas companies instantly became active and started to obtain licenses for blocks of territories to invest in further prospecting and construction of oil-field facilities, and nowadays nobody doubts that the planned capacity of the main ESPO pipeline will be filled. The first half of the project (to Skovorodino and offset to China) has already been constructed, and in early 2011 was put into operation. The second stage of construction must be completed in 2012, but an oil terminal complex in Kozmino Bay is already working and receives oil transported along the railway from Skovorodino (where a transshipment complex has been constructed) to Kozmino.

ESPO - as far as its significance for Russia is concerned – may be placed in one historic line with Trans-Siberian main railway built before the October Revolution on the initiative of the outstanding Russian figure Sergey Vitte. Today, another important step in the development of Russian Far Eastern region and expansion of its cooperation with Asia Pacific countries is the decision to hold the annual APEC meeting in Vladivostok in 2012. Many in Russia believe that acceleration of energy projects in a new oil and gas province in East Siberia-Far East in 2009 is connected with the decision to hold the APEC summit in Vladivostok. On the surface it really looked like that, but the final decision on the location of this event was preceded by stormy discussion in governmental circles, in the course of which some representatives of inertial top bureaucracy of the country proposed to simplify the task and hold the summit either in Moscow or in St. Petersburg, where there already was infrastructure. However, the country's top leaders (and especially Putin) decided to use the APEC summit in Vladivostok as a breakthrough factor to accelerate the richest natural energy resources of the new province and establish closer economic cooperation with Asia Pacific countries.

The following scheme illustrates the main elements of this program aimed at development of a new energy province in the east of Russia:

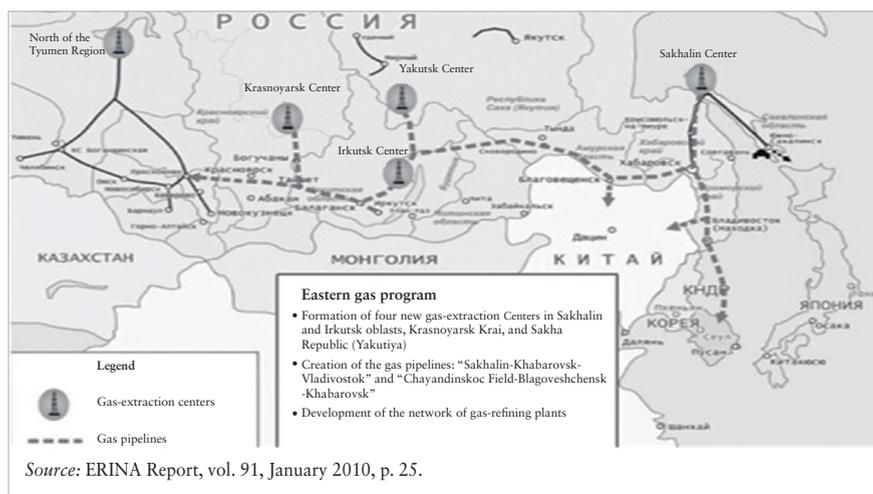


Figure 5.1 The development of oil and gas complexes in the eastern regions of Russia

We can notice unusual speed and decisive steps made by the countries' leadership in 2009. Putin personally attended the ceremony of welding the first link-up of a new Sakhalin-1–Khabarovsk–Vladivostok gas pipeline, which by 2012 will provide gas not only to Vladivostok, but also the whole Primorskii region. Gazprom, which in the spring of 2009 only started construction of the Bovanenkovo–Ukhta gas pipeline*, announced in the summer that putting the object into operation was postponed to the third quarter of 2012. Capital investments were reduced by 20% and means (including those of equipment and personnel) were moved to the Far Eastern project.⁵³ In October 2010, according to an announcement by a high-ranking executive manager of Gazprom, the beginning of natural gas extraction on Kirinskii field within the Sakhalin-3 project framework was shifted to 2011 or the very beginning of 2012, i.e., two to three years earlier than was planned, an unprecedented case. Development of this project is planned as the second stage of the new Far Eastern cluster development, which will be started by the above-mentioned Sakhalin-1–Khabarovsk-

* Bovanenkovo is the largest gas field on Yamal, with reserves estimated at almost 5 trillion cubic meters of gas, while the volume of extraction is planned at the level of 115 bln cm a year, and in the long-term perspective – 140 billion cubic meters a year.

Vladivostok gas pipeline, 1,300 km long with throughput capacity up to 7.5 billion cubic meters a year. In 2009 Gazprom allotted 50 billion rubles for this gas pipeline construction, which is two times more than had been planned for the year earlier.⁵⁴

One shouldn't think, however, that "Gazprom" has itself given up its traditional habit of declining or postponing the realization of projects (especially "detested" ones). The acceleration of the Kirinski block development was necessary due to the persistence of the prime minister, and because for many years already Gazprom (even with Ministry of Energy's mediation) was unable to agree on a so-called "gas component" with the operator of the Sakhalin-1 project Exxon Neftegas, or with another participant in the project, Rosneft.* Besides oil, Exxon also extracts associated gas, part of which (1-1.5 billion cubic meters per year) is delivered to consumers in Khabarovsk krai, while the rest is injected back into the formation. The "gas component" is understood as the development, according to the project's plan, of the Chaivo field with a project level of extraction of 8 billion cubic meters per year. As the project is carried out within the framework of a production-sharing scheme, and the gas share prescribed for Exxon and Rosneft is their property, they want to realize it as they like, in particular, to export it to China. But Gazprom has reminded them about its monopolistic export rights and offered to buy this gas at low domestic prices from them. Shell proposes to process this gas within the Sakhalin-2 framework, having completed the construction of a third line and having increased the capacity of the existing enterprise by 50%. Lately, Exxon has not rejected this variant, but Gazprom is insisting. As a result the government demanded for a third time to accelerate putting into operation the Kirinskii block of the Sakhalin-3 project. Gazprom, which formerly declared that it intended to develop this project itself, had to reconsider this intention twice. The first time was in the autumn of 2010, following the second time the government instructed the work to be accelerated, then it was decided to get the Norwegian-American company FMC Kongsberg Subsea involved in the installation and erection of an offshore underwater extraction complex. This time, after the tragedy in Fukushima, Japan, it was decided to renew negotiations with the Sakhalin-2 participants (Shell,

* The consortium of the Sakhalin-1 project consists of Exxon (30%), Rosneft (20%), ONGC (20% which were sold to it once by Rosneft) and the Japanese group Sodeco (30%).

Mitsui and Mitsubishi) as well as with India's ONGC.⁵⁵

In general, however, there is an impression that Gazprom's leadership hopes to overcome APEC 2012, which was such an unpleasant event for them, with minimal cost to its corporate interests. This is confirmed by Gazprom's attitude and actions on the completion of the formation of the third link of the above-mentioned Far Eastern cluster connecting the Chayandin deposit (Yakutia) to Khabarovsk in 2014: the Vladivostok gas pipeline (a major part of its 3,000-kilometer route should pass in one pack parallel to the constructed ESPO main oil pipeline, which will make construction considerably cheaper). No less important is the fact that the general project of the cluster also envisages construction of a whole number of modern enterprises for gas processing, construction of a new LNG line*, gas-processing and oil-refining plants, etc.⁵⁶ There is, however, only one thing in this idyllic picture that raises doubt: how seriously can one rely on the words and promises of Gazprom's leadership? Its reputation has already been blemished, at least by recent steps regarding Chayanda. This field was included by the government on a list of strategic deposits and was put up for auction. But soon it became clear that Chayanda was received by Gazprom without any tender. Appropriate instruction was given to profile agencies by the then-candidate for the presidency, Vice-Premier Dmitry Medvedev. Then Gazprom confirmed at a high level to the Yakutia leadership that it was ready to start gas extraction in Chayanda in 2013. Reassured local subsoil users even created a new company, Suntarneftegas, and began to buy licenses for areas adjoining the future route of the Chayanda–Khabarovsk pipeline. However, "Gazprom, having obtained the license, began to specify the terms of putting into operation the Chayanda project and the main pipe, shifting them from 2013 to 2016."⁵⁷ Today, however, having received another insistent order from the prime minister, Gazprom's leadership, in the person of one of Miller's most conservative deputies, Alexandr Ananenko, in June 2011 began to speak again about the possibility of attracting foreign partners to the development of the Chayandinskii and Koviktinskii fields, linking it to their participation in gas and chemical projects.⁵⁸ But there are no guarantees

* At the end of May 2011, Reuters reported that an agreement had been reached between Gazprom and Japan's Mitsui and Mitsubishi on the construction of an LNG plant in Vladivostok with a capacity of 10 million tons, at an approximate cost of 7 billion euros. It is to go into operation in 2017 and its main consumers are Japan and South Korea. See: Kommersant, May 27, 2011.

that after 2012 Gazprom will not return to its old tactics of procrastination and even renunciation of these promises. The thing is, quite recently all along the wide front of oil and gas projects in the course of 2009-2010, intensive negotiations were on with Shell, Exxon, and a number of Japanese corporations (especially participants in the already working Sakhalin-2 project). During his visit to Japan, Putin proposed in his meeting with Japanese businesses, in particular to Mitsui and Mitsubishi, that they join the Sakhalin-3 project, consider the possibility of participation in the Chayanda and Shtokman projects, in the development of the Yamal deposits, and so on.⁵⁹ Miller also participated in that trip, and at his press conference repeated all the premier's proposals, but after returning to Russia, no real actions followed.

CONCLUSIONS

Finally, I would like to briefly formulate the main conclusions made from the above:

1. The Russian Arctic zone is not only the key base for development of the oil and gas industry, but also a "weak link" in which important shifts in the very model of this sector have been building up in the last three to four years.
2. The most significant shifts are: a) breaking through some state oil and gas monopolies in the home market and the appearance of real competition and b) a real, and not just declared, turn of the country's top leadership and Russian business to the Asia Pacific, to the establishment of equal and mutually beneficial energy cooperation with the region's countries. Here we can clearly trace the outlines of a modernization strategy by the country's top leaders, and their reaction to the global crisis, accompanied by oil and gas shocks, against the background of the inertial and unprofessional reaction of the bureaucratic apparatus (including some state corporations), their urge to give the Russian oil and gas industry new impulses and to fit it into a wider international context.
3. It became obvious that fast and effective development of Russia's fuel and energy complex is simply impossible without the closest international cooperation both with state consumers of Russian

hydrocarbons, advanced oil and gas corporations and service world companies. Any pretension to originality or independent development of Arctic resources leads only to lengthy procrastination and a rise in the cost of large energy projects (this is clearly proved by Gazprom's 20-year history, during which its monopolism was the main factor hampering development of the oil and gas sector).

4. At the same time, the process of renewal of Russia's oil and gas industry will take several years, as the scale of the tasks it faces is enormous, while the obstacles necessary to overcome are too rooted in the general economic structure of Russian society (the principal ones are double-dyed bureaucracy, pervasive corruption and the method of "hand management" still inevitable due to management's low level of professionalism).

Notes

1. The U.S. Energy Information Agency states that the Arctic could hold about 22 percent of the world's undiscovered conventional oil and natural gas resources, and about 30 percent of the world's undiscovered natural gas resources, about 13 percent of the world's undiscovered oil resources, and about 20 percent of the world's NGL resources. Source: <http://www.eia.gov/oiaf/analysispaper/arctic/>
2. *Oil and Gas Journal*, May 2, 2011, p. 48.
3. Note: During editing of this paper subsequent to the 2011 NPAC Conference, Shtokman gas production was cancelled in late August of 2012 because of soaring costs, falling European demand and cheap shale gas in America.
4. *Neftegazovaya Vertikal*, No. 20, 2010, pp. 8-9.
5. *Vremya Novostei*, February 8, 2010; *Kommersant*, February 8, 2010.
6. *Kommersant*, February 18, 2011 and June 17, 2010.
7. *Upstream*, 28 May 2010; *Vremya Novostei*, November 26, 2010.
8. *Upstream*, 11 February 2011, p. 10.
9. *Upstream*, 4 February 2011, p. 20; 11 February 2011, p. 10; 22 April 2011, p. 20.
10. *Vedomosti*, June 3, 2011.
11. *Vedomosti*, March 11, 2011; *Kommersant*, February 18, 2011; *Moskovskie Novosti*, June 23, 2011.
12. I dwell on the latter in my chapter "Global Finance and Civil Society Deficits in Russia" in the book *Civil Society and Global Finance*, UN University, Warwick

- University (Ed. by J.A. Scholte and Albrecht Schnabel), Routledge, 2002, pp. 79-93.
13. N. Simonia, "Russian Energy Policy in East Siberia and the Far East." In *The Energy Dimension in Russian Global Strategy*, The J.A. Baker III Institute for Public Policy of Rice University, October 2004, p. 30.
 14. *Neft i Kapital*, No.7-8, July-August 2010, p.30; *Kommersant*, December 7, 2009.
 15. *Vedomosti*, May 23, 2011.
 16. *Kommersant*, May 23, 2011.
 17. *Vremya Novostei*, February 8, 2009; *Kommersant*, February 8, 2010.
 18. *Vremya Novostei*, December 26, 2009; *Kommersant*, March 15, 2010.
 19. *Kommersant*, December 16, 2009; *Vremya Novostei*, December 28, 2009.
 20. Perhaps it's not by chance that by the beginning of 2008 he obtained control over the Stroitransgas service company (a leader in the gas service business). Timchenko's Volga Resources owned about 80% of ordinary ("voting") shares, while Gazprombank had only 19.99%, and in the course of 2009 Timchenko changed half of the company personnel for his people (*Vremya Novostei*, June 22, 2009; *Vedomosti*, March 26, 2010).
 21. *Kommersant and Vedomosti*, December 7, 2009.
 22. *Moskovskie Novosti*, June 6, 2011.
 23. *Kommersant*, November 27, 2009 and February 3, 2010; *Vedomosti*, December 25, 2009; *Vremya Novostei*, October 29, and December 25, 2009.
 24. *Vedomosti*, December 21, 2010 and March 9, 2011.
 25. *Commersant*, May 3, 2011.
 26. *Vremya Novostei*, November 1 and 8, 2010; *Kommersant*, December 1, 2010; *Vedomosti*, November 8 and December 30, 2010.
 27. *Vedomosti*, November 9, December 20, 2010; *Kommersant*, February 24, 2011.
 28. *Neft I Kapital*, No.12, December, 2010, pp. 54-56, No.12, January-February, 2011, p.7; *Vedomosti*, February 9 and 15, March 3, April 29, May 3 and 4, June 6 and 7, 2011; *Kommersant*, January 12, March 3, 2011.
 29. *Kommersant*, February 5, 2010; *Vremya Novostei*, March 15, 2010.
 30. *Upstream*, March 11, 2011; March 18, 2011, pp. 42-43; April 1 and 8, 2011; *Kommersant*, March 3 and 25, 2011; April 6, 2011; *Vedomosti*, March 3, 2011.
 31. *Moskovskie Novosti*, June 6, 2011; *Vedomosti*, June 28, 2011.
 32. *Upstream*, March 25, 2011, p. 21.
 33. *Vedomosti*, May 30, 2011.

34. *Vremya Novostei*, March 15 and 25, 2010.
35. *Vremya Novostei* and *Kommersant*, April 1, 2010.
36. *Vremya Novostei*, March 25, 2010.
37. *Kommersant*, November 27, 2009, June 21, 2010, June 28, 2010; *Vremya Novostei*, October 29, 2009; *Vedomosti*, October 29, 2009, July 21, 2010, February 18, 2011.
38. *Neft Rossii*, No.1, 2011, pp. 84-87.
39. *Petroleum Economist*, October 2010, p. 14.
40. *Vedomosti* newspaper site, #ixzz1EfN2YsC7.
41. www.barentsofserver.com (2011-02-02); http://www.novatek.ru/rus/presscentre/releases/2011_680.html
42. *Neft I Kapital*, No.7-8, July-August, 2010, pp. 30-32.
43. In this connection it would be interesting to recall a critical saying of Sergei Donskoy, the deputy head of the Ministry on Natural Resources, at a meeting of the Naval Committee of Russian Federation. He said that while Gazprom had been dragging its feet and repeatedly postponed the time of launching of the Shtokman field, he lost the chance to consolidate a position on the American gas market. Well-known is the opinion voiced by his ministry that if shelf development goes on using only the strength of Gazprom and Rosneft permitted to do it, it will take no less than 165 years, according to the most optimistic scenario. (*Vremya Novostei*, March 31, 2010).
44. *Moscow Times*, June 21, 2010. We can suppose with confidence that in tête-à-tête conversation with Putin, De Margery could not absolutely avoid talking about the Shtokman project and Gazprom's "successes" in this sphere, and this "insider" information could only strengthen Putin in correctness of orientation at Novatek's Yamal-LNG project.
45. *Kommersant*, October 12, 2010; *Vremya Novostei*, October 12, 2010; *Interfax*, October 11, 2010 (Government of the Russian Federation).
46. *Upstream*, March 18, 2011, p. 42
47. *Vremya Novostei*, October 12 and 19, 2010.
48. *Kommersant*, April 6, 2011.
49. *Vremya Novostei*, December 8, 2010; *Vedomosti*, December 8, 2010 and April 18, 2011; *Kommersant*, April 18, 2011.
50. *Vedomosti*, May 4, 2011.
51. *Upstream*, February 25 and April 22, 2011, pp. 20 and 48; *Neft Rossii*, No.3, 2011, p.34; No. 5, 2011, pp. 74-75.
52. *Neft Rossii*, No. 2, 2010, pp. 60-64.

53. *Kommersant*, June 17, 2009; *Vremya Novostei*, June 19, 2009.
54. *Oil and Gas Journal*, October 26, 2009, pp. 27-28; *Vremya Novostei*, June 18, 2009.
55. *Vremya Novostei*, October 20, 2010; *Vedomosti*, June 28, 2010, March 31 and April 1, 2011; *Kommersant*, March 17 and April 6, 2011; *Moskovskie Novosti*, April 11, 2011.
56. *Vremya Novostei*, May 3, 2009.
57. *Neft i Kapital*, No. 7, July 2008, pp. 30-31.
58. *Vedomosti*, June 22, 2011.
59. *Vedomosti*, May 13, 2009.

Commentary: Chinese Perspective

ZhongXiang Zhang

GENERAL COMMENTS

Simoniya's paper emphasizes the internal dynamics within the Russian oil and gas sector and illustrates the difficulties Russia has faced and continues to face in the course of the restructuring of this sector under the established regime in which monopolistic corporations have an overwhelming domination, and how the obstacles to such a restructuring are rooted in the general economic structure of Russian society. His paper describes in great detail Prime Minister Vladimir Putin's efforts to modernize the oil and gas sector in Russia. This great leadership at the top level of the Russian government, combined with a venture entrepreneur of lasting enthusiasm and thorough knowledge at the top level of corporation management, leads to an encouraging sign of such a modernization, although a comprehensive change in the energy sector takes years, if not decades. The issues addressed in the paper are important. The author is to be congratulated for a clear explanation of these issues.

We, the planning committee for this conference, have defined the following terms of references (ToRs) for Simoniya's paper, which are given in the conference program dated May 13, 2011:

ToRs for Paper 4: Strategic Importance of Arctic Oil and Gas to Energy Security in the North Pacific

- (i) Time profile of Arctic oil and gas exploration and their on-shore (inland) and off-shore availability*
- (ii) Impact of the new Arctic oil and gas supplies on the global market (supply/demand balance and prices) and the North Pacific market and energy security*
- (iii) International cooperation between Russia and the remaining North Pacific countries in accelerating Arctic oil and gas development*

No matter how important these issues that his current paper has addressed are, I have to say that they are not the core issues that this paper is asked to address, according to our terms of references. The issues addressed in the current paper could serve as an important supplement, but they are not the key issues.

Given that the paper by Simoniya does not follow our terms of references, my comments are not on his paper. Instead, given that this session deals with energy security issues, my comments will mainly touch on China's concerns about and efforts towards energy security, in particular regarding the Malacca dilemma, and put Arctic oil and gas into that context. I agree with the author's conclusion regarding the real turn

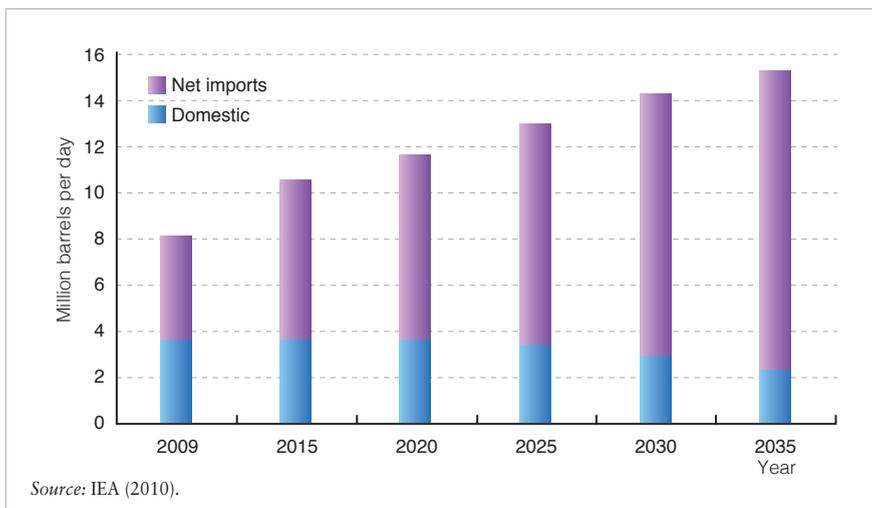


Figure C.6 China's future oil supply: domestic versus imported (mb/d)

of Russia's top leader and the Russian oil and gas business to the Asia Pacific. As discussed in diversifying China's sources of oil supply, while such a turn is welcome by major Asian energy-consuming countries such as China, India and Japan, it is probably even more beneficial for Russia itself, because such a shift not only provides the Russian oil and gas companies with much-needed credit and investment, but also helps Russia to secure customers and reduce its dependence on Western Europe. On the downside, it provides some leeway for Russia to play politics to take advantage of competing rivals, such as China and Japan, and raises the issue of Russia's reliability as an energy supplier, an issue open to question (Zhao, 2007:41).

CHINA'S GROWING THIRST FOR OIL

China's appetite for oil is soaring. Its oil demand grew from 2.3 million barrels per day (mb/d) in 1990 to 4.4 mb/d in 2000 (IEA, 2000). By 2009, China's demand had jumped to 8.1 mb/d (IEA, 2010:105). The IEA estimates that by 2035, China's oil demand will reach 15.3 mb/d, overtaking the United States (14.9 mb/d) as the largest oil consumer in the world (IEA, 2010:105).

China was traditionally self-sufficient in oil, but since 1993 it has been a net oil importer. China's economic boom and its stagnating domestic production of oil have produced a growing hunger for foreign oil. As of 2003, China emerged second only behind the U.S. in terms of oil imports. In 2009, China imported 4.3 mb/d, or 51.3% of its demand (IEA, 2010). This was the first time China imported more than half of its oil consumption. According to China's National Development and Reform Commission, by the end of June 2011, China's oil dependence rate further increased to 54.8%. While this rate is still lower than 61% for the U.S., China's dependence on imported oil has been growing rapidly in recent years (Zhang and Zhang, 2011).¹ During the first five months of 2011, China's oil imports cost the country USD 78.9 billion, which accounts for 45.1% of its total expenditures for imported goods and services (Zhu and Zhang, 2011).

China is projected to maintain production close to the current level of 3.8 mb/d to 2015, followed by a steady decline as resource depletion sets in (IEA, 2010:130). As a result, its oil imports will continue to soar in the decades ahead (See Figure C.6). The IEA estimates that by 2035, China is

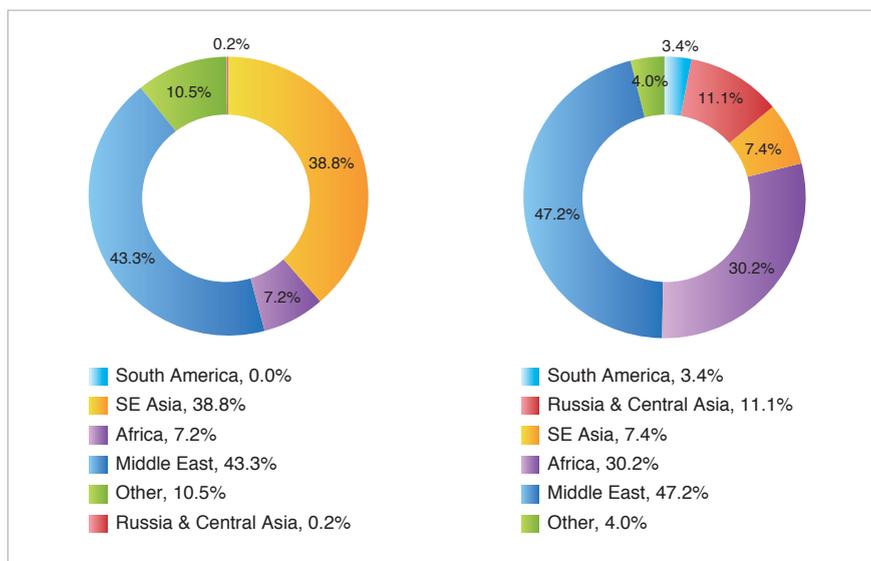


Figure C.7 China's crude oil imports by region in 1995 (left) and 2005 (right)
(Total imports of oil: 17.1 million tons in 1995 and 126.8 million tons in 2005)

expected to import nearly 12.8 mb/d (IEA, 2010:135), more than the U.S. imports today, in order to meet its expected oil demand of 15.3 mb/d. This puts China's oil dependence rate at 84.3% in 2035 (IEA, 2010). China will thus be even more exposed to the risk of international supply disruptions than it is today. Energy security has risen to the height of importance in its foreign policy, and is becoming what has been called a "transforming" factor in relations between China and the Middle East, Russia, and energy-rich Central Asian, African and Latin American countries (Yi, 2005).

CHINA'S CONCERNS ABOUT THE STRAIT OF MALACCA

As shown in Figure C.7, in 1995, China relied mainly on the Middle East and Southeast Asia (mainly Indonesia, which alone accounted for nearly one-third of China's total imports) for 82% of its crude oil imports. China has relied on the Middle East for the majority of its oil imports. Thus, it will continue to consolidate its base there. In recent years, China has also turned its eyes to the emerging oil and gas fields in Africa. Top Chinese

leaders frequently paid the visits to oil-producing countries in the region. This high-profile, goodwill-based energy diplomacy has helped China to make remarkable inroads in striking energy deals with oil-rich African countries in the Gulf of Guinea, Central African Republic, Chad, Congo, Libya, Niger, and Sudan. By 2005, China had significantly diversified its import mix. As shown in Figure C.7, Africa accounted for 30% of China's oil imports, while Russia supplied 10% of total imports (Downs, 2006:31).

However, China remained just as reliant on the Middle East in 2005 as it had been 10 years ago, with 47% of its imports coming from the Persian Gulf. In addition, because China was now heavily reliant on Africa as well as the Middle East, it now depends more on a single chokepoint - the Strait of Malacca - than it had before, with nearly 77% of its oil imports flowing through the Strait. This situation still remains: China still imported 77% of its crude from the Middle East and Africa as of 2010 (Kennedy, 2011).

Foreign trade has become one of the pillars underpinning China's phenomenal economic growth over the past three decades, and oil is intimately related to it. Given that most crude oil imports from the Middle East and Africa have to pass through the Strait of Malacca, the strait is of the strategic and economic importance to China's economic and energy security. As a chokepoint, this strait directly affects China's sea lane of communications (SLOCs), but China has little sway over it. Therefore, China has every reason to be concerned about the safe and smooth passage of its shipments. Beijing feels susceptible to this strategic weakness, considering that any unexpected event could disrupt its trade flows and particularly oil imports, which could further deal a blow to China's economic development, social stability and military operations (Chen, 2010; Zhao, 2007).

Over the past few years top Chinese leaders have come to view the Strait of Malacca as a strategic vulnerability (Blumenthal, 2008; Holmes, 2007). In November 2003, the Chinese President Hu Jintao declared that "certain major powers" were bent on controlling the strait, and called for the adoption of new strategies to mitigate the perceived vulnerability. Thereafter, the Chinese press devoted considerable attention to the country's "Malacca dilemma" (Lanteigne, 2008; Storey, 2006). *China Youth Daily*, one leading Chinese newspaper, declared: "It is no exaggeration to say that whoever controls the Strait of Malacca will also have a stranglehold on the energy route of China" (Shi, 2004).

CHINA'S RESPONSES TO COPE WITH THE MALACCA DILEMMA

Given the strategic importance of the Strait of Malacca and China's little sway over the waterway, China has taken great efforts to cope with the perceived "Malacca dilemma" and to enhance its energy security.

China's Demand-Side Efforts to Control the Growth of Oil Demand

On the demand side, China has taken considerable efforts to control the growth of its demand for energy and oil, and thus its demand for oil imports. China has incorporated for the first time in its five-year economic plan an input indicator as a constraint – requiring that energy use per unit of GDP be cut by 20% during the 11th five-year period running from 2006 to 2010. This is widely considered an important step towards building a "harmonious society" through "scientific development." Just prior to the Copenhagen climate summit, China further pledged to cut its carbon intensity by 40-45% by 2020 relative to its 2005 levels in order to help to reach an international climate change agreement at Copenhagen or beyond (see Zhang, 2010a and 2011a,b for further discussion). Meeting these energy and carbon intensity targets will not only help to limit the growth of China's carbon emissions, but will also reduce China's growing hunger for foreign oil, leave more oil on the market and thus help to stabilize oil prices.

China's Supply-Side Policies to Address Its Growing Dependence on Imported Oil

On the supply side, China has taken a variety of policies to address its growing dependence on imported oil. The country has made considerable efforts to maintain domestic production close to the current level. In the meantime, China has been making significant efforts to support the expansion of its own national oil companies (NOCs) (the so-called going-out policies for NOCs), to diversify both the sources and routes of its oil supply, to develop its own strategic petroleum reserves, and to strengthen its naval capabilities to protect supply lines (Chen, 2010; Kennedy, 2011; Zhang, 2010b).

Clearly, China resorts to these unilateral and bilateral measures to enhance its energy security and cope with the Malacca dilemma. As a result

of the going-out policy, these NOCs now have equity production in 20 countries. By the first quarter of 2010, these NOCs' overseas equity shares had reached 1.36 mb/d, nearly one-third of China's net imports in 2009 (Jiang and Sinton, 2011:17, 39–40). While China continues to consolidate its base in the Middle East, it has been keen to invest in Central Asian and Russian oil and natural gas field development projects and in the construction of pipelines in order to bring oil and natural gas from these regions. In recent years, China has also turned its eyes to the emerging oil and gas fields in Africa. Its search for oil has recently taken it to Central and South America, America's backyard, which the U.S. perceives as its turf and within its traditional sphere of influence. In the midst of the global financial crisis, China further diversified its energy import mix via loan-for-oil deals. Chinese state-owned banks made loans worth USD 77 billion to nine different oil and gas-producing countries in 2009 and 2010, all of which are located outside the Middle East (Jiang and Sinton, 2011:41).

A noticeable deal is with Russia. China and Russia have been discussing a cross-border pipeline for crude oil since the early 1990s, but weren't able to finalize a deal. Leveraging its relative financial strength at a time when most other big economies are in recession, China eventually struck this largest, long-awaited loan-for-oil deal with Russia on February 17, 2009. Under this long-term deal, China lends USD 25 billion to Rosneft, Russia's biggest oil producer, and Transneft, its oil pipeline operator. In exchange, Russia will provide China with an additional 15 million tons of crude oil a year between 2011 and 2030, which represents about 300,000 barrels a day for 20 years, or nearly 7% of China's current volume of oil imports, through a new pipeline, which began making commercial deliveries on January 1, 2011. The deal not only provides the two Russian oil companies with much-needed credit, but also helps Russia secure customers and reduce its dependence on Western Europe.

Recognizing its limited potential to further diversify its oil imports away from the Middle East and Africa, China has sought to diversify the routes that its oil shipments take towards China from the Middle East and Africa (Blumenthal, 2008; Holmes, 2007; Kennedy, 2011). China is working with Myanmar to construct parallel oil and gas pipelines that would connect the Chinese province of Yunnan with the Indian Ocean. The 440,000 barrels per day capacity of the oil pipeline would allow a portion of China's crude shipments to bypass the Strait of Malacca on their way to China, while also saving 1,200 km of travel distance (Jiang and Sinton,

2011:34). China also appears to be involved in developing rail and road infrastructure that will connect the Arabian Sea port of Gwadar in Pakistan with western China and aims to create a new land route for China's oil imports from the Middle East, and for exports of Chinese consumer goods to Central and South Asia. Yet as far as transporting oil is concerned, it would be much more costly to transport oil in this manner, and thus this connection will be even more constrained than the pipeline through Myanmar (Erickson, 2010).

After several years of debate, on December 18, 2007, the National Development and Reform Commission announced that the China National Petroleum Reserve Center was established to strengthen the building of its strategic oil reserves and a sound management system of oil reserves. China decided to take 15 years, in three phases, to complete the construction of its petroleum reserve bases since 2007. Four sites were chosen for the first phase: Zhoushan and Zhenhai in Zhejiang Province, Dalian in Liaoning Province and Huangdao in Shandong Province. Together they provide a total storage capacity of 14 million tons (or 100 million barrels). If filled, this is equivalent to about 12 days of China's oil consumption in 2009. The construction of the first phase was completed by the end of 2008, and was completely filled in 2009 at an average price of USD 58 per barrel (Wang and Wu, 2011). The second phase, with eight sites, is under construction, and will add another storage capacity of 23 million tons. The third phase is in planning, and is expected to be completed by 2020. By then China will have a total storage capacity of 85 million tons. If filled, that would be equivalent to about 78 days of China's 2020 oil imports (8 mb/d) projected by the IEA (2020).

STRATEGIC IMPORTANCE OF ARCTIC OIL AND GAS TO ENERGY SECURITY

Given that China is already a large oil consumer and its oil use is set to rise rapidly, it needs to continue to invest in adding new capacity to its world oil supplies via loan-for-oil deals or acquisitions, as it has aggressively pursued during the current financial crisis (Zhang, 2010b). This should be seen as beneficial for other global consumers because Chinese investments in oil fields help to stabilize oil prices by pumping more oil out of the fields and enlarging the overall availability of oil on the world market.

Based on a comprehensive assessment of the Arctic's energy resources completed by the U.S. Geological Survey (2008), the Arctic is estimated to have 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids. Given the huge Arctic oil and gas reserves, by the same token, China would see their exploration as having great potential for increasing the overall worldwide supply of oil and gas in the long term. Chinese companies, in particular those state-owned oil majors, clearly keep their eyes on the opportunity of investment in such an area. They see that such an involvement helps to achieve their ambition to grow and build global businesses, just like the NOCs have expanded their business overseas and have achieved a positive development for themselves with the support of the government-sponsored going-out policies. Chinese companies could consider working with their Russian counterparts under the loan-for-oil (or loan-for-gas) model in exploring and developing oil and gas resources in the Russian Arctic zones.

While China has to some extent succeeded in diversifying its source of oil supply since the 1990s, the country will have limited potential to further diversify its oil imports away from the Middle East and Africa and will thus continue to rely on these main suppliers of oil in the foreseeable future. If China cannot do much to change the source of its supply, changing routes is then the way to go. In this regard, opening the Northern Sea Route (NSR) would help to alleviate China's concerns about an overwhelming dependence on the Strait of Malacca for the majority of its oil supply in the long term. As the NSR is slowly becoming a reality as an international trade route, shipping chokepoints, such as the Strait of Malacca, would no longer dictate global shipping patterns.

However, in the short term, China would be reluctant or at least cautious to get involved in Arctic issues. This is partly because China itself is not an Arctic country. Presumably and more importantly, China is concerned about potential implications of its involvement for the territorial disputes in the East and South China Sea. China has faced territorial disputes with a few Association of Southeast Asian Nations (ASEAN) countries in the East and South China Sea, where no clear picture of ownership exists. China has claimed its sovereignty and has long considered the territorial disputes as a bilateral issue. China disapproves of referring bilateral disputes to multilateral forums and is strongly opposed to the intervention of an outside power in the South China Sea dispute. However, U.S. Secretary of State Hillary Clinton announced publicly at the ASEAN

Ministerial Meeting in 2010 that the South China Sea dispute was related to U.S. national interests. The dispute has since been heating up. At a time when certain countries attempt to promote the internationalization of the South China Sea issue to put pressure on China, China getting involved in Arctic issues may be used by others as an excuse for that endeavor. China clearly does not want that to happen.

I would like to point out that this should not be considered as an exception. In fact, China has been generally reluctant to participate in multilateral engagement on water (Mochizuki and Zhang, 2011). This stems from at least two factors. First, water scarcity is a pressing issue for China. Highly uneven water availability, rising demand and declining water quality all pose increasing water stress, particularly in Northern China. China's per capita water availability of 2,200 m³/year is merely a quarter of the world's average (Liu et al., 2007), with Northern China supporting the water demands of as much as 45.2% of the country's population, despite possessing only 19.% of China's total water resources (Jiang, 2009). Water quality is also declining in many parts of the country. As such, the water issue is of increasing importance to China. Secondly, China's unique geography makes trans-boundary management of such a scarce resource particularly challenging. Currently, China shares 18 major international river basins with its neighboring countries, including Amur, Ganges-Brahmaputra-Meghna, Har Us Nur, Hsi/Bei Jiang, Indus, Irrawaddy, Mekong, Pu-Lun-To, Red/Song Hong, Salween, Sujfun, Tarim, Tumen and more than 40 tributaries (Wolf et al., 1999; Backer, 2007; Yan and Daming, 2009). In many cases, China is the upper-stream riparian state in these international river basins. The Chinese government fears, therefore, and quite reasonably so, that its handling of the Mekong River may expose it to similar demands by other downstream states, complicating already fragile water resource configurations (Backer, 2007). As such, Beijing has generally been reluctant to join multilateral discussion on this issue.

Notes

1. Using a different method of calculating oil dependence rate, China's Ministry of Industry and Information derives that by the end of May 2011, China's oil dependence rate reached 55.2%, even higher than 53.5% of the U.S., for the first time (Zhu and Zhang, 2011).

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Commentary: Japanese Perspective

Kenichi Matsui

ON THE CONCLUSIONS

I would like to start my comments with Professor Simoniya's paper and focus on his conclusions. Then, I will address several topics from his paper and make some brief comments on them.

In his conclusions 1 and 2, he says that the Russian Arctic zone is not only the key base for development of oil and gas industry but also a "weak link," and this weak link has been building up towards an important shift, namely a breakthrough by some state oil and gas monopolies and a real turn of the country's top leadership and Russian business community towards the Asia Pacific region.

This shift is welcome from the viewpoint of Japan since it resulted in a broader focus by Russian oil and gas industry to fit into a wider international context. This will contribute to a dramatic expansion and change to the future supply picture of oil and gas in the world.

Conclusion 3 emphasizes the importance of international cooperation. I agree. This point is specifically important for Russia considering its political situation. A fast and effective development of Russia's fuel and energy complex is beneficial to Japan, and Japan will continue to strengthen cooperation with Russia.

Conclusion 4 states that the process of restructuring of Russia's oil and gas industry will take time, suggesting it may take several years because the task is so enormous in order to overcome obstacles that are rooted in the general economic structure of Russian society. I can imagine how difficult this process is. I just wish it would go as smoothly as possible.

Thus the messages of Professor Simoniya's paper are clear and I share his views.

HUGE POTENTIAL OF RUSSIAN NATURAL GAS AND OIL

For the first topic, I want to focus on the huge potential of Russian oil and gas.

Professor Simoniya's paper clearly outlines the huge potential of natural gas and oil in East Siberia, Far East and the Arctic. As we know, part of this potential has already been materialized. For instance, oil exports from Russia after starting the operation of the East Siberian and Pacific Oil main pipeline (ESPO) has changed significantly the structure of oil supply in the Asia Pacific region.

In 2010, Japan's imports of Russian oil via Kozmino surpassed that of Kuwait, and Russia became the No. 4 exporter of oil to Japan and No.1 exporter, except for the Middle East. In the first half of 2011, the No.1 status of Japan as Russian crude oil importer through Kozmino was overtaken over by the United States, which is now 27% of Japan's crude oil imports. Japan shared 19% of Russian crude oil exported via Kozmino, followed by Korea with 13% and the Philippines with 11%. This trend will be more visible and seen throughout the world, and expectations for Russian oil will rise dramatically in the Asia Pacific region.

PUTIN'S EFFORTS TO MODERNIZE THE OIL AND GAS SECTOR

As the second topic, I pick up on Russian Prime Minister Vladimir Putin's modernization efforts. Professor Simoniya describes Putin's efforts to modernize the oil and gas sector in Russia in detail in the sections "The Shtokman Project's Roundabout Ways of Realization," "Novatek Saga: Gazprom's Monopoly is Undermined," and "Novatek Phenomenon."

I really enjoyed this part since it well illustrates the dynamism within the Russian energy circle, including the political leadership of the country. The success story of Novatek proved, I think, that a challenging project could be tackled only by a venture entrepreneur with top management

expertise, combined with enthusiasm and knowledge. Just to command “Develop a new project! But don’t waste money! Do it efficiently!” cannot achieve the goal of a challenging project.

I found Putin has done well with the modernization of the oil and gas sector in Russia, as he had to struggle with the established regime. However, as Professor Simoniya pointed out, the process of restructuring of Russia’s oil and gas industry will take some time since it will have to overcome obstacles that are deeply rooted in general economic structure of Russian society. I understand the difficulty Putin faces, as it leads me to reflect on the difficulty Japan faced after the big earthquake, tsunami and the Fukushima nuclear power plant accident on March 11 this year.

BIG CHALLENGES FOR JAPAN

Here, I would like to say few words about the big challenges Japan now faces. The misfortune, the Fukushima nuclear power plant accident, is a natural disaster, but unfortunately it has been worsened by human errors. The measures taken by Japan to assist people who suffered from the earthquake, tsunami and Fukushima plant accident have been too slow and inefficient due to the lack of capacity and leadership of the government.

The nuclear plant accident would not be such a grave accident if Tokyo Electric Power Co. and the government had developed and introduced safety measures that were recommended by the IAEA and the serious lessons learned from the Three Mile Island nuclear power plant accident.

After World War II, Japan achieved an economic miracle under democracy. But the earthquake, tsunami and nuclear power plant accident revealed that democracy in Japan is a “pseudo-democracy.” People claim just rights and forget duties. More than 60 years after the war, it became clear that the Japanese system does not work in the world of globalization.

In the general election in 2009, the Liberal Democratic Party, the long-time ruling party of Japan, lost and the Democratic Party, which appealed for change of this system, won. However, people were completely betrayed by this party’s lack of governing capacity. People are waiting for a real political leader with vision, capacity and courage to emerge and restructure the old systems.

Using the words of Professor Simoniya, the process of renewal in Japan will take time, since it will have to overcome obstacles that are rooted in

general economic and social structure of Japanese society.

We know that Putin's task for modernizing the oil and gas sector is a very challenging one, but the restructuring the bureaucrat system and state-business relationship that have long dominated Japan since World War II is not a less difficult one. Russia's situation looks even better than Japan since Russia has Putin, but Japan does not and has yet to find such a focused leadership role.

Here, I found that the difficulties in Russia and in Japan could be well visualized by looking at the aspect of state-private partnership in the two countries. This concept was introduced by Professor Simoniya as an important framework for modernization of the oil and gas sector in Russia.

STATE-PRIVATE PARTNERSHIP

According to Professor Simoniya, the role of the state in Russia is in the formulation of ideas and large national projects, and in partial investment, especially in various infrastructure spheres, while the role of business is that of operational initiatives, realization of information technologies and as the main investor.

In Japan, state-private partnership has also been very important for economic development after World War II. Here, the role of the state includes the formulation of ideas and large national projects and the partial investment like Russia, but one more role is added in Japan, namely to set up a business environment that makes it possible for companies in several industrial sectors to develop together with limited competition among them, through such measures as administrative guidance.

The role of the business sector also includes operational initiatives, realization of technologies and the role of main investor, as in Russia. And it additionally accepts ex-officials as company staff, returning the provision of a comfortable business environment by the government. This is called the "industrial convoy system" in Japan.

This system exists not only in the industrial sector but also in such sectors as mass communication (e.g., television and newspapers) and in the academic sector. Restructuring this bureaucrat-private system is one of the key elements for the renewal of Japan.

APEC SUMMIT IN VLADIVOSTOK IN 2012

For the next topic from the Professor Simoniya's paper, I pick up on the 2012 APEC Summit in Vladivostok.

Simoniya compares holding the APEC summit in Vladivostok to the construction of the Trans-Siberian railway before the October Revolution with the initiative of the outstanding Russian figure S.Y. Vitte and the East Siberia-Pacific Ocean oil pipeline.

I am confident that the Vladivostok APEC Summit will convey a strong message that there is a new wave of thinking within Russia to bring a geographical balancing of the Russian oil and gas sector, not only to the APEC economies but to the world as a whole. This summit will be a very exciting, "icebreaking," and could be one of the most memorable events in the long history of APEC.

I have been involved in APEC's Energy Working Group from the beginning, and so far the presence of Russia in APEC has been inconspicuous. But the Vladivostok summit will change the Russian presence completely and has the potential to revitalize APEC. I think this summit also might initiate an enhancement of intercultural communication in the west and eastern part of Russia and between Russia and North East Asian countries. Japan welcomes the Vladivostok APEC summit and wishes it great success as a critically important summit.

FUKUSHIMA NUCLEAR POWER PLANT ACCIDENT AND OIL AND GAS SUPPLY FROM RUSSIA

Next, I'd like to say few words on the short- and mid-term procurement of natural gas and oil after the Fukushima plant accident in Japan.

After the accident at the Fukushima plant on March 11, 2011, it was necessary for short-term procurements of LNG to replenish the loss of nuclear power from the plant and to increase electrical power from thermal power plants. We thank Prime Minister Putin, who expressed his intention to support Japan by providing extra oil and LNG immediately after the March earthquake and took due actions.

Japan started LNG imports in 1969 with an annual volume of about one million tons from Alaska, mainly to cope with the severe SO_x emission standard. At that time, Japan was mocked by the oil and gas circles in the

Western world. They asked with contempt: Why do you buy high-priced gas, and why do you just burn the gas instead of premier uses like feedstock for chemicals? But LNG for electricity generation is booming in the West. Japan has steadily expanded the LNG trade since that time and is currently importing about 75 million tons per year. It is foreseen to increase by 10-15 million tons in the coming 10 to 20 years.

Japan started to import Russian gas in 2009 from the Sakhalin 2 project. Gas from Sakhalin 1, Sakhalin 3, Eastern Siberia and Arctic will be added in the future. Japan will continue to import gas from Australia, Qatar, Malaysia, Brunei, Indonesia, UAE, Oman and others. The physical availability of natural gas will not be a problem even if the demand for it expands significantly after the accident at the Fukushima plant.

However, I am concerned about the capacity of Japan to continue to import such large volumes of LNG, considering the falling international competitiveness of Japan's manufacturing industry due to uncertainties in the projections for electricity supply, possible high electricity tariffs, high corporate taxes, the high exchange rate of the yen and the unreliable, amateur government. It may cause very serious unemployment, social instability, and demonstrations that could lead to civil unrest or even riots. The possibility of coming under the control of the IMF is not to be excluded.

Given the situation, I think, Japan should pursue an energy mix less dependent on imported energy from a longer-term perspective and keep nuclear power plants while enhancing safety measures, including the construction of small modular reactors.

SUCCESS OF THE RUSSIAN LNG BUSINESS AND JAPAN

For my last comment, I will touch upon the success of the Russian LNG business from the perspective of Japan.

While the LNG demand in the northeast Asia is expected to grow, a number of conventional and unconventional LNG projects in Australia and Canada are being discussed, and some of them have already reached final investment decisions in recent years. The realization of an LNG project is never an easy task. It is key to find reliable long-term clients for the success of the LNG business. Japan has been a most reliable buyer and partner in

the long-term LNG business and will try to keep that status.

The most important factor for reaching a long-term contract is price setting. Natural gas exporters should not repeat the failure of the price setting policy of OPEC. As you know, the share of oil in the total primary energy supply in the world has been falling continuously, from 47% in 1974 when OPEC took over the power of controlling the world oil market, to 34% in 2010. During that period the share of all other primary energy has increased. This change was brought on not due to the constraints of oil resources but due to the mismanagement of the international oil market by OPEC, and was especially due to its wrong pricing policy. I will not touch on this point in detail here, but OPEC will not be able to change its way of management, specifically its wrong pricing policy, for various reasons. Accordingly, the status of oil as the world largest primary energy will be replaced by natural gas shortly, say in around three years. The age of oil will be over and the age of natural gas will come. If natural gas exporters wish to extend the age of natural gas, they should be prudent enough to avoid the failures of OPEC.

Anyway, I believe that the 21st century will be dominated by nuclear energy and photovoltaic technology, which are based on the theories of relativity and quantum mechanics, and they will replace energy and technology based on the theory of Newtonian physics. The duration of the golden age of natural gas depends on the supply policy, especially the price policy of natural gas exporters. What is a reasonable gas price? It depends primarily on the decision of the gas exporters, but one thing is clear: this decision should be based on purely commercial considerations and should not be mingled with a money game and political considerations. A decision favoring the latter factors will not be supported by the market, will degrade the value and shorten the golden age of natural gas.

Commentary: Korean Perspective

Nam-Yll Kim

COMMENTS ON PROFESSOR SIMONIYA'S PAPER

First of all, Professor Simoniya provides complicated episodes surrounding the progress of projects in Shtokman and Yamal. He brought up some causes for the delay in the Shtokman project by mentioning that global market changes were unfavorable to gas sellers (for example, the global crisis and demand reduction, and shale gas production in the United States), and also pointed out such issues as Gazprom's insufficient professionalism, which lacks technological proficiency, and Russian bureaucracy. Overall, I agree with what Prof. Simoniya has presented.

While it was briefly mentioned in the paper, we need to pay more attention to the world supply outlook. Originally, the Shtokman project was intended to be developed entirely as an LNG export scheme, principally aimed at the U.S. market, but new global gas market conditions due to U.S. shale gas development caused this concept to be changed. The project is now intended to develop the field in two phases. In the first phase, which is planned to come about in 2016, gas exports will go via pipeline to Europe, and then an LNG export scheme will follow by 2017.

According to a report by the Baker Institute (July 2011), the projected North American shale gas production has the obvious implications that U.S. natural gas imports from the Middle East will be virtually nil throughout the next 20 years. Also, the report expects the share of Russian gas in the European market will continue to decrease from 20% currently to less than 13% in 2040. Based on this analysis, it is questionable that the Shtokman and Yamal projects of Russia will progress as planned. It seems that this paper needs a more detailed consideration of how the change in the world's gas supply will influence Russian Arctic projects.

Secondly, I will touch on some issues to be noted regarding Russian resources projects, focusing on the Arctic project. Prime Minister Vladimir Putin announced recently that Russia will promote cooperation with overseas countries in resource development in the Arctic continental shelf. Nonetheless, if we take a look at the actual operation structure of the Shtokman project, participation from overseas companies is quite limited. With Gazprom as the operating entity, Total and Statoil possess 25%

and 24% of the share, respectively. When the first stage of the project is completed (in 25 years), Total and Statoil must sell their stakes to Gazprom. Gazprom possesses full gas sales rights. Given the uncertainty in the Russian project, we believe that major enterprises prefer participating as operators rather than as mere shareholders. As we are all aware, operators have the authority to make decisions that are more beneficial for them.

Offshore gas field development projects, including the ones in the Arctic, require huge financing and advanced technology. Gazprom tends to monopolize most of the development and operation rights in gas projects. Therefore, some other projects are frequently delayed due to limits in manpower and funds. Consequently, countries waiting to purchase gas from these gas fields can suffer disturbances due to Gazprom's inconsistent behavior.

To enable Northeast Asian countries to trust the Russian gas supply, I believe, Russian gas development projects must open up for foreign businesses or non-state-owned domestic companies in the long run, including project operating rights. If not, large foreign investment is quite unlikely to be attracted.

Thirdly, as Prof. Simoniya mentioned above, corruption and a strong bureaucracy are the biggest obstacles to attracting foreign investors to Russia. Thus, these factors make it difficult for foreign investors to promote energy projects in Russia and also at times ignore the economic aspects. It seems that the government's role should be limited to making laws and developing policy, as well as supervising the companies involved. From this perspective, the recent decision by President Dmitry Medvedev to release high-ranking government officials from the boards of public companies is meaningful.

REGARDING THE KOREAN PERSPECTIVE ON ARCTIC OCEAN RESOURCE DEVELOPMENT

First, about energy import source diversification, Korea imports 97% of the energy it uses domestically. We are especially highly dependent on oil and gas from the Middle East. As we seek to diversify the sources of energy imports, development of the Arctic Ocean is highly desirable.

Nonetheless, natural gas from the Russian Arctic may lose its position in Korea's gas options if the development is delayed for the several reasons

mentioned earlier. Korea needs to secure roughly 10 million tons of additional gas by 2014, because some long-term contracts will soon be terminated. If Korea reaches an agreement with Australia or other countries sooner or later, its involvement in Russian Arctic gas development will become difficult.

Moreover, when Korean gas experts (KOGAS, working-level government officials, the KEEI gas team) work on establishing the long-term basic gas plan, they do not seem to picture Russia as a potential gas provider in the near future, except for the Sakhalin II project, which is shipping LNG already. It seems that they seriously perceive high risk and uncertainty with Russian gas projects, as I mentioned earlier.

Second, KOGAS recently obtained a stake in a small gas field (the Umiak gas field) in the northern Canadian Arctic. This is Korea's first Arctic resources development project. From a Korean perspective, the Canadian Arctic area has two merits. In geographical terms, Canada is much closer to Korea than the Russian Arctic is. Moreover, negotiations and contracts with Canada are likely to be more transparent than with Russia. Also, we can benefit from focusing only on economic conditions in the contract process.

However, the Canadian Arctic development project seems to be faced with some changing circumstances recently. The recent announcement of Shell's sale of its entire stake in the Canadian Arctic brought about speculation that circumstances are leaning towards an LNG terminal on the west coast of Canada instead of the Mackenzie Delta pipeline. So far, the establishment of the Mackenzie Delta pipeline and the construction of an LNG plant in the Arctic have been pursued. For Korea, establishing pipelines and constructing an LNG terminal on the west coast of Canada is more favorable because it will reduce the transportation distance. Expansion of the North American market will bring huge benefits to Korea.

Thirdly, as mentioned in Prof. Simoniya's article, two consortiums were competing against each other for FPU contracts when the Shtokman project began. Two Korean companies, Samsung Heavy Industries and Daewoo Shipbuilding & Marine Engineering, were involved. Korea is widely recognized as having the world's best shipbuilding industry. We specialize in building high technology and high-value-added ships such as LNG ships, drill ships, FPSOs and so on. In particular, the LNG-FPSO is a special ship first developed by Samsung Heavy Industries in 2008. Winning a USD 3.036 billion order from Shell, Samsung Heavy Industries cooperated with

Technip to build the LNG-FPSO, which will be utilized at the Prelude gas field in Australia.

For your reference, I have heard from a KOGAS expert that the LNG-FPSO is difficult to use in the shallow Canadian Arctic waters. However, we hope Korea's superior shipbuilding technology will play a major role in Arctic development.

Fourthly, it is expected that resource development in the Arctic region can bring new progress in the Northeast Asian energy spot market. The ESPO oil pipeline's first-stage route (in 2009) and branch line to China were recently completed. Also, the price of ESPO Blend is listed in Platts. In addition, the amount of Russian crude oil imported through Kozmino Port has been increasing substantially. Currently in Korea, approximately 10% of total crude oil imports are from Russia.

Three countries in Northeast Asia, Korea, Japan, and China, are becoming the center for the world's oil consumption. OPEC and non-OPEC oil-producing countries are competing over the Northeast Asian oil market. Korean oil stockpiling facilities are leased to Saudi Arabia, UAE and Algeria from MENA and other non-OPEC countries such as Norway and Azerbaijan.

Furthermore, as mentioned above, the development of oil fields and construction of a pipeline in the Canadian Arctic or North Slope of Alaska can create an export port for oil and gas on the west coast of North America. We expect its establishment will increase the potential for a Northeast Asian oil hub.

Along these lines, there is a possibility that the Asian oil market will be divided into a Northeast Asian bloc and a Singapore bloc. Needless to say, we will continue to have high dependency on the Middle East. However, Korea, China and Japan will be able to relieve their dependency on the Middle East to some degree, and it will contribute to the improvement in energy security.

Commentary: North American Perspective

David Pumphrey

ENERGY SECURITY

Energy security plays a vital role in many different aspects of today's world: an adequate supply of energy is needed for military and defense purposes, limited energy resources place limitations on a nation's ability to conduct foreign policy, and economic disruptions due to the inherent volatility of energy prices affect the global economy by retarding recovery of developed economies and hindering growth of developing economies. Vulnerability to disruption of energy supplies as a result of acts of terrorism, accidents, or natural disasters places great stress on governments, and the national vulnerability to a cutoff of energy supplies for geopolitical purposes has the potential to define a nation's foreign policy. Finally, energy's role in contributing to climate change-related security issues has begun to influence international norms, setting new standards for conscientious behavior on the international stage.

The United States has addressed energy security concerns through broad policy responses aimed at assuring reliability of energy supplies at a reasonable cost, while at the same time taking into account environmental concerns. For the most part, energy security in the U.S. has been dominated by concerns about oil, with natural gas fears driven more by resource base and price concerns. The politically stated objective of U.S. energy security policy has in the past been "energy independence;" recent policies, however, have progressively become more and more realistic, with diversity of international cooperation playing a key role in reaching the U.S.'s energy security goals of trying to assure adequate investment in global production capacity (Figure C8) as well as to reshape demand by transforming the way in which we use energy.

Development of the energy resources of the Arctic have been seen by many as an important avenue for improving global energy security. While the energy resources of the Arctic appear to be quite large and include areas such as the Alaska North Slope that have been in production for a number of years, the financial, technical and environmental risks of operating in an Arctic environment create significant challenges to future production in the region. To make a significant contribution to global energy supplies in the

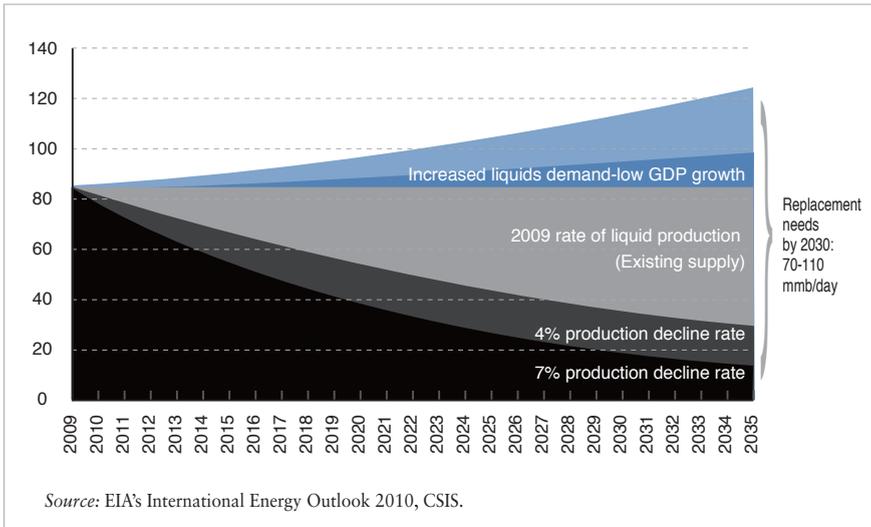


Figure C.8 Core energy security concern: need for investment in global production capacity

future, governments will need to put in place clear sets of rules regarding investment, operating requirements and other issues to help reduce the uncertainties facing companies who will undertake exploration and development activities in the Arctic. Even with expansion of investment in Arctic development, however, the principal driver for global energy security will be the Middle East, which holds the largest share of recoverable petroleum resources.

COMMENTS ON PROFESSOR SIMONIYA'S PAPER

Professor Simoniya's paper provides valuable insights into the evolution of the structure of the Russian oil and gas industry, the importance of the Arctic to Russia's energy future and the emergence of the Asia Pacific region as a core market for future oil and gas exports.

The evolution of a more competitive industry that Professor Simoniya describes can have important implications for future development of the Russian Arctic. Allowing private Russian companies to compete with Gazprom will facilitate innovation and likely lead to faster development. In particular, the possibility of more open relationships with international oil

companies that will come with a greater number of operating companies will facilitate access to the best technology and financial support. The process for making the industry more competitive, however, highlights a continuing concern about the Russian energy sector. As Professor Simoniya described the process, the role of senior government officials was extremely important. The importance of personal relationships between the leaders of the companies and the leaders of the government indicate that the new arrangements may not be institutionalized, but may be subject to changes in the personal objectives of leaders. This type of political uncertainty will be a concern to potential international partners and could limit the pace of development in the Arctic.

Professor Simoniya's paper describes the importance of Asia Pacific market for future growth in oil and gas exports from Russia. He describes the process of establishing pipeline connections to China and to the Pacific Ocean to allow better access for Eastern Siberian petroleum resources. He also mentions the decision to host the 2012 APEC Leaders meeting in Vladivostok as a signal of the importance of this market. Utilization of the Northern Sea Route (NSR) will potentially allow for LNG produced in Yamal and other areas of the Russian Arctic to better access these markets. In his description of the importance of these markets for future gas production in Russia, Professor Simoniya's analysis should incorporate the possibility that global natural gas markets will not support extensive and certainly not rapid development of Russian Arctic gas. Shale gas in the U.S. and possibly in China and other LNG projects will expand the availability of natural gas and constrain the size of market available to expensive Arctic projects.

ALASKAN ARCTIC OIL AND GAS AND U.S. ENERGY SECURITY

The expectation that the Arctic contains significant oil and gas resources has stimulated intense interest in the development of these resources as a way to address energy security concerns and provide commercial opportunities for the U.S. and other Arctic nations. The oil resources of the Alaska Arctic have for some time played a critical role in U.S. energy security. The Alaska North Slope has been a substantial source of oil since the 1970s; however, its current decline is problematic for U.S. energy

resources and further infrastructure development in the region.

For natural gas, the North Slope is estimated to hold proved reserves of 35 trillion cubic feet. These large natural gas reserves have remained stranded, however, due to economic factors and political debates that have tied up further investment in a transportation scheme. The cost of infrastructure and environmental preservation has required special treatment in policy regulation and legislation, making arctic development more than just an issue of working in severe climates. As Arctic development becomes more problematic, the energy resources located there become more central to the continued success of nations with a stake in Arctic development.

The first significant Arctic discovery was made in the Prudhoe Bay field in 1968, which became the largest oil field in the U.S. The transportation infrastructure from the Prudhoe Bay field to the rest of the U.S. was an immediate concern and major obstacle, leading to the establishment of a pipeline corridor.

Complications, such as opposition to pipeline construction on native lands and environmental objections, led to a long series of litigation and new legislation. The 1973 Arab oil embargo added the final impetus to legislation that would remove legal barriers to the Trans-Alaska pipeline project, and today further infrastructure development is being considered. A BP oil spill in March 2006 temporarily shut down the field while cleanup was addressed, leading to a stricter examination of Arctic oil spill response.

It is believed that Prudhoe Bay has a total capacity of 25 billion barrels of oil, with total recoverable oil at 13 billion. Since first beginning production in 1977, Prudhoe Bay has produced 11 million barrels, with 2 billion barrels of oil remaining recoverable. Ownership of fields in the Prudhoe Bay is split up between ExxonMobil (36% ownership), ConocoPhillips Alaska Inc. (36% ownership), BP Exploration (26%; operator), and the remaining 2% is owned by others. In addition, other smaller fields in the area have been discovered and brought into production since Prudhoe came on line and the Alaska pipeline was built.

In 1988, North Slope oil production peaked at nearly 2 million barrels per day. At that point in time North Slope oil represented 24% of U.S. domestic crude oil production and 11% of total U.S. petroleum consumption. Since the 1988 peak oil production has declined significantly; in 2010 North Slope produced just 0.67 million barrels per day, falling to 13% of domestic production and 3% of total consumption. Additional oil field development could be supported by excess capacity in the pipeline,

however, if the flow rate continues to decline the Alaska oil pipeline will start encounter a growing number of technical problems that would threaten its continued viability. The lower limit to flow rates for the pipeline is estimated to be in the 200-300 thousand barrel per day range.

The natural gas located in the Arctic has also been seen as a significant source of diversification of U.S. energy supplies. Similar to the oil resource, the key element for accessing this natural gas has been the development of transportation infrastructure. In 1977, Congress moved to expedite the construction of a gas pipeline with legislation, speeding up the selection and review process and putting in place special regulatory authorities. Price decontrol in the 1980s significantly altered the domestic supply and demand situation, resulting in prices that could no longer support the Alaska gas pipeline. Until the early 1990s, the pipeline project laid dormant, with the pre-build section in Canada providing a major avenue for increased Canadian exports. In 2001 the National Energy Plan called for the project to be further expedited, with natural gas prices pushing government incentive. Three years later, in 2004, Congress passed legislation to provide up to USD 18 billion in loan guarantees, and to once again consolidate the regulatory process. In 2007, the Alaskan government passed a bill to provide USD 500 million to a selected project. In the interim the estimated cost of the project has risen significantly, to the level of an estimated USD 40 billion total. The emergence of shale gas and other unconventional gas has again changed the U.S. gas market and driven prices to a level that will make completion of an Alaskan gas pipeline very challenging.

FUTURE POTENTIAL

The estimates of potentially recoverable quantities of oil and gas in the Alaskan Arctic are quite large. The 2008 USGS Circum-Arctic Resource Appraisal estimated that the Arctic Alaska region could contain about 30 billion barrels of recoverable, about one-third of the estimated total for the Arctic region. For natural gas the estimated mean value of recoverable gas is 221 Tcf about 13% of the total Arctic gas resources. The highest amounts of recoverable natural gas are believed to be in the Russian Arctic regions.

In the Alaskan Arctic there are four major areas to be explored for future oil and gas production. Perhaps the most controversial, the Arctic

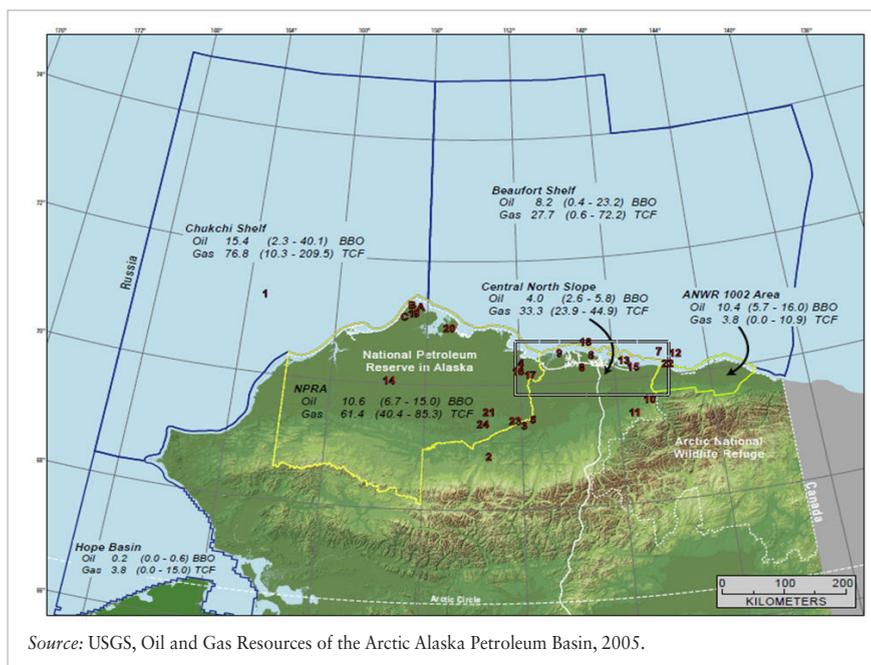


Figure C.9 Arctic Alaska petroleum basin

National Wildlife Refuge holds a mean value of 10.2 billion barrels of undiscovered, recoverable oil. Also, on shore the National Petroleum Reserve Area was in 2005 estimated to contain 10.6 billion barrels; however, after a review of drilling results the estimated recoverable reserves in this region have been downgraded to less than one billion barrels. Offshore, the Chukchi Sea, which has been estimated at 15.4 billion barrels, and the Beaufort Sea, estimated at 8.2 billion barrels, both remain the more likely areas to be developed.

KEY ISSUES IN DEVELOPMENT

A majority of the key issues that stand in the way of Arctic energy development in the United States center on environmental protection, in particular the Arctic National Wildlife Refuge (ANWR). Environmental values have clashed with development values for decades, in what has become a 30-year battle over whether to allow exploration and development in ANWR. The importance of ANWR for both sides of this debate is

apparent—the refuge holds high oil resource potential in a relatively small area that is easily connected to an oil pipeline; it also boasts pristine wilderness, relatively untouched by man and one of the last undeveloped regions in the U.S., with a large migratory caribou area. First established as a reserve in 1980, a provision for oil exploration in the coastal plain was left open in case of approval by Congress. In 1996, legislation was passed to allow drilling, but was later vetoed. The battle has since continued, with the Bush Administration including drilling in the refuge as part of its National Energy Plan and the Obama Administration later opposing it.

Development of the Naval Petroleum Reserve also faces some difficulty. The administration and Congress have agreed that oil exploration and development can proceed in this area but so far only small to medium-sized discoveries have been made, and only a few of these appear to be economical to connect to the Alaska oil pipeline.

There are currently 87 leases covering 2.8 million acres issues in the Beaufort and Chukchi seas; applications for the first exploratory drilling are under review. However, concerns about the environmental impact—air quality, noise pollution, and potential damage to marine mammals—have dominated the discussions surrounding lease applications. Further, the Gulf oil spill heightened concerns about the ability to control wells in the difficult arctic environment, prompting discussion on the adequacy of spill response measures, Coast Guard capabilities, and knowledge of the impact of oil in Arctic waters.

Some criticism of development in the Alaskan Arctic has centered on the offshore leasing process in the Beaufort and Chukchi seas. Currently the U.S. Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) oversees the lease process, granting leases based on specific requests from the oil and gas industry during a designated time period. A complicated review process and environmental opposition have dramatically slowed approvals; however, a new, coordinated review process may allow drilling to begin as soon as 2012. Proponents of stricter lease practices point to the fragility of the Arctic environment and the lack of adequate capability to deal with any accident or oil spills as a reason to delay development; opponents point to the need for energy resources, the acres of available land, and the economic incentive that exploration provides. Provisions such as design and implementation of a “comprehensive, long-term scientific research and monitoring plan,” conducting lease sales on a tract-by-tract basis as opposed to the current

area-wide lease sales, and improved stakeholder participation in outer continental shelf (OCS) decision making; broad range reforms and more specific, industry and environment conscious changes are being fought for at both a national and state level, all with the Alaskan-Arctic interests driving the arguments. On August 4, BOEMRE issued the first conditional approval of a permit to allow Shell oil to begin exploratory drilling during the 2012 drilling season. This is the first of multiple steps Shell has to go through to receive final permission. Environmental opposition will certainly continue.

Another of the major issues that will confront Alaskan Arctic energy development is the issue of transport infrastructure. Currently the TAPS oil pipeline is nearing the lower limit on throughput. The pace of offshore development may be too slow to keep the flow of oil up (due in part to the slow lease approval process, as well as the long lead times for development). The State of Alaska, in response, is offering development incentives in the hopes of providing volumes in the interim. If the pipeline were to go out of service the cost of a replacement would be very high – perhaps in the range of a USD 30+ billion project. For natural gas the cost of a newly constructed pipeline to the lower 48 states is estimated at USD 30-USD 40 billion. The delivered cost of this gas may not be able to compete with shale gas in the lower 48 states. Long thought to be unrealistic, and still far from materializing, access of gas to international markets may be critical given differential regional pricing. LNG exports from southern Alaska have occurred since the 1960s. The cost of building the infrastructure to pipe Alaskan gas to the south for export has not been thoroughly evaluated, nor has the possibility of establishing liquefaction facilities in Alaskan Arctic region. Additionally, the State of Alaska will have demand for natural gas that will need to be met.

U.S. ENERGY SECURITY AND ARCTIC ALASKA ENERGY DEVELOPMENT

With abundant natural resources, a fragile ecosystem, and the fundamental role it plays in regulating the Earth's climate, the Arctic has become a strategic interest for United States energy policy, national energy companies, and environmental activists. Decisions regarding oil and gas activity in the region require a cautionary approach, but also fair consideration must be

made for all interested parties. Government agencies must be willing to make accommodations based on the changing landscape, spill response, and responsible exploration; environmentalists must be willing to make accommodations based on the resources that are vital to a functioning, well-run nation.

Currently, the energy security debate is driven by higher oil prices; all sides of the argument can agree on creating a comprehensive energy policy with a mix of demand and supply options. For domestic resource development, particularly the Alaskan Arctic, one of the most fragile environments on Earth, the key question is the definition of responsible development. How energy security concerns and environmental concerns will balance remains uncertain; these questions and more will become larger and larger issues as the Alaskan Arctic becomes more important in coming years. Problems with infrastructure development, seasonal work, and funding will only last for so long, and then the very real importance of the Alaskan Arctic will be made clear.

The debate over how to approach U.S. energy security concerns that will ultimately drive U.S. actions in the Alaskan Arctic will hinge on the success of overall energy policies. As the U.S. works to increase efficiency and alternative fuels use, it has reduced projected growth in oil demand. The share of imported oil in the U.S. is expected to decline, from 57% in 2008 to 45% in 2035. The need to develop domestic resources is still a central piece on all sides of the debate, but a key difference comes in defining “responsible development.” Also, the development of unconventional natural gas resources elsewhere in the U.S. may lessen the perceived need to develop a natural gas transportation system in the Alaskan Arctic, as shale gas becomes an increasing focus for future energy needs. If the energy security landscape continues to transform, the “energy security argument” may no longer be an effective tool to drive Alaskan Arctic oil and gas development.