# The Pacific Pipeline at a Crossroads: Dream Project or Pipe Dream?

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#### Introduction

When Jun'ichi Koizumi visited Moscow as Prime Minister in January 2003, he publicly declared that Japan was greatly interested in the project being planned by Russia, involving the construction of a crude oil pipeline from Eastern Siberia to the Pacific coast (hereafter referred to as the ESPO [East Siberian - Pacific Ocean] pipeline). Russia and China had already begun negotiations concerning the idea of first constructing a pipeline from the oilfields of Eastern Siberia to East Asia, so the contest between Japan and China to secure Eastern Siberian resources became the focus of worldwide attention.

With the Russian economy continuing to boom, fanned by the recent high price of crude oil, Russian domestic capital is also finally being channeled back into eastern regions (Eastern Siberia and the Far Eastern region) in earnest. About five years ago, when the initial draft of the ESPO pipeline project was first announced, half of it was just pie-in-the-sky, but with the long-awaited commencement of construction work at the pipeline's starting point of Taishet, in Irkutsk Oblast, at the end of April 2006, it seems that, on the face of it, the project is now gradually being translated into reality.

However, a mountain of unresolved issues is piling up, such as the pipeline route from the oilfields of Eastern Siberia, which has been altered numerous times over the years, as well as the problem of confirming proven reserves and the enhancement of laws in order to promote the introduction of foreign capital; accordingly, the current situation is such that the outcome of this project cannot be predicted. When President Putin visited Japan in November 2005, both the Japanese and Russian governments agreed to speed up discussions aimed at the realization of the ESPO pipeline project, but the confusion within Russia surrounding the project failed to be sorted out, with changes to the route being made even in 2006, and negotiations between Japan and Russia remain deadlocked.

At the same time, with the price of crude oil continuing to reach record highs and a sharp increase in the quantity of crude oil imported by China, which is experiencing ongoing economic growth, fears concerning energy security are heightening across the globe. So what really is the true nature of the "Sino-Japanese scramble" concerning the ESPO pipeline project, which is being overheated by media reports not only in Japan, China and Russia, but also around the world? Even though there is nothing that can be done about the media's characteristic tendency to distort the facts, writing about things that they only half understand, it is necessary for us to zero in on the truth of the ESPO pipeline project and rethink "energy security", not only insofar as it concerns Japan, but also with regard to the region as a whole.

This paper consists of two parts. The first part will

provide a chronological summary of the major turning points relating to the ESPO pipeline project until now and explain the direction being taken by the project, while also looking at the progress of negotiations between Japan and Russia. There is a strong tendency for both the domestic and foreign media to focus a great deal of attention on a subject, with piecemeal reports frequently giving rise to misunderstanding, and this project has been no exception in this regard. Bearing in mind that the project must overcome a number of high hurdles before realization and that it will inevitably continue to go through various twists and turns, In the first part, I would like to highlight the current status of the ESPO project. Against the background of the recent high price of crude oil, Russia is demonstrating an increasingly tough stance, using energy as a diplomatic weapon, so how optimistic should we be at this stage with regard to the ESPO pipeline project? Russia, which wants to push ahead with the development of its eastern regions, is demonstrating a more proactive approach towards Japan and China in the energy sector, but has Russia already made all the necessary preparations for building sincere cooperative relations with other countries?

In the second part of this article, I will firstly consider the importance of the ESPO pipeline project, which is growing in importance as a national strategy for Russia. Next, rather than looking at the realization of the ESPO pipeline project from the perspective of the pipeline route itself, I would like to focus on more fundamental issues, such as developing oilfields in the eastern regions, with regard to which there is a considerable lack of transparency, and the problem of the investment climate that governs it. In what way will these aspects permit the entry of foreign capital?

Finally, bearing in mind Japan's New National Energy Strategy, I would like to ask what potential the ESPO pipeline project holds for Russo-Japanese energy relations and, by extension, energy cooperation at the level of Northeast Asia as a whole.

#### Part I: A Project in Disarray

1. The Pacific Route Surfaces (as a Counterproposal to the Daqing Route)

In July 2001, the Russian state-owned pipeline monopoly Transneft revealed its plan to build a 3,900km-long pipeline from Angarsk in Irkutsk Oblast to Nakhodka, on the Pacific coast of Primorsky Krai (preliminary calculations suggested that the total volume of oil transported would be 50 million tons, with construction costs totaling about \$5 billion; hereafter referred to as the "Pacific route"). However, this was a rival to the plan focused on building a 2,300km-long pipeline from Angarsk to Daqing in Heilongjiang Province, via the Sino-Russian border areas of Zabaikalsk in Chita Oblast and

Manzhouli in the Inner Mongolian Autonomous Region (preliminary calculations suggested that the total volume of oil transported would be 20 million tons from 2005 and 30 million tons from 2010, with construction costs totaling about \$2-2.5 billion; hereafter referred to as the "Daqing route"), on which the Chinese and Russian leaders agreed, appropriately enough, when President Jiang Zemin visited Moscow that same month in order to sign the Sino-Russian Treaty for Good Neighborliness, Friendship and Cooperation. Fundamentally speaking, negotiations had been conducted since the latter half of the 1990s between the Russian private sector oil company Yukos and the China National Petroleum Corporation (CNPC), concerning the construction of a pipeline to Daqing. On the occasion of the sixth regular Sino-Russian summit in September 2001, the two companies concluded an agreement to initiate a feasibility study concerning this pipeline.

Throughout 2002, Transneft intensified its lobbying activities with regard to both the Japanese and Russian governments behind closed doors, aiming to ensure that the Pacific route was realized, rather than the Daqing route. At that time, with regard to the Pacific route, the company only had the goals of securing its cash flow and transporting 50 million tons of oil, but its grounds for claiming that it was better than the Daqing route because the export destinations would not be limited to China, so it would eliminate three major potential problems: 1) China having the ability to control prices through its monopsony; 2) China becoming a transit country and exporting Russian crude oil to a third country at a premium; and 3) threats to its geopolitical interests. Furthermore, it goes without saying that the gigantic behind-the-scenes conflict concerning the respective interests arising from the construction of a large-scale pipeline was conducted in miniature in the Transneft vs. Yukos situation. For instance, when Transneft announced the Pacific route, the Tumen Oil Company (TNK), with which it had a competitive relationship in the development of Siberian oilfields, quickly offered its support.1

2. Prime Minister Koizumi's Visit to Russia and the Start of the "Sino-Japanese Scramble (?)"

When Prime Minister Koizumi visited Russia, the two leaders announced the Japan-Russia Action Plan; the section on energy cooperation states the following.

"The two countries share the awareness that the realization of projects that are in the interests of both sides from an economic perspective in the field of developing energy resources in the Far Eastern and Siberian regions of the Russian Federation and developing pipelines for transporting these resources will contribute significantly to the development of these regions and be conducive to enhancing the stability of international energy markets and the energy security of the Asia-Pacific region and the whole

world; moreover, they will develop cooperation in these fields in the Far Eastern and Siberian regions of the Russian Federation. (Emphasis author's own)"<sup>2</sup>

Even today, the two sides have different interpretations of this action plan, which is not legally binding; in general, the Russians state that Japan has already made an effective commitment to invest in the ESPO pipeline project, while the Japanese take the stance that the condition underlined above has not been put in place. Such unresolved issues will be discussed in the second part.

In any case, when Japan expressed its readiness to participate in the ESPO pipeline project that emerged from the Russian side, Russia began to weigh up Japan and China, both in name and reality, concerning access to the pipeline from Eastern Siberia. At the same time, the media circus concerning "the scramble between Japan and China" began to heat up, not only within Russia, but also in Japan and China.

### 3. Increasing Ambiguity Concerning the Selection of the Route

In May 2003, the Russian government designated the Pacific route the main line and presented a compromise proposal that took the Daqing route as a branch line.3 From this point, the focus of the discussion concerning the pipeline route switched from a choice between two options to the question of "Which will take precedence with regard to the commencement of work?" In August 2003, the Russian government adopted the document entitled "The Russian Energy Strategy Towards 2020" (hereafter referred to as the "2020 Energy Strategy"), but this merely adhered to the compromise proposal announced in May of that year. In October of the same year, Mikhail Khordorkovsky, the CEO of Yukos, was arrested on charges of massive tax evasion and the company that had once tried to promote the Daqing route became a lame duck (it went bankrupt in July 2006); however, the proposal for a route to China survived and, for a while, Transneft itself considered the timing of the construction of both the Pacific and Daqing routes.

As can be seen from what follows, repeated twists and turns have subsequently been seen concerning the specific route to be taken by the pipeline, but in any case, Russia has been weighing up the moves by Japan and China and there have been no changes in its basic approach of playing both ends against the middle.

#### 4. The Germination of the Northern Lake Baikal Route

Moving out of sequence a little, as of April 2002, Transneft was thinking about the Pacific route proposal, in which a pipeline starting at Angarsk, which is already linked by a pipeline to the oilfields of Western Siberia, would run north via Kazachinskoye and pass to the north of Lake Baikal before passing through Tynda and Skovorodino in Amur Oblast and turning southward at Khabarovsk to

<sup>&</sup>lt;sup>1</sup> In September 2003, this company established the joint venture TNK-BP with British Petroleum (BP) on the basis of a 50:50 capital ratio.

<sup>&</sup>lt;sup>2</sup> <a href="http://www.mofa.go.jp/mofaj/area/russia/kodo\_0301.html">http://www.mofa.go.jp/mofaj/area/russia/kodo\_0301.html</a>.

<sup>&</sup>lt;sup>3</sup> Interfax Oil & Gas Report, May 16-22, 2003.

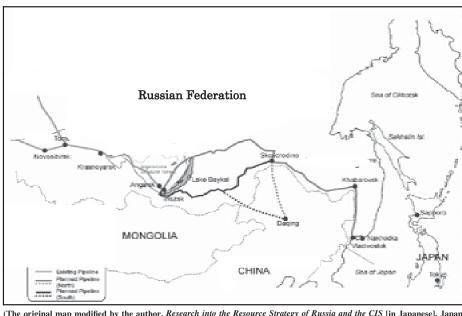


Figure 1 The Northern and Southern Routes from Angarsk

(The original map modified by the author. Research into the Resource Strategy of Russia and the CIS [in Japanese], Japan Institute of International Affairs, 2004, p.80.)

reach Nakhodka (this will hereafter be referred to as the northern route proposal). However, until January 2003, the company was also considering the potential of a route that would be diverted south of Lake Baikal from Angarsk, passing through the Tunkinsky National Park in the Buryat Republic and Chita Oblast before reaching Skovorodino (whence it would take the same route as the *northern route*; this will hereafter be referred to as the southern route proposal) (see Figure 1).4

As already mentioned, until the summer of 2003, the route predetermined by the Russian government was the one in which the Pacific route would be the main line, with the Daqing route joining it as a branch line (although the order of construction was unresolved), but from that year, the evaluation of the effects of pipeline construction on the environment began to come under closer scrutiny as one major factor affecting the decision concerning the route. In December 2003, the Russian Ministry of Natural Resources issued a negative assessment of the southern route proposal, on the grounds that there was potential for it to have a deleterious environmental impact on Lake Baikal.5

In February 2004, Transneft announced a new pipeline route (total length about 4,130km) starting from Taishet, about 130km northwest of the original starting point of Angarsk, taking a detour north of Lake Baikal and running more or less in parallel with the BAM Railway to Skovorodino, about 70km from the Sino-Russian border, and terminating at Perevoznaya Bay, on the Pacific coast of Primorsky Krai; this was conceived as an evolution of the existing northern route (see Figure 2).

#### 5. State Approval for the ESPO Pipeline Project

On 31st December 2004, Prime Minister Mikhail Fradkov signed Government Decree No.1737-r, approving the ESPO pipeline project. Inaccurate reports stating that this decision represented the victory of the Pacific route over the Daqing route appeared in the media within Japan and overseas. In the interests of accuracy, it should be noted that in the 2020 Energy Strategy published in August 2003, a blueprint that took the Pacific pipeline as the main line was stipulated, but the promotion of the plan on which Transneft had been working with the aim of its realization was no more than official approval on the part of the government. That is to say, as Russia, including Transneft itself, continued to demonstrate an ambiguous approach to the construction of the Daqing route running south from Skovorodino after passing along the northern route, as well as the timing thereof, talk of winning and losing on the part of Japan and China was on a totally different plane.

The essence of this government decree was as follows.6

(1) Based on a positive national environmental survey, approval is granted to the proposal of the Russian Ministry of Industry and Energy and Transneft concerning the formulation of a plan concerning and actual construction of a crude oil pipeline system with an annual maximum transport capacity

<sup>&</sup>lt;sup>4</sup> "Irkutskaia oblast'. Transneft' rassmatrivaet vtoroi variant stroitel'stva nefteprovoda Angarsk-Nakhodka", Regnum.ru, 10 January 2003 (online newspaper).

<sup>&</sup>lt;sup>5</sup> "Minprirody otsenit proekt 'Transneft'. 'Severnyi' variant nefteprovoda okazalsia edinstvennym", Nezavisimaia gazeta, 19 December 2003.

<sup>6 &</sup>lt;a href="http://npa-gov.garweb.ru:8080/public/default.asp?no=6052270">http://npa-gov.garweb.ru:8080/public/default.asp?no=6052270</a>>.

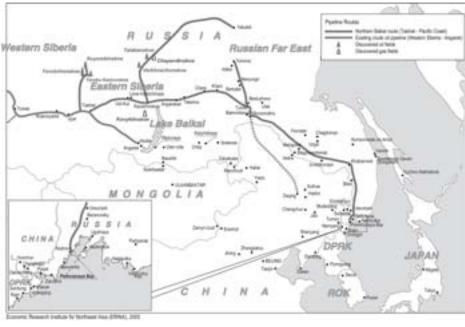


Figure 2 The Northern Route from Taishet

(Compiled by ERINA, 2005)

of 80 million tons on the route from Taishet to Perevoznaya Bay via Skovorodino (in other words the ESPO pipeline).

- (2) Approval is granted to the proposal of the Russian Ministry of Industry and Energy to grant to Transneft outsourcing authority concerning the formulation of the ESPO pipeline plan and its construction.
- (3) Working in partnership with the Russian Ministry of Industry and Energy and the Russian Ministry of Economic Development and Trade, the Russian Ministry of Natural Resources is to conduct geological surveys and formulate usage programs concerning hydrocarbon deposits in Eastern Siberia and the Far Eastern region.
- (4) The Russian Ministry of Industry and Energy, the Russian Ministry of Economic Development and Trade, and the Russian Ministry of Natural Resources are to work in partnership with Transneft in determining the various phases of the ESPO pipeline by 30<sup>th</sup> April 2005, based on the items in (3).
- (5) In collaboration with the Russian Ministry of Defense, the Russian Ministry of Transport is to formulate regulations concerning entry to and exit from the port in Perevoznaya Bay, with the aim of ensuring the security of navigation in the special port region and through channels in this bay.
- (6) With the participation of Russian Railways, the Russian Ministry of Transport is to formulate a series of measures for ensuring the smooth transportation of all materials necessary for the construction of the ESPO pipeline and to take all measures deemed necessary in order to transport crude oil by rail, taking into account the construction phases of the ESPO pipeline.
- (7) The cooperation of the state institutions of the Buryat Republic, Irkutsk Oblast, Chita Oblast, Amur

- Oblast, the Jewish Autonomous Oblast, Khabarovsk Krai and Primorsky Krai is to be requested, with a view to resolving various problems concerning the construction of facilities relating to the ESPO pipeline.
- (8) When Transneft adjusts the crude oil transport charges for the oil pipeline, the Russian Federal Customs Service is to take into account the necessity of procuring the necessary money for rebuilding the pipeline for transporting crude oil from Western Siberia to Taishet and funds for the design and construction of the ESPO pipeline system, based on the laws of the Russian Federation.
- (9) Working in partnership with the Russian Ministry of Economic Development and Trade and the Russian Ministry of Finance, the Russian Ministry of Industry and Energy is to formulate proposals relating to various measures for improving economic effectiveness in the construction of the ESPO pipeline, and to submit these by 30<sup>th</sup> April 2005.
- (10) The Russian Ministry of Industry and Energy is to carry out coordination, monitoring and guidance aimed at the realization of the ESPO pipeline project and related projects, and to submit a report to the Russian government every six months.

#### 6. The ESPO Pipeline Project is Split into Two Phases

On 26<sup>th</sup> April 2006, immediately after returning home from Japan, where he had attended a meeting of the Japan-Russia Intergovernmental Committee on Trade and Economic Affairs, Minister for Industry and Energy Viktor Khristenko signed Directive No.91 on the Decision Concerning the Construction Phases of the Pipeline Between Eastern Siberia and the Pacific (hereafter referred to as Directive No.91). Based on section (4) of the aforementioned Government Decree No.1737-r, this



Figure 3 The Two-Phase Plan for the ESPO Pipeline

(Compiled by the Russian Ministry of Industry and Energy)

directive divided the construction plan for the ESPO pipeline into two phases and set time-specific targets for the first phase (see Figure 3).

The essence of this directive was as follows.<sup>7</sup>

#### (1) The First Phase

A crude oil pipeline with a maximum annual transport capacity of 30 million tons is to be built along the route Taishet - Ust-Kut - Kazachinskoye - Tynda - Skovorodino. Crude oil produced in the oilfields of Western Siberia is to be earmarked for the section to be developed in the first phase; in order to do this, the oil transport capacity to Taishet is to be reinforced. Transneft is to cover its own fund procurement for constructing the first phase of pipeline construction and to complete this during the second half of 2008.

#### (2) The Oil Terminal Construction Plan

In planning the construction of the oil terminal in Perevoznaya Bay, it is anticipated that it will initially have a maximum annual handling capacity of 30 million tons. The aim is to ensure that the first shipments from the oil terminal to be constructed in Perevoznaya Bay begin at the same time as the pipeline to Skovorodino is completed.

#### (3) The Second Phase

The second phase involves the construction of an oil pipeline with an annual transport capacity of 50 million tons, from Skovorodino to Perevoznaya Bay; this would be linked to the pipeline to Skovorodino completed in the first phase of the project, thereby completing a pipeline system with a total annual

transport capacity of 80 million tons. The promotion of the second phase should be conducted in step with the development of oilfields in Eastern Siberia and the Far Eastern region, with the approval of the Russian Ministry of Natural Resources. In order to realize this phase, it will be necessary to consider the potential for using project financing mechanisms.

Incidentally, with regard to the first phase, it has been reported that crude oil will be transported by rail from Skovorodino to the oil terminal on the Pacific coast until the second phase is completed, but the prospects for this are uncertain at present.

At first glance, both Government Decree No.1737-r and Directive No.91 based on this made it seem that Russia had its foot on the accelerator with regard to the realization of the ESPO pipeline project. However, in fact, nothing can be seen concerning the branch line route to China; furthermore, it was merely a snap decision in which one cannot even find any information about the timing of the start of the second phase, which is the ultimate objective of the ESPO pipeline project, focusing on bringing oil to the Pacific coast.

### 7. President Putin's Impatience and the Establishment of the Work Schedule for the First Phase

One of the characteristics of President Putin is that he demands compliance with the deadlines for the realization of projects. In particular, with regard to the ESPO pipeline project, the president not only positioned the decision on the pipeline route as one of the national priorities in his

<sup>&</sup>lt;sup>7</sup> For the original text, see <a href="http://www.minprom.gov.ru/activity/auto/docs/law\_mpe/1/print">http://www.minprom.gov.ru/activity/auto/docs/law\_mpe/1/print</a>. Please note that the heading numbers used here do not necessarily correspond to those used in the original text.

annual presidential message to the Russian parliament in June 2004, but he also spearheaded actions at each juncture. In addition, it is said that immediately before Government Decree No.1737-r (December 2004) and Directive No.91 (April 2005) were announced, he urged the relevant ministries in charge to hurry up and implement the project.

However, despite Government Decree No.1737-r and Directive No.91, delays continued to occur in the formulation of a specific work schedule aimed at the commencement of pipeline construction, due to various conflicts of interest, between such actors as the relevant ministries, including the Ministry of Natural Resources and the Ministry of Industry and Energy, oil companies, particularly Transneft and Rosneft, and local areas where the pipeline is due to be constructed. Both the route proposed by Transneft, starting from Taishet and running north of Lake Baikal to Tynda, more or less running parallel to the BAM Railway (the aforementioned first phase), and the proposal in which Perevoznaya Bay is the terminus of the pipeline have encountered particularly fierce resistance from the Ministry of Natural Resources, environmental NGOs and local parliaments, because of concerns about environmental devastation (further details will be provided below).

On the other hand, for President Putin, who was planning to visit Japan for the first time in five years between 20<sup>th</sup> - 22<sup>nd</sup> November 2005, it was necessary to speed up the realization of the ESPO pipeline project.8 As the president has repeatedly declared, building the ESPO pipeline and extending it to the Pacific coast at some stage is part of Russia's predetermined national course, and the country is eager to secure the cooperation of Japan in the development of oilfields in Eastern Siberia (if not in the construction of the pipeline per se) and thereby the future realization of the second phase of the project. In October, just before his visit a month later, President Putin reprimanded those involved with the ESPO pipeline project, concerning the fact that its realization had been delayed without any satisfactory reasons for this, and he ordered Prime Minister Fradkov to speed up the compilation work being conducted by relevant organizations with the aim of realizing the plan. In particular, the Ministry of Natural Resources strongly objected to Transneft's attempts to promote a plan that placed greater importance on reducing construction costs than on the conservation of the environment of Lake Baikal, and which designated Perevoznaya Bay as the terminus of the pipeline, requiring the pipeline to pass through nature reserves on both land and sea. However, Minister for Natural Resources Yuri Trutnev gave into pressure from those championing the plan, who had been buoyed by the order from President Putin, and on 10<sup>th</sup> November he caved in the night before the Ministry of Industry and Energy submitted the draft work schedule for the first phase of the ESPO pipeline project.<sup>10</sup>

In 2004, Transneft submitted to the State Environment Survey Committee (GEE), which is the first barrier to be cleared with regard to environmental problems, a plan to construct the pipeline 80-100km away from the shores of Lake Baikal and had had this plan approved. However, in the spring of 2005, this was switched for a plan in which the pipeline came within 800m of Lake Baikal at its nearest point, and it was this plan that was submitted to the government. Nevertheless, partly due to the support of the Ministry of Industry and Energy following the acceleration of the implementation of the plan, it was bulldozed through. In late November, the Federal Nature Use Surveillance Service (Rosprirodonadzor), which is affiliated with the Ministry of Natural Resources, informed the Federal Environmental, Engineering and Nuclear Supervision Agency (Rostekhnadzor) that it would approve Transneft's draft plan. 11

The main content and deadlines of the draft work schedule for the first phase of the ESPO pipeline project (hereafter referred to as *the first phase work schedule*) are as follows. <sup>12</sup>

(1) The completion of feasibility studies and granting of approval by relevant ministries

Federal Appraisal Committee (Glavgosekspertiza) under the jurisdiction of the Ministry of Regional Development: by 30<sup>th</sup> December 2005.

Federal Environmental, Engineering and Nuclear Supervision Agency: by 28<sup>th</sup> December 2005.

Federal Ministry of Health and Social Welfare, Federal Ministry of Agriculture, Federal Service for Hydrometeorology and Environmental Monitoring, Federal Ministry of Culture and Mass Communication, Federal Ministry of Natural Resources, various related bodies under the jurisdiction of the Federal Ministry of Emergency

<sup>&</sup>lt;sup>8</sup> After visiting Japan (in early June of that year), at a cabinet meeting, Foreign Minister Sergei Lavrov reported that the Japanese response to the VSTO pipeline concept was vague. In response, President Putin instructed the cabinet that it was necessary to intensify work in order to secure concrete interest on the part of Japan. <a href="http://www.kremlin.ru/text/appears/2005/06/89163.shtml">http://www.kremlin.ru/text/appears/2005/06/89163.shtml</a>.

<sup>&</sup>lt;sup>9</sup> "<Transneft'> forsirovala Baikal: Yurii Trutnev razreshil protianut' nefteprovod riadom s ozerom", Kommersant', 11 November 2006; "Vtoroe preduprezhdenie: Putin opiat' velel uskorit' stroitel'stvo Vostochnogo truboprovoda", *Vedomosti*, 24 October 2005.

<sup>&</sup>lt;sup>10</sup> Minister for Natural Resources Yuri Trutnev continued to object to the proposal that took Perevoznaya Bay as the terminus, but, as though turning his back on this decision, he declared that he would approve the proposal to have the pipeline pass close to the northern shore of Lake Baikal, because of Transneft's plan to introduce up-to-date technology. "Perevoznaia ostaetsia bukhtoi pretknoveniia", *Zolotoi rog* (Vladivostok), 17 November 2005.

<sup>&</sup>lt;sup>11</sup> Dal'nii Vostok [in Japanese], No.630, 5 December 2005.

<sup>&</sup>lt;sup>12</sup> For the original text, see <a href="http://www.minprom.gov.ru/activity/energy/docs/project/0">http://www.minprom.gov.ru/activity/energy/docs/project/0</a>. Please note that the heading numbers used here do not necessarily correspond to those used in the original text.

- Situations: by 10<sup>th</sup> 11<sup>th</sup> November 2005.
- (2) Settling the construction plan (Transneft)
  Pipeline construction: by 10<sup>th</sup> March 2006.
  Oil pumping stations: by 1<sup>st</sup> March 2006.
  Perevoznaya Bay Terminal: by 1<sup>st</sup> May 2006.
- (3) Change in the registration of the forest land within the construction area to non-forest land (all within 2006)

Areas where the pipeline and oil pumping stations are due to be built: Irkutsk Oblast by 1<sup>st</sup> March, Buryat Republic, Chita Oblast and Amur Oblast by 10<sup>th</sup> April.

Area where the Perevoznaya Bay terminal is due to be built: by 1<sup>st</sup> May.

- (4) Procedures for obtaining licenses to use water resources (rivers, lakes, seas): by 9<sup>th</sup> June 2006.
- (5) Bidding and contracts for procuring construction materials (Transneft)
   Pipeline construction: by 20<sup>th</sup> July 2006.

Oil pumping stations: by 10<sup>th</sup> September 2006. Perevoznaya Bay terminal: by 30<sup>th</sup> August 2006.

(6) Bidding and contracts for construction and installation (Transneft)
 Pipeline construction: by 12<sup>th</sup> August 2006.
 Oil pumping stations: by 14<sup>th</sup> September 2006.
 Perevoznaya Bay terminal: by 30<sup>th</sup> September

2006.

(7) Licenses from relevant ministries and agencies and local administrations concerning construction and installation

Areas where the pipeline and oil pumping stations are due to be built: by 3<sup>rd</sup> - 6<sup>th</sup> October 2006.

Area where the Perevoznaya Bay terminal is due to be built: by 10<sup>th</sup> May 2006.

(8) Implementation of construction and installation work (Transneft)

Areas where the pipeline is due to be built (from west to east, in the order Irkutsk Oblast, Buryat Republic, Chita Oblast and Amur Oblast):

Construction commences: 1<sup>st</sup> July - 1<sup>st</sup> October 2006

Construction completed: 30<sup>th</sup> May - 30<sup>th</sup> August 2008

Oil pumping stations (3 in Irkutsk Oblast, 1 each in Buryat Republic, Chita Oblast and Amur Oblast):

Construction commences: 1<sup>st</sup> August - 20<sup>th</sup> October 2006.

Construction completed: 10<sup>th</sup> June - 10<sup>th</sup> September 2008.

Perevoznaya Bay terminal:

Construction commences: 1<sup>st</sup> July 2007.

Construction completed: 8<sup>th</sup> November 2008.

(9) Operation and adjustment of the first phase pipeline: 1<sup>st</sup> April - 10<sup>th</sup> November 2008.

8. President Putin's Visit to Japan (November 2005)

Both sides had a shared prior awareness that it would be extremely difficult to reach a compromise concerning the Northern Territories issue and that it was likely that no solution would present itself during the president's visit. In fact, the Russian side adamantly refused to confirm the Tokyo Declaration (1993), which advocated the conclusion of a peace treaty after the resolution of the territorial dispute over the four northern islands, and has demonstrated a more rigid attitude in its policy *vis-à-vis* Japan with regard to this issue, both at home and abroad.

On the other hand, a prime example of a matter with regard to which both Japan and Russia were trying to elicit further concessions from the other is the ESPO pipeline. The Japanese side again requested that the route to the Pacific coast be given precedence over the route to China. In response, President Putin went no further than to state once again that the government had already taken the decision to extend the pipeline to the Pacific coast in due course, failing to answer the question about which route would be given precedence in the commencement of construction work. In other words, on the subject of the ESPO pipeline project, both Japan and Russia just followed a parallel course in line with their previous pronouncements and no substantive agreement was reached.

One of the 12 agreements that were the outcome of President Putin's visit to Japan was the Detailed Agreement Concerning Cooperation in Individual Energy Fields signed by Minister of Foreign Affairs Taro Aso, Minister of Economy, Trade and Industry Toshihiro Nikai and Minister of Industry and Energy Viktor Khristenko.<sup>13</sup> This document did not make a single reference to substantive problems in the realization of the ESPO pipeline project or solutions to these and lacked any meaning beyond such flowery rhetoric as the following:

"...Russia declared that a substantial amount of oil and oil products would be exported from Perevoznaya Bay after the construction of the first phase of the 'ESPO pipeline system' has been completed. Russia will endeavor to ensure that the transition to the second phase of the project takes place as soon as possible. Japan welcomes this approach.

Both parties will discuss the conditions for the achievement and implementation of mutually beneficial agreements by companies and institutions in the two countries, concerning feasible cooperation related to the realization of the construction of the second phase of the 'ESPO pipeline system'. As a result of these discussions, both parties will aim to reach a mutual understanding as early in 2006 as possible. This will speed up the realization of the construction of the second phase of the 'ESPO pipeline system'. (Emphasis author's own)"

It ultimately proved impossible to achieve the goal underlined above and even at the Japan-Russia summit held during the G8 summit in St Petersburg in July 2006, there was no sign whatsoever of a breakthrough in the stalemate between the two countries concerning the ESPO pipeline project.

<sup>13 &</sup>lt;a href="http://www.mofa.go.jp/mofaj/kaidan/yojin/arc\_05/j\_russia\_shomei.html#3">http://www.mofa.go.jp/mofaj/kaidan/yojin/arc\_05/j\_russia\_shomei.html#3>.

However, before lapsing into such facile interpretations as a mutual lack of understanding between Japan and Russia, from the next section onwards I would like to verify the fact that Russia itself is still a long way from completing the preparations for seeking external cooperation in realizing the ESPO pipeline project. The project is heating up within Russia, but there is a strong tendency for government decisions, directives and other draft plans that have been announced to be consigned to oblivion amidst numerous directionless revisions. With regard to the first phase work schedule mentioned in the previous section, despite the fact that it was announced in a way that was very close to official approval, less than six months later it had undergone changes in the pipeline route and existed in name only.

#### Conflict Over Rights Under the Pretext of "the Environment"

At the beginning of January 2006, President Putin visited the Sakha Republic and, with regard to the ESPO project, asserted that, "As promised, in April we will secure all the necessary agreements at the governmental level and will move into the implementation phase this summer."14 However, in November last year, although the Ministry of Natural Resources had previously made substantial concessions, attempts to coordinate the relevant authorities concerning measures to deal with environmental problems and economic benefits became tangled up. The tug-ofwar between such actors as the various federal entities located along the pipeline route, the Federal Environmental, Engineering and Nuclear Supervision Agency, and Transneft escalated and, in the summer of 2006, another major change in the pipeline route was forced upon the ESPO pipeline project. Some parts may deviate from the chronological order employed in this article, but I would now like to summarize the issues behind the delay in the pipeline project due to "its impact on the environment".

#### Problems concerning the site of the oil terminal

With Government Decree No.1737-r, Perevoznaya Bay became the official candidate site for the oil terminal on the Pacific coast where the second phase pipeline will eventually terminate (until this is completed, oil will be transported by train from Skovorodino, the easternmost point of the first phase pipeline). However, the assembly of Khasan District and local and foreign environmental NGOs

such as Russian Greenpeace have raised objections to this proposal, on the grounds of the danger of environmental destruction in the strict nature reserve through which the pipeline route runs and the marine reserve through which oil tankers would pass. Furthermore, in addition to the voices appealing for the protection of rare wild animals and biological and plant resources, the competition between differing interests concerning the attraction of the oil terminal, involving such actors as the state-owned oil company Rosneft and various local areas within Primorsky Krai, is closely intertwined with this, with environmental problems being used as an excuse.<sup>15</sup> Nakhodka, which up until 2003 was cited as the terminus of the pipeline, has now emerged once more as a candidate site.<sup>16</sup> In Primorsky Krai, after Directive No.91 was issued (in April 2005), the local administration and some sections of the territorial assembly began asserting the positive effects on the local economy, such as an expansion in new employment, and, on the grounds that the possibility existed that these vast benefits would be washed away into neighboring Khabarovsk Krai, it was going along with Transneft's attempts to force through the Perevoznaya Bay proposal.<sup>17</sup> However, in the summer of that year, Primorsky Governor Sergei Darkin changed his previous stance and began to make remarks to the effect that he would not necessarily support Transneft's decision to insist upon Perevoznaya Bay.<sup>18</sup>

Although the Ministry of Natural Resources continued to object strongly to the Perevoznaya Bay proposal, <sup>19</sup> this proposal was incorporated in line with Transneft's demands at the stage at which the draft of *the first phase work schedule* was published, as we have already seen.

In November 2005, Minister for Natural Resources Yuri Trutnev asserted that it was more rational, safer, cheaper and more effective to build the oil terminal in the vicinity of Nakhodka Port, rather than at Perevoznaya Bay.<sup>20</sup>

Soon afterwards, Transneft CEO Semyon Vainshtok revealed that, in light of the fact that construction of the oil terminal could start a year later than construction of the pipeline, because the Ministry of Defense had reservations about the Perevoznaya Bay proposal, the company would adopt a more flexible response to the proposal concerning the alternative site. In January 2006, Presidential Envoy to the Far Eastern Federal District Kamil Iskhakov (appointed in January 2005) inspected the route envisaged in the Perevoznaya Bay proposal for the first time and expressed

<sup>&</sup>lt;sup>14</sup> "Den' pered Rozhdestvom", Vladivostok, 11 January, 2006.

<sup>&</sup>lt;sup>15</sup> "Vse delo v sborakh", *Zolotoi rog* (Vladivostok), 15 March, 2005; "Perevoznuyu zhal', Nakhodka - net?: Biznes-elita Primor'ia vedet ozhestochennuyu bor'bu za krainyuyu tochku nefteprovoda", *Ezhednevnye novosti*, 16 March 2005.

<sup>&</sup>lt;sup>16</sup> "Tikhii okean nachinaetsia v Nakhodke", *Vremia novostei*, 15 March, 2005.

<sup>&</sup>lt;sup>17</sup> Dal'nii Vostok [in Japanese], No.601, 9 May 2005.

<sup>&</sup>lt;sup>18</sup> "Gubernator ozadachilcia ekologiei zaliva<sup>"</sup>, *Ezhednevnye novosti*, 13 July 2005. For more concerning the maneuvering between the governor and Transneft, see "Gadaniia na neftianoi gushche: Kraevaia administratsiia vytorgovyvaet u 'Transnefti' ochistnye sooruzheniia", *Zolotoi rog*, 2 August 2005.

<sup>&</sup>lt;sup>19</sup> "Yurii Trutnev: Baikal v obidu ne dadim", Rossiiskaia gazeta, 17 November, 2005.

<sup>&</sup>lt;sup>20</sup> "Grafik stroitel'stva truboprovoda 'Vostochnaia Sibir' - Tikhii okean' soglasovan". *Regnum ru.*, 14 November 2006 (online newspaper).

<sup>&</sup>lt;sup>21</sup> "Konechnyi punkt nefteprovoda iz bukhty Perevoznaia mozhet byt' perenesen", Zolotoi rog (Vladivostok), 12 January 2006.

his opposition to this proposal. He subsequently voiced his support for those advocating the postponement of the selection of an alternative proposal until the problems relating to the route to the north of Lake Baikal had been resolved.<sup>22</sup>

In late January, the Federal Environmental, Engineering and Nuclear Supervision Agency commissioned a committee of experts to conduct a state environmental review of the ESPO pipeline plan submitted by Transneft. As a result, a negative conclusion was reached concerning both the proposal that took Perevoznaya Bay as the terminus of the pipeline and the proposal for the route close to the shores of Lake Baikal. Konstantin Pulikovsky, Head of the Federal Environmental, Engineering and Nuclear Supervision Agency, refused to accept the rejection of the latter plan, but signed a conclusion blocking the former.<sup>23</sup>

Subsequently, just as the Ministry of Natural Resources and the Ministry of Economic Development and Trade had submitted a proposal just before *the first phase work schedule* was published the previous autumn,<sup>24</sup> Transneft began to talk about Kozmino Bay, located near Nakhodka, 50km away from Perevoznaya Bay, as the leading candidate site and, as of the summer of 2006, this proposal is awaiting government approval.<sup>25</sup>

#### The Lake Baikal problem

Over the three years until January 2006, the ESPO pipeline plan prepared by Transneft came before the State Environmental Review Committee four times.<sup>26</sup> The main reason for this was environmental conservation issues relating to Lake Baikal, which is a UNESCO World Heritage Site. To simplify the bone of contention, the closer to Lake Baikal that the pipeline passed when running east from the starting point of Taishet (the initial starting point was Angarsk), the easier it would be to use existing infrastructure, such as roads and railways, when transporting the materials and manpower needed for the construction of the pipeline. However, there was a commensurate increase in the potential for this beautiful lake to be polluted (via the rivers that flow into it), in the event of an accident affecting the pipeline, such as an oil spill. Conversely, if the pipeline was diverted as far away from Lake Baikal as possible, not only would the pipeline become longer, but also the percentage of it passing through areas in which infrastructure has yet to be developed would increase, causing the cost of construction and time required for it to rise. In other words, if Transneft tries to realize the ESPO pipeline project on the basis of reducing economic costs and keeping the amount of investment required as low as possible, it will accordingly come into conflict with the groups advocating that the emphasis be placed on environmental conservation (Greenpeace Russia, WWF (World Wildlife Fund) Russia, the UNESCO World Heritage Committee, etc.)

In 2003, when Transneft submitted the ESPO pipeline plan (letter of intent to invest) to the Ministry of Natural Resources, it was turned down because the pipeline was only 20km away from the shores of Lake Baikal at its nearest points.<sup>27</sup> In the revised draft submitted in 2004, the distance was 80-100km away and a positive response was received from the State Environment Survey Committee. However, by the spring of 2005, Transneft was taking a tougher line, in order to get the government to approve its proposal in which the pipeline route was brought further south, coming even closer to the shores of Lake Baikal (within 2km) than it was in the initial proposal. <sup>28</sup>

As stated above, Transneft's "forcible proposal" was left behind when the compilation and publication of the draft work schedule for the first phase was rushed through at the instruction of President Putin. When the state environmental survey was conducted in January 2006, an overwhelming majority of the committee members - 43 out of 52 - reached a negative conclusion concerning the draft in which the pipeline would come as close as 800m from the shores of Lake Baikal. The reasons given included its lack of acceptability under federal laws concerning the environment, the incomplete nature of the documents submitted by Transneft, and the fact that the pipeline would pass through an earthquake-prone zone north of Lake Baikal.

Unlike the situation with regard to Perevoznaya, Head of the Federal Environmental, Engineering and Nuclear Supervision Agency Konstantin Pulikovsky immediately refused to sign the negative conclusion and provide it with a legal basis; on the contrary, he increased the number of members of the committee by 25 and ordered them to

<sup>&</sup>lt;sup>22</sup> "V okruge perevom: Polpred pezidenta v Dal'nevostochnom federal'nom okruge Kamil' Iskhakov ne verit v sluchainosti i ne slushet otgovorki", *Rossiiskaia gazeta*, 8 February 2006 (online edition).

<sup>&</sup>lt;sup>23</sup> "Chistka Baikala otkladyvaetsia: chistka ekspertov nachalas'", *Rossiiskaia gazeta*, 4 February 2006 (online edition). Konstantin Pulikovsky served as Presidential Envoy to the Far Eastern Federal District until November 2005.

<sup>&</sup>lt;sup>24</sup> "Ministr Trutnev i Gref predlagaet protianut' vostochnyi truboprovod do Nakhodki", *Regnum.ru*, 19 September 2005 (online newspaper).

<sup>&</sup>lt;sup>25</sup> "<Transneft'> i ekologi nashili tochku soprikosnoveniia: vsto budet zavershen v meste, ukazannom fondom dikoi prirody", *Kommersant*', 29 July 2006.

<sup>&</sup>lt;sup>26</sup> Dal'nii Vostok [in Japanese], No.638, 6 February 2006.

<sup>27</sup> Ibid.

<sup>&</sup>lt;sup>28</sup> "Stroitel'stvo nefteprovoda 'Vostochnaia Sibir' - Tikhii-Okean' pod voprosom", *Regnum.ru.*, 16 May 2005 (online newspaper); "Grinpis Rossii: Rukovodstvo 'Transneft' dolzhno ponesti zasluzhennoe nakazanie", *Regnum ru.*, 15 June 2005 (online newspaper).

<sup>&</sup>lt;sup>29</sup> "Trubu otodvinuli ot Baikala", *Rossiiskaia gazeta*, 27 January 2006 (online edition); "Komissiyu po Baikalu vyveli na chisty list", *Rossiiskaia gazeta*, 31 January 2006 (online edition).

reconsider the plan for another month. <sup>30</sup> As a result, at the end of February, an overwhelming majority of committee members this time reached a positive conclusion on the Transneft proposal and Pulikovsky signed this in early March. <sup>31</sup> The series of approval processes during this period was flagrantly "politically guided", while masquerading as being for the sake of "the environment". <sup>32</sup> Semyon Vainshtok, CEO of Transneft, which has a strong tendency to disregard environmental problems and has thus become the target of criticism, both at home and abroad, himself had no hesitation in declaring that the criticisms from various quarters concerning the problem of protecting Lake Baikal were based on "political and economic, rather than environmental" motives. <sup>33</sup>

Responses at the level of the various federal entities through which the pipeline was due to pass were not uniform. In the Buryat Republic, which is adjacent to the eastern shore of Lake Baikal, President Leonid Potapov, who hoped that the pipeline would have a positive impact on the local economy, actively supported the proposal and chastised his own parliament, which was apprehensive about the pollution of Lake Baikal. <sup>34</sup>

In Chita Oblast, both the administration and the regional assembly welcomed the Transneft proposal as something that would revitalize the local economy, while in Amur Oblast, where Skovorodino, the terminus of the first phase of the pipeline from Taishet, is located, there was no significant opposition campaign at the level of either the administration or the assembly. In Khabarovsk Krai, where environmental NGOs are very active, Governor Victor Ishaev appealed to the federal government to designate a Khabarovsk port - De Kastri or Vanino - as the terminus for future oil shipments to the Pacific coast, rather than a port in Primorsky Krai. <sup>35</sup>

#### 10. The Extension of the Pipeline Route

The draft *first phase work schedule* published in November 2005 by the Ministry of Industry and Energy was approved by the Federal Appraisal Committee on 6<sup>th</sup> April.<sup>36</sup> On the 26<sup>th</sup> of that month, in the city of Tomsk (the capital of Tomsk Oblast) in Western Siberia, President Putin assembled the leaders of administrations in the Siberian Federal District and the ministers from federal ministries and agencies related to the economy, and presided over a conference concerning the socioeconomic development of Siberia. A shock was in store for Vainshtok,

who was participating in the conference, concerning the environmental problems relating to the ESPO pipeline project.

The sounding of a warning by President Putin that national economic development projects must not be obstructed by environmental problems is still fresh in our minds.<sup>37</sup> We have already seen above that he had emphasized the acceleration of the ESPO pipeline project on a number of occasions. In fact, with Transneft's "policy of environmental neglect" still enduring in Directive No.91 (April 2005) and the draft work schedule for the first phase (November 2005), the company was undoubtedly bearing in mind the "support" of President Putin.

However, at this conference, in the middle of a live television broadcast, President Putin himself rebuked Transneft for its inadequate awareness of environmental problems and urged Vainshtok to change the pipeline route.<sup>38</sup> There is no way of knowing what the real biggest reason for this was: whether President Putin had listened to public opinion at home and abroad, or whether it was a political show that arose from his awareness that, immediately after this conference, he was to hold a summit with the German Chancellor Angela Merkel, who has a tough attitude to environmental problems, or whether it was based on a judgment that it was possible to expand the scale of the ESPO pipeline project by altering the route, given that a considerable amount of leeway had emerged in the country's foreign exchange reserves thanks to the recent high price of crude oil. In any case, President Putin explained to Vainshtok the necessity of giving adequate consideration to the danger that natural disasters, such as earthquakes or landslides, could pose, referring to the need to amend the plan to bring the pipeline within such close range (800m) of the shores of Lake Baikal. However, President Putin did not permit the postponement of the planned deadline for completion of the first phase (the latter half of 2008).

On 28<sup>th</sup> April, work began on the section of pipeline from Taishet, the starting point of the first phase, to Ust-Kut (just over 600km). However, this means that this was a snap decision taken before the route east of Ust-Kut, which approaches the southern side of Lake Baikal, had been approved.

By the summer of 2006, Transneft had drawn up a new proposal for the pipeline route that ran from Ust-Kut to Skovorodino via the Sakha Republic, passing about

<sup>30 &</sup>quot;Chistka Baikala otkladyvaetsia, chistka ekspertov nachalas'".

<sup>&</sup>lt;sup>31</sup> "Sibir' prirastet nefteprovodom", *Rossiiskaia gazeta*, 14 March 2006 (online edition).

<sup>&</sup>lt;sup>32</sup> "Nefteprovod vedet naprolom: Khotia gosekspertiza prokhodit s ser'eznymi narusheniiami, edva li marshrut truby budet izmenen", *Zolotoi rog* (Vladivostok), 7 March 2006.

<sup>&</sup>lt;sup>33</sup> "Vokrug Baikala- Semen Vainshtok president OAO 'Transneft": Stroitel'stvo nefteprovoda 'Vostochnaia Sibir' i Tikhii okean' vygodno i bezopasno dlia Baikala", *Rossiiskaia gazeta*, 10 February 2006 (online edition).

<sup>&</sup>lt;sup>34</sup> Dal'nii Vostok [in Japanese], No.649, 24 April 2006.

<sup>&</sup>lt;sup>35</sup> "Porty zhelayut sest' na trubu: prodolzhaetsia bor'ba za konechnuyu nefteprovoda Vostochnaia Sibir' - Tikhii okean", *Vremia novostei*, 5 March 2005.

<sup>&</sup>lt;sup>36</sup> "Glavrospertiza utverdila TEO stroitel'stva ocheredi VSTO", Neftegazovaia vertikal', 10 April 2006.

<sup>&</sup>lt;sup>37</sup> "Putin: stroitel'stvo truboprovoda Sibir'-Datsin - krupneishii proekt", *RIA Novosti*, 20 July 2005.

<sup>&</sup>lt;sup>38</sup> For further details, see "Baikalspasaigrup: Vladimir Putin ukazal novyi marshrut vostochnogo truboprovoda", *Kommersant*', 27 April 2006.

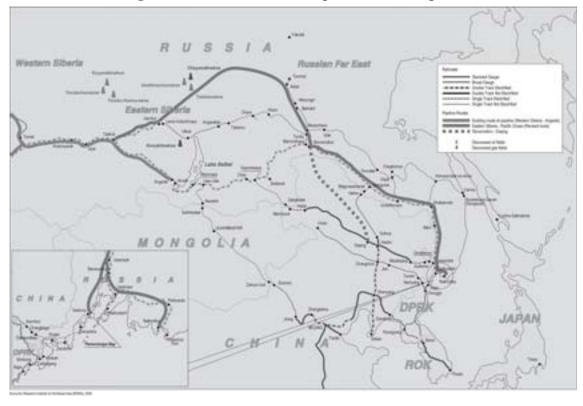


Figure 4 The New Extended Pipeline Route Proposal

(Compiled by ERINA, 2006)

400km from the shores of Lake Baikal (this will hereafter be referred to as the *new extended pipeline route* proposal). At present, Transneft is at the stage of conducting public hearings in the various regions, with the aim of completing the state approval procedures by the end of this year.<sup>39</sup>

Under the *new extended pipeline route* proposal, after running from Taishet to Ust-Kut and Kirensk in Irkutsk Oblast, the pipeline will enter the Sakha Republic and pass through Lensk, Olyokminsk, Aldan and Neryungri, before reaching Tynda and Skovorodino in Amur Oblast (see Figure 4).<sup>40</sup> The section from Ust-Kut to Tynda is called the "extended section". <sup>41</sup>

The section (just under 140km long) from Skovorodino, the easternmost point of the first phase pipeline, to Tynda, which lies to the north of it, is the same as that planned in the original *first phase work schedule*, and work began on this in September. In other words, construction on the first phase pipeline has begun from both the western (Taishet) and eastern (Skovorodino) ends, with the extended section between them.

Under the *new extended pipeline route* proposal, the pipeline is longer to the extent that it forms a big arc to the

north, but on the other hand it will pass close to mineral deposits that are expected to be developed in the future, such as the Verkhnechon (Irkutsk Oblast) and Tarakan (Sakha Republic) oilfields. The Russian side has already recognized that the realization of the second phase of the ESPO project and the timing thereof will depend on the progress of the development of oilfields in Eastern Siberia. In the future, if formal approval is granted to this proposal, will the Russian government, which is aiming to create the synergistic effects of accelerating the development of oilfields in Eastern Siberia and securing and increasing the quantity of oil to be transported via the ESPO pipeline, be able to achieve its goals?

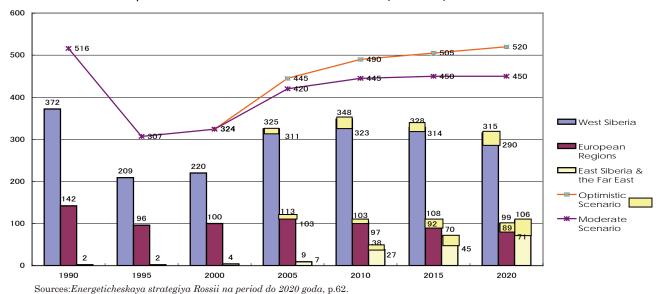
There have been numerous changes and u-turns with regard to the ESPO pipeline project, and it has not been possible to coordinate Russian domestic interests with Russia's own plan; given this fact alone, we can say that, at present, it is still too early to begin concrete joint projects with other countries. Based solely on the undeveloped state of the ESPO pipeline and the ambiguities described above, it is necessary for Japan and China to reflect deeply on the confusion that Russia has caused in recent years in trying to

<sup>&</sup>lt;sup>39</sup> "Dorogaia energiia 'Transneft'", Vedomosti, 21 August 2006.

<sup>&</sup>lt;sup>40</sup> "Nachat protsess obshshestvennogo obsuzhdeniia izmenennogo proekta nefteprovoda VSTO", *Regnum.ru.*, 24 May 2006; "VSTO povernuli ne tuda: teper' vozmushcheny zhiteli Lenska", *Vostochno-sibirskaia pravda*, 15 July 2006.

<sup>41 &</sup>quot;Vdol Leny k Talakanu", Truboprovodnyi transport neft, no.08.2006. <a href="http://www.transneft.ru/magazin/tema2006\_8\_1.shtm">http://www.transneft.ru/magazin/tema2006\_8\_1.shtm</a>.

<sup>&</sup>lt;sup>42</sup> "Vce-taki Kitai: Rossiia poka ne budet stroit' nefteprovod do Tikhogo okeana", Vedomosti, 28 April 2005.



Graph 1: Russian Crude Oil Production Forecast to 2020 (Million tons)

#### Part II: Project Feasibility

1. The Eastern Regions in Russia's National Strategy

play Tokyo and Beijing off against each other.

Never before in the history of Russia (including the Soviet period and the era of Imperial Russia) has Moscow been as serious about the development of Russia's eastern regions as it is today. Even after the Trans-Siberian Railway was built at the beginning of the 20th century, Siberia and the Far Eastern region continued to be "halfforsaken" regions for Russia. However, at present, energy development in this region has come to be positioned at the heart of state policy, as something that holds a major key to the fate of the nation. The reasons for this are the geopolitical importance of the eastern regions and their abundant natural resources, such as oil and natural gas.44 With regard to its geopolitical importance, Russia's awareness that it faces China geographically across a land border that stretches for more than 4,000km is certainly not new in historical terms. Of course, this has varied to some degree or another according to the times, and even if we go back to pre-Putin-era Russia and further back to the Soviet

era, we can see that Moscow has feared the potential for losing its geopolitical interests to China. However, there was the paradox that even so, it made no effort to lead the eastern regions out of their economic backwardness.

On the other hand, with regard to the issue that takes precedence over the question of whether or not it can achieve its geopolitical ideas, Russia today has to get cracking on the development of the natural resources that lie - notionally, at least - in abundance under the eastern regions. Russia has not as yet been able to break away from its economic system, which is excessively dependent on resources. The production and import of oil and natural gas and other related business activities account for the majority of annual government revenue.

Hitherto, more than 70% of crude oil and natural gas production in Russia has taken place in Western Siberia. Graph 1 shows the region-by-region predictions of crude oil production given in the Russian Energy Strategy to 2020 (hereafter referred to as the 2020 Energy Strategy), which was published by the Russian government in August 2003.

According to this, similarly to natural gas, the volume

<sup>&</sup>lt;sup>43</sup> Concerning the argument that the Siberia region has become a kind of shackle on the economic development of Russia, see Fiona Hill & Clifford Gaddy, *The Siberian Curse: How Communist Planners Left Russia Out in the Cold* (Washington D.C.: Brookings Institution Press, 2002).

<sup>2003).

44</sup> Regarding the background to the increase in the eastern region's geopolitical importance under the Putin administration and various domestic developments during Putin's fi rst term, see my article, "Sino-Russian Relations in the Putin Era: Focusing on Bilateral Relations Concerning Eastern Russia", published in Russian Diplomacy Today I (Hokkaido University Slavic Research Center, 21st Century COE Program Research Report Series No.2, 2004, pp.62-105)[in Japanese]. It is well known that Putin himself has urged the reconstruction of Russia's national strategy with a focus on energy resources since his time as Deputy Mayor of St Petersburg. With regard to the hypothesis that the President is gradually realizing his vision, see Harley Balzer, "The Putin Thesis and Russian Energy Policy", Post-Soviet Affairs, vol.25., no.3, 2005, pp.210-225.

of crude oil production in Western Siberia will peak around 2010 and it is envisaged that the subsequent decrease in output from that region will gradually be covered by production from Eastern Siberia and the Far Eastern region. The figures published forecast that, even under the optimistic scenario, after the volume of crude oil production in Western Siberia increases slightly from 325 million tons in 2005 to 344 million tons in 2010, output will decline to 315 million tons by 2020.

Basically, from 2010 to 2020, while the share of Western Siberia in the volume of Russia's crude oil production will fall from 71% to 61%, the share accounted for by Eastern Siberia and the Far Eastern region is forecast to rise from 7.8% to 20%.

#### 2. Russia Looks Towards the Asia-Pacific Markets

The 2020 Energy Strategy states that the share accounted for by the Asia-Pacific region in Russia's crude oil export destinations will increase from 3% at the beginning of the 21<sup>st</sup> century to 30% in 2020. Russia is formulating a plan for providing eastern countries with a maximum of 100 million tons of crude oil to 2020. In an interview carried in the governmental newspaper Rossiyskaya gazeta in February 2006, Minister of Industry and Energy Viktor Khristenko focused on the fact that European energy demand will peak in the future, while Asia-Pacific energy markets are achieving the highest growth rates in the world, and reaffirmed Russia's willingness to be proactive in entering the latter markets, while making use of its unique geographical conditions. 46

On the other hand, there is another reason behind Russia's decision to focus on the Asia-Pacific region as a destination for its exports of crude oil. According to statistics from the Ministry of Economic Development and Trade, about 96% of crude oil produced in Russia in 2006 was sent to European markets,<sup>47</sup> but because "Urals crude oil" is cheaper than "North Sea blent crude oil" and buyers can beat down the price, Russia is losing about \$6-7 billion annually. According to a remark made by Mr. Khristenko during a meeting of the Government Committee on the

Fuel and Energy Sector, if the ESPO pipeline project is realized, 11.6-26% of the total volume transported by pipeline will be sent to the east. 48 Transneft Vice-President Sergey Grigoriev has revealed the company's plan to introduce uniform charges for the transport of crude oil to markets in Europe and Asia, but after the construction of the first phase of the ESPO pipeline, there are those who are of the opinion that oil companies can offset the cost of discounts in European markets by earning the socalled "Asian Premium". 49 In addition, it has been reported that, in aiming for the realization of the ESPO pipeline project, the Russian government and Transneft are currently considering covering the aspects of the pipeline that are lacking in commercial terms by making transport costs cheaper through political decisions, thereby increasing the willingness of oil companies to invest in Eastern Siberia. 50

#### 3. When Will the ESPO Pipeline be Filled With Oil?

In July 2006, when the first G8 summit hosted by Russia was held in St Petersburg, Mr. Khristenko remarked at a press conference that the skepticism that had existed hitherto about whether enough crude oil to fill the ESPO pipeline could be secured before the first phase got up and running had been swept away. Furthermore, he even hinted at the possibility that the construction of the second phase would begin by 2015 and the full 80-million-ton volume would be supplied earlier than had been planned.<sup>51</sup> At the same time, when he held talks with Prime Minister Koizumi, with regard to the question of whether or not the pipeline would reach the Pacific coast, President Putin stated that the outlook was unclear and that it would depend on whether or not sufficient crude oil could be secured.<sup>52</sup> Was President Putin merely trying to throw Japan off balance? Or was he just speaking the truth?

#### 4. The Problem of the Quantity of Reserves of Crude Oil

In April 2002, the Russian government took the decision to make the quantity of the country's oil and natural gas reserves a state secret.<sup>53</sup> Today, many experts recognize that the reserves of hydrocarbon resources in

<sup>&</sup>lt;sup>45</sup> "Neftegazovyi kompleks Vostochnoi Sibiri i Dal'nego Vostoka: sostoianie, tendentsii razvitiia i perspektivy sotrudnichestva so stranami Aziatsko-Tikhookeanskogo regiona (ATP)", 26 April 2006, <a href="http://www.minprom.gov.ru/activity/energy/appearace/17">http://www.minprom.gov.ru/activity/energy/appearace/17</a>>.

<sup>&</sup>lt;sup>46</sup> Na vse chetype storony prostirayutsia segodnia neftegazovye interesy Rossii: Interv'yu Viktora Khristenko izdaniyu", *Rossiyskaia gazeta*. 22 February 2006.

<sup>&</sup>lt;sup>47</sup> Sergei Glazkov, "Eastern Pipeline Will Provide New Options", Russian Petroleum Investor, June-July 2006, p.21.

<sup>&</sup>lt;sup>48</sup> "O perspektivakh razvitiia i ispol'zovaniia system transportirovki uglevodorodnogo syr'ia i produktov ego pererabotki", 9 October 2006.

<sup>&</sup>lt;a href="http://www.minprom.gov.ru/activity/energy/appearance/22">http://www.minprom.gov.ru/activity/energy/appearance/22>.

<sup>&</sup>lt;sup>49</sup> "Vostochnyi tariff: "Transneft" pereraspredelit neft' mezhdu Evropoi i Aziei", *RusEnergy*, 6 September 2006.

<sup>&</sup>lt;sup>50</sup> "Duel': Zheleznodorozhniki nesut poteri v bitve za perevozki nefti", *RusEnergy*, 13 July 2006. With regard to the proposal to offer discounts on transport charges as a political decision, in order to promote eastward crude oil transport by pipeline, there is a severe conflict between Transneft and Russian Railways, which wants to secure an appropriate share for export by rail transport, including on export routes to China.

<sup>51 &</sup>quot;Vostochnyi tariff...

<sup>&</sup>lt;sup>52</sup> "Pacific Pipe Depends on Oil, Putin Warns", *The Moscow Times*, 17 June 2006.

<sup>&</sup>lt;sup>53</sup> So far has been reported to date, the Ministry of Natural Resources has a policy of recalculating and announcing reserves by 2009, on the basis of new criteria defining reserves, which were introduced in 2005 in order to bring them closer to international standards. "Sekrety na prodazhu: Pravitel'stvo planiruet sformirovat' rynok geologicheskoi informatsii", *RusEnergy*, 27 October 2006.

Eastern Russia, the development of which had previously been lagging behind, hold immense potential, but when it comes to proven reserves or recoverable reserves, assessments vary.

Russia's crude oil reserves as of the beginning of 2002, as announced the same year by the State Commission on Mineral Resources Reserves, totaled 18.2 billion tons in categories A+B+C1 (Russian standard confirmed reserves), with Eastern Siberia and the Far Eastern region holding 400 million tons and 500 million tons respectively (Table 1).<sup>54</sup> Incidentally, with regard to Russia's crude oil reserves, BP statistics (2006) put them at 74.4 billion barrels (10.2 billion tons, as of the end of 2005), while the Japan Petroleum Development Association estimate them at 127.338 billion barrels (as of the end of 2002).<sup>55</sup>

Table 1: Russian Crude Oil Reserves by Region and Category as of the Beginning of 2002 (1 billion tons)

	A+B+C1	C2
Western Siberia	12.2	6.4
Eastern Siberia	0.4	0.6
Northern Region	1.5	0.7
Urals & Volga Region	3.7	0.4
Far Eastern Region	0.5	0.3
Total	18.3	8.4

Source: State Reserves Committee

(Published in "Dobycha nefti pastet: Nadolgo li ee khvatit Rossii pri takikh tempakh?", RusEnergy, 11 May 2004)

Calculations by the Ministry of Natural Resources suggest that it is necessary to secure at least 10 billion tons in reserves, in order to achieve the crude oil production envisaged in the 2020 Energy Strategy. However, in Russia of late, there has been a declining trend in the ratio of secured new reserves to growth in production (reserve replacement rate) and, as of 2005, more than half of crude oil produced by Russian oil companies is gobbling up previously-discovered reserves and the increase in reserves through new geological surveys is not covering this. <sup>56</sup> The volume of crude oil production in Russia in 2005 was 470 million tons, but the increase in reserves was

285 million tons; in other words, the replacement rate was just 60%.<sup>57</sup> Valery Garipov, who held the post of Deputy Minister of Fuel and Energy between 1996 and 2001, has disclosed that the Russian state is losing its ability to undertake the rational control of crude oil, and that, on the basis of development to date, it cannot secure sufficient reserves and resources to achieve the planned annual production volume of 490-520 million tons set forth in the 2020 Energy Strategy.<sup>58</sup>

#### 5. Prospects for Crude Oil Production in Eastern Russia

The 2020 Energy Strategy forecasts that Russian crude oil production in the near future will reach 445-490 million tons by 2010 and 450-505 million tons by 2015. The Ministry of Economic Development and Trade's estimate is higher than the figures in this strategy, forecasting that oil production will reach 490-515 million tons by 2010, but with regard to the situation thereafter, it predicts that production will reach a maximum of 540 million tons.

As stated earlier, the construction of the ESPO pipeline is being promoted by the Russian government on the grounds that increasing production volumes in Eastern Siberia and the Far Eastern region is essential to ensuring the maintenance and future growth of crude oil production. Conversely, if Russia does not succeed in securing continued increases in the production of crude oil in these eastern regions and a comparable quantity of reserves, not only will it not be possible to ensure the profitability of the ESPO pipeline, but also Russia, which wants to expand its influence in the Asia-Pacific region using energy as a "weapon", will be unable to translate its national strategy into reality.

Amidst hopes that the basic increase in crude oil production will be achieved through development in the eastern regions, the Ministry of Economic Development and Trade forecasts that the volume of production in these regions will rise more than threefold from 23 million tons in 2006 to 74 million tons by 2015. At the same time, according to the Eastern Siberia and Sakha Republic Geological Survey Program (hereafter referred to as the Eastern Siberia Survey Program) adopted by the Ministry

<sup>&</sup>lt;sup>54</sup> "Dobycha neft pastet: Nadolgo li ee khavatit Rossii pri takikh tempakh, *RusEnergy*, 11 May 2004. According to the Chairman of the Federation Council's Committee on Natural Resources and Environment Protection, Viktor Orlov, if a coefficient of 0.66 is applied to the Russian evaluation of reserves of A+B+C1, they are more or less equivalent to the proven reserves of Western countries.

<sup>&</sup>lt;sup>55</sup> BP Statistical Review of World Energy (2006); Crude Oil Reserves of Major Countries and Their Annual Production (Japan Petroleum Development Association) [in Japanese].

<sup>&</sup>lt;sup>56</sup> "Dobycha nefti pastet: Nadolgo li ee khvatit Rossii pri takikh tempakh?".

<sup>&</sup>lt;sup>57</sup> Nevertheless, this was higher than the figures in the 40% range that had been recorded until the previous year. Irina Gaiduk, "Year 2005 Summary", *Russian Petroleum Investor*, March 2006, p.8.

<sup>&</sup>lt;sup>58</sup> *Ibid.* Unlike the quantity of reserves, the quantity of resources indicates the stage prior to commercialization. For further details, see Akira Sato, "Concerning the Definition of Russian Oil and Natural Gas Reserves", *Oil and Natural Gas Review*, vol.39, March 2005 [in Japanese]. For more on Russian domestic definitions of reserves, please also refer to "Katerogii zapasov i resursov uglevodorodov po ikh deistvuyushchei rossiiskoi klassifikatsii", *Kommersant*', 26 April 2005.

<sup>&</sup>lt;sup>59</sup> "Stroika v pustote: Pravitel'stvo konstatiruet narastayushchii izbytok truboprovodnych moshchnostei", *RusEnergy*, 13 October 2006.

<sup>60</sup> Ibid.

Table 2: Crude Oil (Including Condensate) Production Forecasts in Eastern Siberia and Far Eastern Russia towards 2030 (unit: 1 million tons)

	2004	2005	2010	2015	2020	2025	2030	
	Sa	akha Republi	с					
Srednebotuobin	0.01	0.02	0.81	2.13	2.17	2.17	1.75	
Talakan	0.20	0.30	1.60	5.21	5.21	5.11	4.51	
Chaiandin	0.00	0.00	0.10	0.95	2.12	2.12	2.12	
Verkhnevilyuchan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Srednevilyui	0.18	0.09	0.25	0.28	0.28	0.27	0.25	
Other deposits expected to be discovered	0.03	0.03	0.60	0.80	1.00	3.50	14.97	
Subtotal	0.4	0.4	3.4	9.4	10.8	13.2	23.6	
Irkutsk Oblast								
Kovykta	0.00	0.01	0.54	0.94	1.09	1.09	1.09	
Verkhnechon	0.00	0.00	0.81	6.94	9.34	9.34	8.84	
Dulismin	0.01	0.02	0.05	0.3	0.31	0.31	0.29	
Iaraktin	0.05	0.06	0.30	0.55	0.60	0.60	0.50	
Other deposits expected to be discovered	0.02	0.02	0.02	0.40	2.10	5.50	19.28	
Subtotal	0.1	0.1	1.9	9.1	13.4	16.8	30	
Krasnoy	arsk Krai (inc	luding Evenk	i Autonomou	ıs Okrug)				
Yurubcheno-Tokhom	0.04	0.06	4.07	14.38	21.42	21.43	21.43	
Kuyumbin	0.02	0.04	3.00	8.05	11.05	11.06	11.06	
Sobin	0.01	0.01	0.04	0.39	0.82	0.62	0.5	
Other deposits expected to be discovered	0.00	0.00	0.10	0.70	2.50	6.90	23.41	
Subtotal	0.1	0.1	7.2	23.5	35.8	40	56.4	
Eastern Siberia & Sakha Republic								
	0.6	0.6	12.5	42.0	60.0	70.0	110.0	
	Sa	khalin Oblas	st					
Sakhalin I (Lunsk, Pil'tun-Astokh)	1.6	1.7	8.5	8.5	8.5	8.1	7.3	
Sakhalin II (Chaivo, Odoptu, Arktun-Dagi)	0	0.1	12.5	12.5	12.5	12.5	12.1	
Other deposits expected to be discovered	2.1	2.2	2.0	4.0	9.0	12.0	15.6	
Subtotal	3.7	4.0	23.0	25.0	30.0	32.6	35.0	
Eastern Siberia & the Far Eastern Region								
Total	4.3	4.6	35.5	67.0	90.0	102.6	145.0	

(Institute of Oil and Gas Geology (IGNG) of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk)

Source: A. Korzhubaev, "Perspektivy dobychi nefti i gaza v Vostochnoi Sibiri i na Dal'nem Vostoke Rossii", Problemy Dal'nego Vostoka, No.6, 2005, p.51.

of Natural Resources in 2005, the quantity of crude oil produced in Eastern Siberia is estimated to reach 30 million tons in 2012-2013, rising to 80 million tons after 2020 (around 2025). 61

According to estimates by the Novosibirsk-based Institute of Oil and Gas Geology (IGNG) of the Siberian Branch of the Russian Academy of Sciences, crude oil production in the eastern regions is forecast to rise to 35.5 million tons in 2010, 67 million tons in 2015, 90 million tons in 2020 and 145 million tons in 2030 (Table 2). In June 2006, Rosneft President Sergei Bogdanchikov asserted that, according to his company's estimates, with the reserves in Eastern Siberia alone, it will be possible to provide the quantity of oil to be transported that is necessary for not only the first phase of the ESPO pipeline project, but also the whole of the project, including the second phase; with regard to the first phase, he expressed confidence that the company would be able to supply 70% of the volume of oil to be transported from the Vankor and Verkhnechon oilfields. 62 In November 2006, at a Japan-Russia symposium held in Tokyo, Deputy Director of Rosneft's Strategic and Overseas Projects Department Valerii Rusakov revealed that the company planned to supply 60% of crude oil when the ESPO pipeline came online, with half of this being dispatched from the Vankor oilfield.63

Due to the emergence of the new extended pipeline route proposal, the pipeline will pass closer to promising

<sup>61 &</sup>quot;Trudnaia neft' Vostochnoi Sibiri: Pereiti ne nee polnost'yu VSTO cmozhet posle 2025 goda", RusEnergy, 8 September 2006. The 2020 Energy Strategy expresses the expectation that production in Eastern Siberia and the Sakha Republic alone will reach 50-80 million tons by 2020, under the moderate and optimistic scenarios, respectively.

<sup>62 &</sup>quot;Sergei Bogdanchikov, "Tema priobreteniia 'yuganskneftegaza' zakryta", Kommersant', 14 June 2006.

<sup>63 &</sup>quot;Rosneft' zapolnit Vostochnyi nefteprovod na 60%",

<sup>&</sup>lt; http://www.vstoneft.ru/news.php?number=195>. Mr. Bogdanchikov declared that the volume of production from the Vankor oilfield group would reach 43 million tons by 2015.

oilfields than it would have under previous plans and the distance that will have to be covered by feeder lines linking the pipeline constructed by Transneft with individual oilfields will be reduced, so the burden of construction costs on each company will be cut. However, as stated above, there are major variations in the prospects for future oil production as envisaged by each ministry and research institute, so it is necessary to acknowledge once more that this suggests that there are considerable question marks over the development of natural resources in the eastern regions.

According to reports in the Russian national daily Kommersant' published in November 2005, when the Ministry of Industry and Energy published the draft work schedule for the first phase of the ESPO pipeline project (in other words, at the stage before the new extended pipeline route proposal, which was published in the summer of the following year), under the plan in which production will finally begin by the time the first phase goes online in 2008, Rosneft will only produce about 3 million tons annually from the Vankor oilfield, about 1 million tons a year will be produced from the Verkhnechon oilfield, which is being developed by Rosneft in partnership with TNK-BP, and Surgutneftegaz will produce about 4-6 million tons annually from the Talakan oilfield. Transneft Vice-President Sergey Grigoriev has stated that the quantity of oil transported from Eastern Siberian oilfields when the ESPO pipeline goes online will be 6 million tons, so there will be no option available other than to depend on oil transported from Western Siberia to make up the shortfall.<sup>64</sup>

According to geology experts from the Ministry of Natural Resources, the sources of supply to the ESPO pipeline that are being considered include the Talakan oilfield, the Verkhnechon oilfield, the Yurubcheno-Tokhom oilfield zone, the Srednebotuobin oilfield, and the oil deposit of the Chaiandin gas field; the transport of oil from the Vankor oilfield via Western Siberia is also envisaged. In addition, the maximum oil transport capacities in the period 2012-2015 are anticipated to be 6 million tons from Talakan, 10 million tons from Verkhnechon, and a total of 15 million tons from Yurubcheno and Tokhom combined. 65

In September 2006, Sergei Fedorov, Director of the Department for Government Policy and Regulation on the Use of Energy Resources at the Ministry of Natural Resources, asserted that realizing crude oil production of 30 million tons annually in Eastern Siberia before the

first phase of the ESPO pipeline goes online in 2008 will be absolutely impossible. 66 According to him, while the reserves secured in Eastern Siberia by the beginning of 2006 totaled just 5.8 million tons, which was no more than 6.4% of the 90.7 million tons planned in the *Eastern Siberia Survey Program*, in light of all the conditions, the only hope is for oil to be transported from Western Siberia in the long term, in the second phase of the ESPO pipeline vision, with consideration being given to appropriate transport charges from a political perspective. 67 There are also forecasts that it will be necessary to supply at least 30 million tons to the ESPO pipeline from Western Siberia until 2030. 68

- 6. Oilfield Development and the Investment Climate
- (1) Estimates of Development Costs and the Investment Situation

In February 2005, Deputy Minister of Natural Resources Anatoly Temkin reported at a State Duma hearing that, if relying on existing reserves in Eastern Siberia and the Far Eastern region, it would be possible to continue producing 30 million tons annually up to 2030, but that if this figure went up to 50 million tons annually, it would be necessary to upgrade the portion positioned as "resources" to the status of "reserves" and begin developing them by as soon as 2010-2012. 69

Speaking to Parliament in April 2006, Deputy Minister of Industry and Energy Andrei Dementiev stated that 40-50% of the crude oil lying beneath Russia was located in the eastern regions, but he did not mention any figures as a breakdown (proven, estimated, projected), so there are still question marks over this. 70 Due to the high development costs, including infrastructure that has not yet been put in place, the eastern regions have not been included in fullscale exploration and exploratory drilling, but today, at last, they are being placed at the heard of Russia's national energy strategy. According to IGNG estimates, whereas the average cost required to increase reserves by a ton is \$2.5 in Western Siberia, it is \$4-5.6 in Eastern Siberia.<sup>71</sup> It is predicted that the cost of developing oil and natural gas in Eastern Siberia and the Sakha Republic will be \$67-87 billion by 2030.<sup>72</sup>

According to a 2004 assessment by the Ministry of Natural Resources, the geological surveys required to transport 30 million tons a year via the ESPO pipeline would cost \$8 billion, rising to \$19 billion in the case of 50 million tons and about \$40 billion in the case of 80 million

<sup>64 &</sup>quot;《Transneft'》 forsirovala Baikal", Kommersant', 11 November 2005.

<sup>65 &</sup>quot;Vostochnyi tariff...

<sup>66 &</sup>quot;Trudnaia neft' Vostochnoi Sibiri..."

<sup>67 &</sup>quot;Vostochnyi tariff...

<sup>68 &</sup>quot;Eastern Pipeline Will Provide..., p.25.

<sup>&</sup>lt;sup>69</sup> "Doklad Zamestitelia Ministra prirodnyx resursov RF A. A. Temkina "O programme geologicheskikh poiskov i razvedki mestorozhdenii nefti i gaza v Vostochnoi Sibiri ii na Dal'nem Vostoke Rossii", <a href="http://www.mnr.gov.ru/part/?act=more&id=110&pid=351">http://www.mnr.gov.ru/part/?act=more&id=110&pid=351</a>.

<sup>70 &</sup>quot;Neftegazovyi kompleks Vostochnoi Sibiri...

<sup>&</sup>lt;sup>71</sup> "Tiazhelye poteri: Syr'evaia baza neftedobychi imeet malo shansov na rost v obozrimom budushchem", *RusEnergy*, 4 April 2006.

<sup>&</sup>lt;sup>72</sup> "Tsena Nakhodki: Truboprovod iz Sibiri k Tikhomu okeanu mozhet byt' postroen, no lish' za schet mnogomilliardnykh zatrat ne geologorazvedku", *RusEnergy*, 5 December 2003.

tons. However, for instance, in the two years to 2004, the government and oil companies only spent a few hundred million dollars. 73 The fact that Russian oil companies only spend about one-third of the amount spent by foreign companies on exploration and exploratory drilling was acknowledged as a problem by experts at the Baikal Economic Forum held in Irkutsk in September 2006. If we look at the amount invested per ton of oil extracted, as of 2002, the figure was \$16.6 in Russia, whereas it was \$48 in other countries. In the 2020 Energy Strategy, the amount of annual investment required in Russia's oil and gas sector is estimated at \$22-25 billion, but actual investment is no more than \$10 billion and some experts fear that, if the current situation continues, there is a possibility that Russia's oil reserves will fall to 65% of the 1991 level by 2020.74

#### (2) The Introduction of Tax Holidays

In April 2006, the Ministry of Economic Development and Trade submitted to the government a bill that amended the tax code and prescribed tax holidays and waivers of mineral resource extraction tax for new development projects on green-field sites, in order to expedite the development of oilfields in Eastern Siberia. The bill was passed in July after readings by the Duma and the Federation Council of Russia, and was signed by President Putin. This revised law focuses on Eastern Siberian oilfields, particularly those located in Irkutsk Oblast, Krasnoyarsk Krai and the Sakha Republic (the latter is actually located in the Far Eastern Federal District) that are expected to supply oil to the ESPO pipeline and for which licenses were issued before this law entered into force. The preferential measures last for up to 10 years if production licenses have been issued, and up to 15 years if both exploration and production licenses have been issued; they will lapse once cumulative production reaches 25 million tons.<sup>75</sup> Initially, it also targeted Timan-Pechora and offshore areas, but in the end only Eastern Siberia was selected.<sup>76</sup> According to Minister of Economic Development and Trade German Gref, the government expects the volume of crude oil produced annually in Eastern Siberia to increase from 1 million tons at present to 45 million tons by 2015.<sup>77</sup>

#### (3) The Introduction of the Concept of Strategic Deposits

The Putin administration has positioned energy resources such as crude oil and,natural gas, as well as other sub-soil resources, as strategic materials that determine the fate of the nation, and is gradually eliminating the influence of foreign companies, which began to strengthen in the 1990s. In May 2005, President Putin instructed the government to formulate a bill limiting foreign investment in companies linked with national security, and the Ministry of Natural Resources has been making preparations for this.<sup>78</sup> In October of the same year, the Ministry of Natural Resources formulated a bill as an amendment to the Law on Use of Sub-Soil Resources (enacted in 1992), defining oilfields with at least 150 million tons of reserves, gas fields with at least 1 trillion m<sup>3</sup> of reserves, copper deposits of at least 10 million tons and gold deposits of at least 700 tons as "strategic deposits", and stipulating the condition that the share of stock held by foreigners should be less than 50% (in other words, it was mandatory for Russians to hold 50% +1 share). However, on the grounds that the definition of "strategic deposits" did not adequately protect national interests, the bill was rejected at the request of the Presidential Administration, immediately before its first reading at the State Duma. 79

In May 2006, when President Putin held a meeting with Minister of Natural Resources Yuri Trutnev, he instructed the minister to reconsider the "strategic deposits" criteria.80 In June of the same year, the minister revealed a new bill, in which the deposit reserves targeted by restrictions on entry by foreign investors (as stated above) were set at 70 million tons or more in the case of oilfields, at least 50 billion m<sup>3</sup> in the case of natural gas fields, at least 500,000 tons in the case of copper deposits and at least 50 tons in the case of gold deposits. According to Mr. Trutney, based on this new definition, while around 30 oilfields and 40 natural gas fields across Russia will fall into the "strategic deposit" category, an appropriate framework with a focus on the entry of foreign capital into Eastern Siberian "strategic deposits" that will be supplied to the ESPO pipeline is still being developed, in cooperation with the Federal Agency for Subsoil Use.81

While some are of the opinion that the introduction of the definition of "strategic deposits" will work to the

<sup>&</sup>lt;sup>73</sup> "Povtorenie proidennogo: Novaia trassa VSTO byla pazpabotana v 2004g., no otvergnuta "Transneft'yu"", *RusEnergy*, 9 June 2006.

<sup>&</sup>lt;sup>74</sup> "Uchenye: Rossiiskie neftekompanii vkladyvayut slishkom malo sredstv v razvedku i dobyshu nefti", *Neftegazovaia Vertikal*', 13 September 2006.

<sup>&</sup>lt;sup>75</sup> "Eastern Pipeline Will...", p.22.

<sup>&</sup>lt;sup>76</sup> Vladimir Baidashin, "Surgutneftegaz Plans for Eastern Russia", Russian Petroleum Investor, September 2006.

<sup>&</sup>lt;sup>77</sup> "Otlozhennye kanikuly: Pravitel'stvo Rossii reshilo predostavit' l'goty po nalogu na dobychu poleznykh iskopamykh (NDPI) neftianym kompaniiam, rabotayushchim v Vostochnoi Sibiri", *Ekspert-Sibir*', 15 May 2006. With regard to the view that "Tax Holiday" measures will not necessarily promote oilfield development, see "Khoteli, kak luchshe: l'goty po NDPI vriad li pomogut bystro napolnit' vostochnyi nefteprovod", *RusEnergy*, 15 June 2006.

<sup>&</sup>lt;sup>78</sup> "Strategicheskii spor: FSB, FAC i administratsiia prezidenta dumayut, kak ogranichit' inostrantsev", *Vedomosti*, 24 October 2006.

<sup>&</sup>lt;sup>79</sup> "Trutnev osortiroval mestorozhdeniia", *Vedomosti*, 18 October 2005; "Strategicheskii manevr", *Vedomosti*, 3 November 2005.

<sup>80 &</sup>quot;Inostrantsam khodu net: Dobycha nefti i gaza - delo rossiiskikh kompanii", Vedomosti, 6 June 2006.

<sup>81</sup> Interfax, 19 June 2006.

advantage of large state-owned companies such as Rosneft and Gazprom when aiming to introduce foreign capital, 82 the Federal Security Service (FSB), which most fears the loss of Russia's national security and interests has apparently put forward the opinion that the conditions for foreign investors, regarding which companies can participate in "strategic deposits", should be made even stricter. 83

### 7. Problems When Considering Future Japan-Russia Energy Relations

#### (1) The Bilateral Relationship is Out of Alignment

The first part of this article discussed the vicissitudes surrounding the selection of the ESPO pipeline route, while the second part has focused on the various problems concerning the securing of crude oil reserves and production volumes in order to supply oil to the ESPO pipeline. What has emerged so far can be broadly classified as follows:

- a) Russia, which is experiencing an ongoing economic boom supported by the high price of crude oil, is putting its back into developing energy in the eastern regions at an accelerated pace.
- b) While the Russian leadership is recognizing anew the geopolitical importance of the eastern regions, it is trying to reinforce its presence in the Asia-Pacific region by accelerating energy development in the eastern regions.
- c) While Russia is gaining a stronger awareness that energy resources are strategic commodities, it is trying to eliminate foreign influence on their development, as far as possible.
- d) Given that conflicts of interests between various stakeholders are intensifying, the scale and frameworks are continuing to become more ambiguous with regard to the potential for joint development with foreign companies.

If we coolly analyze the foregoing situation within Russia, apart from the Sakhalin projects, which began in the 1990s, it has to be said that the scope for cooperation with Russia by other countries in energy development in the eastern regions has been extremely limited until now. It goes without saying that Russia, which - as of November 2006 - boasts more than \$270 billion of foreign currency reserves (the third-highest level in the world), against the background of the stabilization of high oil and natural gas prices in world markets, basically no longer has any need of financial "backing" from foreign countries.

With regard to recent relations between Japan and Russia, those on the Japanese side who are involved with Russia are pointing out with one accord that Moscow's interest in Japan, which has always been hesitant about large-scale investment in Russia's energy sector (apart from in Sakhalin), is waning. Simultaneously, however, if one considers the situation from this perspective, it could be the

case that Russia, which accounts for less than 1% of Japan's foreign trade, is of minimal importance for Japan. In light of the series of rows over Sakhalin II since the summer of 2006, it should come as no surprise if an increasing number of voices within Japan advocate caution with regard to energy investment in Russia.

Despite the fact that Russian and Japanese interest in each other is fading at present, should we not perhaps reconsider the significance that the ESPO pipeline project could have for energy markets in Northeast Asia and, by extension, the rest of the world?

While Russia is the world's second-largest oil-producing nation (and the largest natural gas producer), Japan's energy self-sufficiency rate is extremely low at 4% (rising only to 16% even if nuclear power is included), so it is dependent on imports for almost all of its crude oil supplies. If we focus solely on this point, even an amateur observer can see that Japan and Russia have a highly complementary relationship with regard to energy demand and supply.

However, in fact, with regard to energy cooperation between Japan and Russia, the Japan-Russia Action Plan (January 2003) and the Detailed Agreement Concerning Cooperation in Individual Energy Fields (November 2005) have not developed in the direction originally hoped. In relation to this, Russian criticism of Japan (including media reports in general) is focused exclusively on the stereotypical issue that, "Japan, which should be desperate for oil, will not undertake energy cooperation with Russia for political reasons, as it is obsessed with the Northern Territories issue". Are such assertions really on the mark? The biggest reason why Japanese financial cooperation in the ESPO pipeline project has not progressed smoothly is that Russia has been laggardly in upgrading the domestic investment environment, as has repeatedly emerged throughout this article. Today, the country that has a strong tendency to link business and economic problems to political issues is actually Russia rather than Japan.

Unrealistic expectations with regard to partners can easily result in undue disappointment when they fail to be translated into reality. True international cooperation involves discussing all matters head-on, with regard to what can and cannot be done, and ensuring a commensurate apportionment of responsibilities. It is necessary for us to contemplate the physical limitations that cannot be avoided if we venture to promote energy cooperation, and continue to strive to find positive answers about the scope for future cooperation.

(2) The Delusion That "'Middle East Risk' = Japan Desperately Wants Russian Oil"

Unlike Europe, Japan has fulfilled its energy demand without effectively being dependent on energy supplies from Russia. Even assuming that Russia does not become

<sup>82 &</sup>quot;Lychshe nyneshnego, khuzhe proshlogo: Posledniaia versiia zakona o nedrakh - v pol'zu "Gazproma" i "Rosnefti", *Vedomosti*, 6 July 2006.

<sup>83 &</sup>quot;Strategicheskii spor: FSB, FAC i administratsia dumayut, kak ogranichit' inostrantsev".

a supplier of energy to Japan in the future, it is virtually impossible to imagine that this would become a factor that threatened Japan's energy security.

Certainly, fears about the country's continued excessive reliance on the Middle East as a source of crude oil supplies are persistent even within Japan, and the dispersal and diversification of actual sources of energy supply is a major proposition in Japan's energy policy. On the Russian side as well, alleviating Middle East (geopolitical) risk is the cliché trotted out when calling for investment in its energy sector. However, amidst a situation in which Russia has recently been asserting the "validity" of its resource nationalism, while positioning energy resources as a national strategic "weapon", and has been trying to reinforce its geopolitical position within Northeast Asia, it is not necessarily the case that reducing Japan's Middle Eastern dependence and increasing its dependence on Russia by the same amount would lead directly to the various geopolitical risks relating to Japan's energy security being overcome.

Furthermore, there are good reasons why Japan is maintaining a high level of dependence on the Middle East as a source of crude oil supplies (about 90% at present) and why, although its dependence on the Middle East actually decreased in the aftermath of the second oil crisis, it has risen once more since the mid-1980s. If businesspeople decide that it will not be profitable, they will not invest in new projects. Naturally, business involving the Middle East is continuing in spite of the chronic geopolitical risks inherent in that region precisely because it is deemed possible to make a profit. Japan has sufficient world-class oil refining facilities and the fact is that, although oil from the Middle East is of poor quality, as long as it can be purchased cheaply, it is often profitable in business terms, even when the cost of shipping it by sea in tankers over long distances is taken into account. Ironically, because crude oil from Eastern Siberia and Sakhalin is generally of high quality because of its low sulfur content, one cannot necessarily say that it is competitive in terms of price, when considering its entry into the Japanese market, so it is something of an unknown quantity.

#### (3) The Problem of Eliminating the "Asian Premium"

One of the main reasons why Japan became interested in Russian crude oil was the potential for eliminating the so-called "Asian Premium" on crude oil produced in the Middle East. In general, Asian countries are said to pay a premium of about \$1 per barrel on crude oil purchased from the Middle East, over and above the price paid by European countries. Japan would like competition between supply sources and markets to be realized with the construction of the ESPO pipeline. However, as seen in section II-2 of this article, Russian oil companies are currently aiming to make a profit in the form of the "Asian Premium" by exporting to the east rather than the west. If the "Asian Premium" is not eliminated, the appeal of Russian crude oil will diminish accordingly.

#### (4) Japanese Demand is About to Peak

Japan has learned lessons from the two oil crises and has developed world-class energy conservation technologies. Today, the country continues to make further efforts to develop measures to tackle global warming. In addition, the rate of population growth has already begun to decline. According to forecasts by the Ministry of Economy, Trade and Industry, Japan's primary energy demand will peak in 2014 - 2026. In other words, this will more or less coincide with the period when Russia will increasingly be trying to accelerate energy development in its eastern regions. Furthermore, even if Japan experiences only a gradual decline in oil demand, it is not going to increase again. The question of the share of Russian crude oil and oil products accounted for by the Japanese market in the future will depend on the previously mentioned issues of price and quality.

#### 8. The Issue of the "China Factor"

In analyzing the course of the ESPO pipeline project and the issue of energy security in Northeast Asia, energy relations between China and Russia are a major factor. It has been pointed out that, compared with the political aspects, the economic aspects of Sino-Russian relations are weak, but today, Moscow and Beijing are rapidly developing more profound economic relationships, centered on the reinforcement of cooperative relationships in the field of energy. A highly complementary relationship exists in theory between Russia, which wants to increase the amount of oil and natural gas that it supplies to the Asia-Pacific region, and China, where there is surging energy demand. However, Russia has major geopolitical concerns about its relationship with China, and the energy partnership between the two countries is certainly not progressing smoothly. I will not discuss this problem in detail in this article, due to space constraints, but I would like to refer readers to my article entitled Sino-Russian Strategic Partnership: The Dilemma of Cooperation and Mutual Distrust (due to be published shortly).

## Part III: The ESPO Pipeline Project and the "New National Energy Strategy": The Implications for Northeast Asian Energy Cooperation

In May 2006, the Japanese government published its "New National Energy Strategy" (hereafter referred to as the "NNES"). Making an active contribution to overcoming Asian and global energy problems was set forth as a strategic objective in this document. In Northeast Asia, Russia and China - i.e. a major energy producer and a major energy consumer - exist side-by-side and the stability of world energy markets in the near future will be significantly affected by the type of energy cooperation framework that can be built in this region. How should Japan approach the Russian ESPO pipeline project in order to make an active contribution to overcoming international energy problems?

One of the things that surprised domestic and overseas energy experts about the NNES was that the comprehensive strategy on securing resources set forth the target of increasing the oil volume ratio in exploration and development by Japanese companies from the current 15% or so to around 40% by 2030. To the best of this author's knowledge, there were no concrete grounds for this figure. As this numerical target was set on the basis of a judgment taken at a time when "international competition to secure resources is intensifying", it cannot be denied that it is

giving rise to unnecessary misunderstanding and paranoia *vis-à-vis* Japan on the part of other countries, irrespective of the practicality of this target. On the other hand, if Japan does not secure another 25% in rights to independent oil exploration and development over the next 20 years or so, might not its energy security be weakened? With Japan's energy demand about to peak before long, how much risk is the government willing to take as a single country, with regard to the upstream sectors of which countries and regions? And is it prepared to invest the vast sums of money involved?<sup>84</sup>

In the NNES, the ESPO pipeline is talked about as a noteworthy project that is one of the options for diversifying the supply sources of Japan's oil imports. However, it would be preferable for us to reconsider the nature of further international cooperation after giving sufficient consideration not only to the potential of the ESPO project, but also to the uncertainties discussed in this paper. In other words, this author does not believe that the increase in the share of oil developed independently by Japan and the possibility of participating in the ESPO pipeline project should be considered in connection with each other in a shortsighted way. It is not only that this is difficult for Japan to achieve, but, on the contrary, focusing on negotiations on a bilateral basis, rather than multilateral negotiations within Northeast Asia, will end up supporting Russia's conventional strategy of trying to play Japan off against China.85

However, this author believes that the ESPO pipeline project could become a big stepping stone towards multilateral cooperation, rather than being a source of conflict in Northeast Asia. Promoting energy development in Eastern Russia and creating new flows of stable, long-term supplies of crude oil to world markets corresponds to the lofty ideal of "making an active contribution to overcoming Asian and global energy problems" that was cited in the NNES. In order to do this, it would be preferable to share the burden of investment risk among a number of countries by internationalizing all the associated problems through the implementation of this project.

As can be gathered from the analysis in this article, it is impossible to avoid countless uncertainties and the concomitant large-scale investment risks in realizing the ESPO pipeline project. Regardless of how much financial leeway has recently emerged in Russian oil companies due

to the influx of abundant oil money, is it really possible for Russian companies alone to conduct investment that covers all risks?86 If this is indeed possible, Russia as a major power would bear all the costs of developing greenfield sites by itself, which would be the best option, and there would be nothing for other countries to worry about. However, energy development in the eastern regions is a fight against the clock for Russia. It does not even have another 30-50 years left to implement preparations in order to cover the decrease in production in Western Siberia and secure a certain level of production and reserves, while also ensuring stable exports. Certainly, in Russia today, where resource nationalism is growing, there are interests that actually suffer from heightened sensitivity concerning the entry of foreign countries into energy development in the eastern regions. As explained here, some may scoff at the idea of trying to "internationalize" the problem of realizing the ESPO pipeline project, seeing it as none of their business. In such situations, we should reply as follows:

"Even if the realization of the ESPO pipeline project falls behind or suffers certain setbacks, it will not ultimately have an adverse effect on Japan's national interests and we will have no problems. Japan's energy security has already been established by other means. However, Japan could take on an appropriate share of its responsibility as a country that has world-class energy technology and a certain degree of financial wherewithal, if there was regional consensus that this, by creating stable energy flows, would be in the interests of Northeast Asia as a whole and, by extension, global energy markets.

After former Prime Minister Jun'ichiro Koizumi visited Russia, the central features of Japan's energy diplomacy with Russia were 1) encouraging Russia to build a pipeline to the Pacific coast and 2) getting Russia to commit to giving priority to starting construction work on the Pacific route if it decided to build a pipeline from Eastern Siberia to China as well. So far, the second has not been achieved, so there have been press reports that suggest that Japan's recent energy diplomacy with Russia has been a failure. However, in my view, Japan's posture to date has been a great, if unintentional, success. To be more specific, Russia used to rebuke Japan for maintaining a cautious attitude, saying that "Tokyo is hesitant about making a financial commitment", and it has recently begun to assert that "We are no longer interested in Japan". However, first

<sup>&</sup>lt;sup>84</sup> Naturally, on the international stage, there is often a strong element of "word games" involved and it cannot be denied that there are aspects with regard to which a certain degree of "bluff" is required. However, with regard to this issue, when considering why 40% is necessary by 2030 in order to determine the overall national interest, including economic profitability, those involved should be held accountable, including with regard to its practicality. If it was no more than "bluff", then what were they trying to achieve as a result, in the name of the national interest? This author believes that some kind of reason is necessary.

<sup>&</sup>lt;sup>85</sup> If Russia uses energy resources as a weapon and adopts a position of trying to increase its geopolitical presence in Northeast Asia while fanning the flames of competition between Japan and China, it will not be feasible. For further details, see my paper "Can Russia Become a "Regional Power" in Northeast Asia?: Implications from Contemporary Energy Relations with China and Japan", Center for East Asian Studies, Monterey Institute of International Studies <a href="http://gsti.miis.edu/CEAS-PUB/2006\_Itoh.pdf">http://gsti.miis.edu/CEAS-PUB/2006\_Itoh.pdf</a>>.

<sup>&</sup>lt;sup>86</sup> Transneft President Semyon Vainshtok has declared that the company has already met its financial target for pipeline construction, but the cost of constructing the pipeline itself is only one part of the ESPO pipeline project as a whole, which also includes oilfield development.

of all, the reason why Russia wants to lay a pipeline to the Pacific has nothing to do with Japanese wishes; rather, it is Russia that has opted for a national policy focused on the objective of securing energy markets in the Asia-Pacific region. Secondly, Russia did not (could not) commit to making the commencement of work on this route a priority, but that meant that Japan did not need to unilaterally invest risk money while the Russian investment climate (the issue of reserves and the selection of investment schemes, etc.) was uncertain.

At this point in time, it is not possible to predict when the second phase of the ESPO pipeline will commence and be completed. Let us assume that things go according to Russia's initial wishes and it succeeds in transporting 80 million tons of oil to the Pacific coast each year. Most experts predict that the majority (possibly even in excess of 60%) of the oil that reaches the Pacific coast (this may include not only crude oil, but also oil products) will, in any case, be shipped to China by sea. Let us then say that all of the 30 million tons per year that is the oil transport target for the first phase is shipped to China. If this is the case, then there is a strong possibility that by the time the second phase is completed, rough calculations suggest that as much as approximately 70% of the oil will be being exported to China. In light of this, one can see that there are grounds for calling on China to take on an appropriate degree of investment risk as well, although this assumes that Russia does not fall back on resource nationalism and does not intensify its stance of completely excluding foreign capital.

Will those who came up with the aforementioned figure of 40% for independently developed oil nevertheless continue to emphasize the settlement of the ESPO pipeline issue by means of bilateral negotiations between Japan and Russia, to the degree that Japan alone decides to stick its neck out with regard to the "excessive" investment risk? When President Putin held a meeting with former Prime Minister Koizumi in July 2006, he announced a policy of conducting the construction of the ESPO pipeline on a commercial basis, without the provision of guarantees by the government.<sup>87</sup> Ironically, this is what Japan should have taken the initiative in stating itself, and all it has to do is hope that Russia continues with its stated policy. In June 2006, when Russia hosted the G8 summit for the first time, the opacity of Russia's data concerning such matters as energy reserves was pointed out by other members and it made a public commitment to remedying this situation. The problem of energy security was a theme that Russia had selected itself, as the host country. Let us hope that it will fulfill its official promise in the near future.

The question of how many new oilfields will be

discovered in Eastern Russia and when the stable supply of oil to international markets will be achieved could have a major impact - both tangible and intangible - on the global energy demand and supply structure in the near future. Japan and China are not the only countries with a growing interest in energy development in Eastern Russia. Countries including the ROK and India are also biding their time. If Russia really wants to rush ahead with the development of this region and it has the courage and confidence to behave like a "responsible energy power", it should hold the line against the "resource nationalism" to which small and medium-sized countries such as Nigeria and Venezuela are driven to resort; moreover, it should put forward a proposal for a fair and impartial investment framework, without fearing the entry of foreign capital, and be proactive in calling for the establishment of a multilateral cooperation scheme that would promote energy development in the eastern regions. For Russia itself, diversifying the countries that invest in these regions of high geopolitical importance should be a good plan, strategically speaking, in the sense that no specific country will have excessive influence. However, if, in doing so, Russia resorts to the traditional "divide and rule" mentality of power politics, it will end up delaying the progress of the ESPO pipeline project as a whole. In aiming to realize this project as soon as possible, Russia, in view of the possibility of forming a new international consortium with multinational participation, should understand and welcome cooperation among consumer countries as something that will ultimately secure its own national interests in the future.

In November 2006, the International Energy Agency (IEA) published its "World Energy Outlook 2006", which contained the forecast that world energy demand would increase by 53% by 2030, against the background of sharp increases in demand in China and India.88 The "Asia/World Energy Outlook 2006", published in September of the same year by the Institute of Energy Economics, Japan, estimated that China and India would account for about a quarter of worldwide primary energy consumption by 2030, as well as accounting for about 40% of the global increase in energy consumption (and about 40% of the increase in oil consumption).89 As Russia strives to realize the ESPO pipeline project, Japan could well achieve the Asian energy cooperation strategy set forth in the NNES, depending on the manner of its involvement. A good opportunity is on its way for Japan to publicize the fact that it has the ability to put into practice an approach to "resource diplomacy" that will inspire gratitude in other countries, rather than wariness.

<sup>&</sup>lt;sup>87</sup> "Pacific Pipe Depends on Oil...

<sup>88 &</sup>lt;a href="http://www.iea.org/Textbase/press/pressdetail.asp?PRESS\_REL\_ID=187">http://www.iea.org/Textbase/press/pressdetail.asp?PRESS\_REL\_ID=187</a>.

<sup>89 &</sup>lt;a href="http://eneken.ieej.or.jp/data/pdf/060921kito\_ymorita.html">http://eneken.ieej.or.jp/data/pdf/060921kito\_ymorita.html</a> [in Japanese].