

# Energy Policy as a Factor of Regional Cooperation in Northeast Asia

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## 要 旨

著者はこれまで北東アジア(NEA)のエネルギー協力が統合的効果を生み出すのではな  
かろうかと考えて研究してきたが本論文でも引き続きそんなような問題意識に基づい  
て、北東アジアの地域協力を取り上げる。ただしエネルギー協力が共同体の形成に直接  
繋がると主張するわけではない。むしろ、地域がエネルギー協力のプロセスを通じてよ  
り緊密に統合されたシステムを当然形成すると想定している。

国際的エネルギー関係においては政府(国家)が主役であるという仮定に基づいて、本  
論文は国際協力の重大な要因として北東アジア各国におけるエネルギー政策を考察す  
る。本論文は次の問題を取り上げている。NEA 各国の政府のエネルギー協力政策は一体  
どんな決定要因で説明されるのか、どんな政策手段が実際に実施されているのか、そし  
て、その政策がどの程度NEA地域パートナーとの協力を志向しているのか。以上の分  
析に基づき、論文は北東アジアにおける多国間協力の展望に関する見方を提示する。

**Keywords: energy policy, energy cooperation, Northeast Asia**

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## **Introduction**

It is habitually lamented over sluggish progression in Northeast Asian regionalism. For the most part, the governments are seen responsible for such poor performance. In her papers, the author has been advocating the idea that it is the energy sector with its multifaceted ties that is of potential to generate an impetus for a more solid intra-regional economic cooperation.

Speaking about energy cooperation in Northeast Asia (NEA), its spatial configuration is clear. Among the Northeast Asian countries (NEAs), Russia is all but sole energy exporter with the rest countries in the region being importers, yet of different scale. Indeed, despite Mongolia touts itself as a regional carbons supplier, objectively its resources are not of a scope comparable to that of Russia or somewhat sufficient to meet bulging regional demand. China's riches also cannot be counted at as they are immensely needed domestically. In other words, Russia is set to play an active role in quenching the NEA's energy thirst.

For the matter of cooperation, a certain degree of convergence between the states' energy strategies is absolutely indispensable. Yet, in the NEA context there is no salient move towards partnership embracing all regional economies. An upsurge in censuring Russia's great power manners formed general perception of Russia as entirely self-centred energy exporter that aggressively pursues only its own interests. This undoubtedly added to the NEAs' anxiety on the account of Russia's reliability and held NEAs back from spinning energy cooperation with the country. Meanwhile, a spate of changes over the past few years has already resulted in dotted signals of brewing activity in the sector which prove feasibility of intra-regional energy partnership in NEA. Thus, conception is brought to the fore anew.

Interestingly, that negative perception more often overwhelms the US experts' analyses<sup>1</sup>, but does not dominate the views of European specialists.<sup>2</sup> Perhaps, the role that Russia traditionally plays as Europe's major energy supplier explains a somewhat more comprehensive consideration of rationales that underpin Russian energy policy.<sup>3</sup>

Partially accepting criticism about Russian external energy policy, the author tends to see the evidences that it is getting more transparent. It is by no means a claim that Russia's energy policy is changing to the form that is easier for foreign partners. Rather, Russian energy policy is gradually turning into a more independent pattern which is being defined by a complex interplay between the nation's geo-political considerations and geo-economic interests. While leveraging these two sets, Russia has eventually determined its long-term priorities thereby made national energy policy by far more predictable. From this prospect, the change is undeniably a positive move towards founding a common ground for setting up full-fledged energy cooperation in NEA.

Thus, we arrived at a point of formulating core queries of this study. We intend to examine what are those particular fields at which nations' interests are overlapping; and how these promising opportunities for regional energy partnership can be practically implemented.

These questions are approached in two stages. At the outset, national policies are examined separately with a special focus on the contemporary shifts. The most salient aspect of every country's energy policy is featured by a buzz word. This helps highlight the issues of nations' prime concern and pave the way to the analysis of degree of the policies complementarity.

Throughout the article, interdisciplinary historical and system approaches are employed involving realism, institutionalism, and liberalism perspectives in the area of international relations.

The paper is based upon information from a diverse array of sources, including policy papers, official and business reports, economic and political science journals, etc. Information obtained through the interviews with energy experts and analysts is incorporated throughout the study.

The author assumes limitations of the study as follows:

- timeframe covers period from the early 1990s to up to date with the last years being at focus;
- politico-diplomatic interchanges are considered to the extent they help understanding of the principal issues at hand;
- energy policies of four NEA majors – Russia, Japan, China, and Korea - are chiefly analyzed; and
- out of numerous types of energy, partnerships with regard to fossil fuels, such as oil and gas, are mainly examined.

## **1. Examination of NEA National Energy Policies**

Profoundly affected by the oil shocks of 1970s, Japan and Korea have multiplied their efforts in strengthening national energy policies in order to improve energy security. However, the sense of urgency disappeared with the Berlin Wall fall followed by upsurge of globalisation trends and moves towards opening up economies, all unfolded in the context of flat energy prices.

In the beginning of 1990s Japan encountered a decade-long economic turmoil. Korea has also plumped into meltdown after the 1997 financial crisis. Apparently, the time for revising national energy strategies and adopting market-oriented policy measures in the sector was no right. At the onset of the third millennium an array of challenges has raised energy related issues afresh. Two aspects have played a specifically critical part. From 1999 onwards, oil price took on the heightening trend hitting ever-seen records. Another turning point was the 9/11 that set a totally different tack for the global community. Thus, the nations were urged to tackle the energy policy agenda afresh.

Naturally, each of the NEAs has also had its own set of triggers. As such, Russia and Mongolia have

embarked on reforming national energy sector and formulating energy policy in order to adjust these elements to the realities that significantly changed in the course of overall economic system transition. China engaged in bringing about market-oriented transformation of its energy policy relatively later than its neighbours did. Heavily because the interests of national economy development are at stake, the country is vigorously utilising both domestic and external policy gears.

At the time when majority of NEAs concerned about the means to secure further economic development was adjusting national energy policies and transforming domestic energy sectors, the DPRK has staked at the policy of ultimatums and threats. Eventually, a dire shortage of energy has brought the nation at the brink and forced to seek cooperation with the outside world. Yet, it begun with a multilateral initiative closely linked to energy sector.

Until the end of 1990s, a major trend was a shift to a more market-oriented energy policy. However, considerations of such aspects as unfolding ever since March 1999 gradual to steep rise in crude oil prices, accelerating growth in energy demand, aggravating energy security, and deteriorating environment started to play a pivotal part in the process of policy making. The principal trends with regard to the NEAs are reviewed below.

### **1.1. Case of Japan: Efficiency**

Since the 1973-74 oil crisis, the Japanese government has specifically focused on tackling such aspects of energy security as managing dependence on foreign energy resources and vulnerability of energy resources supply.

To achieve this, Japan has set the following directions as principal lines of the energy policy:<sup>4</sup>

- 1) promotion of overseas oil development and better use of potential domestic energy sources;
- 2) development of non-oil energy alternatives, such as coal, nuclear power, and LNG;
- 3) diversification of oil supply sources and encouragement of direct and government-to-government oil deals with the producing nations;
- 4) encouragement of conservation and commercialization of new energy technologies; and
- 5) preparation of energy emergency-management procedures and build-up of petroleum stockpiles.

In essence, both domestic<sup>5</sup> and foreign<sup>6</sup> experts see eye to eye that Japanese government has failed to achieve any significant result in the fields from one to three. The METI with its limited finance and weak management is for a great deal seen responsible for such poor performance. For its part, energy business with its unconsolidated up- and downstream sectors, undeveloped upstream technologies, uncoordinated biddings for the overseas projects, practice of joining (but not initiating) energy projects, failures to access

promising deposits (relatively recent cases in Iran and Libya), etc. is also evaluated as having reaped a little fruit.

Historically, Japan's energy policy is influenced by two competing visions of how best to overcome energy vulnerabilities. These are held by what "loosely described as "energy internationalists" and "energy autonomists"<sup>7</sup>. Domestically, the former believe that decision-making about energy supply and demand should remain decentralized and be based on market principles. Internationalists, for their part, favour regional cooperation and believe that Japan's energy interests are furthered properly through multilateral institutions, such as the G-8, Energy Ministerial Meeting of the IEA, the APEC Energy Working Group, the Northeast Asia Petroleum Forum, the ASEAN+3 Oil Market Forum, the Energy Charter Treaty, etc. In their view, these institutions provide a relatively low-cost and effective way to resolve disputes, share information, and improve climate for energy cooperation. Internationalists are also likely to favour energy-related ODA (since recent, for promotion of energy-efficient technology transfer).

Energy autonomists are opposing, viewing competition for energy in zero-sum terms. They justly point at Japan's particularly acute energy profile due to the country's poor resource endowment and geography. Indeed, almost absolute dependency on imported fossil fuel shortens Japan's leeway in dealing with energy policy issues. For these reasons, energy autonomists allot the government with a role to shape supply and demand patterns. Pointing to boom-and-bust cycles in energy markets, they question the assumption that markets efficiently allocate resources.

Autonomists argue that Japan is better off if the government works hand-in-hand with industry to secure energy resources. Nuclear power holds a particularly important role in this view. National concept on nuclear power development has gone through the process of tough deliberations and finally was agreed as an effective means to ensure energy supply. However an array of accidents (with the last drop being Kariwa, Kashiwazaki, Niigata prefecture, halted in July 2007) ushered the national program on nuclear energy development into the realm of uncertainty.

Autonomists are less confident about the benefits of institutions and initiatives designed to promote regional and international energy cooperation. They are also rather sceptical on the account of energy-related ODA's effectiveness.

The balance of influence between the internationalists and autonomists has been shifting over the years. In the 1960s, the internationalists were dominating as Japanese economy looked to secure low-cost energy to meet rapidly growing demand. The oil shocks of the 1970s strengthened the autonomists' position. In the 1990s, the environmental concerns accentuated the internationalists' values to the degree that Japan has suggested the Kyoto Protocol initiative. Contemporary policy, seems to be more autonomists-led.

Energy policy of Japan is defined by the New National Energy Strategy<sup>8</sup> (Strategy) and the Basic Energy Act, based on the Strategy.<sup>9</sup>

The national Strategy not only seeks to reduce Japan’s external dependencies, but also favours more active government intervention in shaping internal and external markets. Elements of a more assertive government role through diplomatic, economic, and technological measures can be noted. If accomplished, the Strategy may bring benefits which numerically look as presented in Table 1.

**Table 1.** Numerical Targets Set by Japan’s National Energy Strategy

Energy Security Measure	2030 Targets
energy conservation increase economy-wide	by at least 30%
overall oil dependence reduce to	~40% of total primary energy supply
oil dependence in transport sector reduce to	~80% of consumption
nuclear power increase production to	~30-40% of total electricity supply
Japanese crude oil imports increase ratio to	40% of total crude oil imports

Source: New National Energy Strategy, METI. Tokyo, Japan, May 2006.

However, Japan’s effort in succeeding these strategic tasks may be obstructed by such impediments as: the low level of unity within Japanese government with ministries unable to efficiently cooperate; the limited ability of the state to get support from the private sector for its strategic initiatives; yet troubled relations with the neighbours (China, Korea, and Russia); and Japan’s limited diplomatic independence from the US in international politics, etc.<sup>10</sup>

While Japan’s external resource diplomacy is reckoned to remain flawed, the nation’s superiority in the realm of energy efficiency is unarguable: it left far behind any other country and tops the global ranking of energy efficiency. It is then very laudable that national Strategy envisages dissemination of the Japanese experience and taking on the role of “incubator for innovative energy technologies”.

Indeed, energy efficiency is Japan’s trump card which, in words by Yasuo Tanabe, Deputy Director-General of MOFA’s Economic Affairs Bureau, may help the nation to overcome challenges created by energy prices spikes.<sup>11</sup> However, under contemporary conjuncture of the world energy market and politico-diplomatic edifice of energy affairs, even supreme energy efficiency seems to be not efficient enough.

## **1.2. Case of China: Sustainability**

China is the world’s second largest energy consumer that expected to double its demand by 2030. China’s demand for energy is surging rapidly on pace with strong economic growth. That is why despite

the country is pretty rich in fossil fuels, it became a net-importer of oil in 1993, and turned into a net importer of coal in 2007.<sup>12</sup> China's oil net-import reached 160 mln t in 2007, composing dependence on imported oil of 46%, and this is expected to rise to 60% by 2020.

The nation's energy policy addresses five broad objectives of national development: efficiency, equity, finance, macro-economic growth, and energy supply security. Government regulation serves to mitigate possible contradictions among these objectives and optimizes overall sector development.<sup>13</sup>

China's 11th Five-Year Plan sets an ambitious target for energy-efficiency improvement: GDP's energy intensity is to be reduced by 20% from 2005 to 2010. This goal signals a major shift in China's strategic thinking about its long-term economic and energy development. It also provides further evidence that the Chinese government is serious in its call for a new "scientific development perspective" to assure sustainability of the natural environment.

The target for energy efficiency seems to be rather tough to achieve, considering that energy consumption has grown more rapidly than GDP in the past years. This recent trend in energy intensity stands in sharp contrast to the trend observed from 1980 to 2000, when energy demand grew less than half as fast as GDP and energy intensity declined steadily. China's long-term development plan, which calls for quadrupling of GDP and envisages doubling of energy use from 2000 to 2020, was based on this earlier experience. Therefore, the task to reduce energy intensity is prioritised. In 2005, the NDRC started "Ten Key Energy Conservation Projects", through which 240 mln tce will be saved. Ten projects include conservation and alternative oil; coal-fired industrial boilers transformation; regional cogeneration; the use of residual heat and residual pressure; energy-saving in the electrical system; energy system optimization; energy-saving in buildings; green lighting; energy conservation in governmental agencies; and energy monitoring and technical service system.<sup>14</sup>

China's high concerns about energy security, and security of the sea-lanes for energy import, in particular, are understandable. They sparked China's interest in trying to ensure oil supplies from as many sources as possible and in reducing its overwhelming reliance on seaborne imports of oil, which, in China's view, are considered vulnerable to disruptions.

Among the other priorities are ensuring reliability of energy supply, environment protection, optimising energy mix by switching to the larger use of natural gas, nuclear and renewable energy sources, pursuit of gradual energy reforms in every segment of energy complex, and acceleration in developing energy resources. As one of the means to improve the energy mix, China aims to increase share of biofuel. By 2010, the country plans to cover nearly 1/2 of demand (30 mln t) for automobile fuel by ethanol.

With regard to the overseas expansion, the country aims at strengthening ties with the Middle East, Africa and Central Asia. Indeed, China has seized a reputation of a nation trying every means to secure its augmenting energy demand. The country maintains official energy dialogues both on a bilateral basis and

through the international frameworks, such as the ASEAN, SOC, etc. Yet, Sinophobia factor often plays against China. An example of this sort was the CNPC's bid for Russian Slavneft in December 2002 which had been turned down. Another case took place in 2005, when the CNOOC went against Chevron in an attempt to acquire California-based Unocal. Once again, although CNOOC bid \$18.5 bln for Unocal, Chevron got the deal for \$16.4 bln.

China is facing quite sharp criticism about its energy diplomacy towards underdeveloped economies (in particular, Africa). A danger of heightening international disapproval is being realized domestically "...[T]he short-term benefit of aggressively pursuing (its current) oil diplomacy without proper consideration of the international community's concern may hurt China in the longer term...Beijing should think deeply about how to be more nuanced in responding to the concerns and perceptions ... of its foreign policy." <sup>15</sup>

Among the NEAs, China perhaps provides the widest variety of choices for those countries that are interested in international energy cooperation. With the Kyoto Protocol mechanisms entered into the phase of practical implementation, the CDM projects became a very promising niche. In essence, the CDM project is a kind of commercial activity. Given, China's retaining advantages in labour cost the segment will attract foreign investors and will be rapidly expanding. To be accurate, Mongolia is also eligible for the CDM, however China's immense potential is something hard to beat.

Thus, an array of areas potential for China's international energy cooperation is broad. The country has opportunities to simultaneously exploit numerous tools and probe into various realms, such as government-to-government intercourse, international aid schemes, public-private partnerships, business-to-business operations, etc.

Domestic economy's growth is priority for any developing economy. This is especially true for China with its global ambitions enormously beefed up by the approaching Olympics and EXPO. The goals can only be achieved with energy secured. Thus, a buzz word for China's energy policy – sustainability.

### **1.3. Case of Korea: Cooperation**

Korea, which is totally dependent on energy imports, tries hard to catch up with Japan and China while seeking for oil and LNG from all but the same destinations in the Middle East, North and West Africa, South East Asia, and Oceania. Yielding to Japan's wealth and China's persistence, Korea has nevertheless succeeded in inventing an apt set of energy policy gears.

Compared with the two countries, Korea exercises, so to speak, the golden mean approach. It continually tries to diversify activity both geographically and structurally. In so doing, the nation strengthens efforts in the Middle East direction and stakes at penetrating new areas (Russia's West



Kamchatka offshore, for the most recent example). With regard to Korea's stance towards the Middle East, the author has been sensing herself and took similar observations from her colleagues,<sup>16</sup> that Korea is reaping a fine crop from those fields.

In recent years, Korea's energy policy has been driven forward considerably. In February 2006, the Parliament passed the Energy Framework Act and in November of that year the President created a National Energy Committee, with four sub-committees (energy policy, technology, development of resources and conflict management).

Korea's energy strategy has significant similarities with that of Japan, given that both countries have similar structural features. The National Energy Plan<sup>17</sup> defines principal shifts and proposes the policy tasks as following:

- changes of policy goals: from focus on establishing a stable energy supply and demand system for economic growth and maintenance of living standards to energy policy ensuring a sustainable development (economic growth, environment, and energy security);

- changes in the external relations: from securing energy resources within a closed structure with "no networking with neighboring countries" to the externally open energy system in which energy supply network is interconnected with the neighboring countries; "cooperation within Northeast Asia and the activation of relations between South and North Korea";

- changes to market system: further liberalization with the government's intervention limited to the fields of environment, energy conservation, energy crises, etc. through such policy measures as taxation, public expenditures, etc.;

- changes to technology: united efforts of the government and private sector with the R&D for domestic energy industry; environmental protection, and international cooperation to be initiated by the government; etc.

On the whole, Korea's energy policy to a great extent converges with that of Japan.<sup>18</sup> A closer look, however, reveals some principal points of difference. Geographically, Korea's external energy policy clearly prioritizes development of cooperation with the nations in the region of NEA and with the DPRK. That is to say, the Plan formulates the goal of Korea "emerging as Asia's center of energy". As a means to achieve that, the Plan proposes:

- to advance in the development of energy and resources in the northern regions through enhanced cooperation with NEA countries, including Russia and China;

- to reduce unification costs in the energy sector by promoting exchanges between South and North Korea in the energy sector, and implementing an integrated energy system between the two Koreas.;

- to implement an externally interconnected energy system that links South and North Korea and other NEA countries as a long-term plan; etc.

Another point of variation is that Korean Plan calls for closer co-ordination and co-operation between the national companies operating abroad. In particular, the Plan proposes such practices as sharing the bidding information, regular meetings of business-to-business as well as business-to-officials format, etc. It also targets the NOCs at 50% or larger stakes in overseas projects, and calls for simultaneous involvement with both upstream and downstream sectors (“field plus plant” business model).

Summing up, the major guidelines of the Korean paradigm can be characterised as following: to set up an environment friendly energy system, enhance market mechanism, improve energy efficiency, and “become a hub of multilateral energy cooperation in NEA”.<sup>19</sup>

In order to proceed with the latter, the Korean Institute of Energy Economics (KIEE) ardently embarked on promotion of the idea of intra-regional energy cooperation in NEA. Starting from the first International Northeast Asian Energy Symposium held in Seoul in June 2001, Korea has launched a number of initiatives on organizing a government-level NEA Energy Cooperation Working Council, Working Council (SOM) and Working Groups. In particular active role is played by established in 2004 Centre for Energy Research, Northeast Asia (CERNA) affiliated with the KIEE. The KEEL, a nodal think tank, supported by the UNESCAP develops the Intergovernmental Collaborative Mechanism on Energy Cooperation in NEA.<sup>20</sup>

Korea advocates conception of an open multilateral NEA Energy Community with the US, some other countries as well as international organizations` participation. As a future scenario, the nation promotes a NEA Energy Charter Treaty that would provide regulation regarding investment and profit repatriation guarantees, avoidance of double taxation, international transit, dispute settlement, construction and operation of transportation facilities, energy trading, and technology transfer, etc. To back up these projections financially, an establishment of the NEA Energy Cooperation Fund is suggested.

Given a somewhat smaller size of Korean economy, the nation is challenged by the need to keep the pace of strengthening completion for energy resources with both China and Japan. That is why, Korea stakes at diversification of energy import in both dimensions, geographically - to Russia, and structurally – to a larger share of natural gas and LNG, once again, of Russian origin. Korea`s aspiration for regional energy cooperation is tightly linked to the improvement of inter-Korean relations, it is indeed a pivotal issue.<sup>21</sup> A prospect of the DPRK situation`s resolution, explains Korea`s especially energetic effort in promoting multilateral energy cooperation in NEA.<sup>22</sup>

#### **1.4. Case of Russia: Development**

Contemporary Russia`s tougher stance on energy affairs is plainly compared to those of Venezuela, Bolivia, Nigeria, and other petro-states whose policies are coined the exemplars of resource nationalism.

The rhetoric carries that nowadays major exporters are making use of the current juncture of surging energy prices and intentionally tighten a grip on resources almost exclusively in order to gain leverage over the world powers. Not every case, though, fits into such behavioural pattern. A telling example is a Canadian case. The state which by no means can be reckoned a particularly rebellious nation has recently changed the terms of previously-agreed contracts with foreign companies and even renationalized some assets. This example teaches us that a more careful approach to examining national energy policies and a more level judgement on the cases instead of sweepingly labelling them with the tags of `resource nationalism` or `resource war` may be more constructive.

To be fair, Russia-bashing chorus is not monotonously united.<sup>23</sup> There are sound considerations about origins and motives for the Russian contemporary energy policy.<sup>24</sup> Indeed, the policy may remain disturbing, but it is not wholly irrational: Russia cannot hand out reserves to foreign companies, offer energy contracts for granted, or open up its pipeline networks. The global market and energy business are functioning in accordance with a certain set of rules which are tended to change at some critical juncture. And now, when it seems to be such a period, in order to proceed with cooperation, both sides - supplier and consumer - need to take into account new realities and work out an apt cooperative framework.

Russian energy policy is laid down in the endorsed on August 28, 2003 Energy Strategy to 2020, which is currently being revised to adequately face drastically changed domestic and global setting. It is to be prolonged until 2030 (the Strategy 2030).

The Strategy 2030 constitutes a systematic approach towards achieving sustained economic growth supported by efficient development of energy sector and secured environment conservation. Toward this end, the Strategy defines three stages. Namely, a period of resource-innovative development (2008 – 2012) envisages resource exploitation at expanding scale with activated measures on technical and technological improvements. At the next, investment-innovative stage (2013-2020), the measures on energy efficiency and conservation become indispensable, therefore intensification of investment activity is particularly favoured. Finally, an innovative stage (2021-2030) emphasizes importance of continued elaboration and prompt implementation of energy efficient innovations and technologies which are seen a vital force underpinning national economy development.

The cornerstone postulation is that further economic development is only possible through development of the national energy sector. The latter should be approached upon qualitatively new paradigm involving introduction of the cutting-edge technologies, state-of-the-art expertise, and colossal investment.

Generally speaking, there are two principal models of the state management system in oil and gas sector. The first type is based on the direct state's presence through the ownership rights over the energy sector's assets, another approach envisages a wide range of regulative levers. None of the two is employed

in a pure form; in reality the interplay between direct and indirect mechanisms is defined at a certain juncture. Eventually, since 2004, Russia rather explicitly follows a model whereby the government is involved with the sector's development. Yet, the sense that steering this course further may damage national energy sector, as well as the entire Russian economy, is in place.

Characterising shortcomings of the Russian energy policy those deriving from two broad inter-related areas - of resource management system and resources exploitation practice – should be looked at.

The most salient problems in resource management system can be summarized as follows:

- overall sector's inefficiency originating from high monopolization (oil production is shared between 11 vertically integrated companies which control 95% of crude production (Rosneft holds 22.5%), Gazprom alone produces 84.5% of gas, as of 2007);

- bottlenecks in energy export infrastructure. If initially Russia encountered limitations of physical capacity to deliver steady growing exports, in the past years the problem has revealed a new facet which seems to be exacerbated by porous management. That is to say, having experienced disputes with Ukraine, Belarus, and, previously, Baltic States over the transit issues, Russia embarked at projecting new costly pipelines instead of settling the matters and amending long-term contracts with its traditional transit nations in the West;

- restrictive regulation for construction of private pipelines (for instance, Gazprom's monopolistic stance with regard to the export is guaranteed by the Law "On gas export") that ruins investment activity in new deposits' exploration and development;

- barring regulation for the foreign companies access to the upstream sector (particularly, through the newly endorsed system of strategically important deposits) that impedes technological and technical development; etc.

On account of the national resource exploitation practice, the following aspects require attention:

- contemporary practice of resource exploitation is extremely inefficient. The telling illustrations are: oil extraction averages at 30% (while modern technology allows 65%) equals to annual loss of 15 bln t; an oil deposit of 100t/d capacity is considered unfeasible (while in the US a field of 10t/d is being developed); associated gas flaring annually results in 24.4% waste;

- insufficient reproduction caused by extremely low investment into geological exploration in the past years (deposits are being exploited at higher pace than new reserves are being explored and put under operation);

- depletion of major oil and gas deposits and shrinking production as a result of prolonged underinvestment into resource base and technico-technological assets development; etc.

Objectively, Russian oil and gas is more costly due to severe natural conditions. That is to say, if Middle Eastern oil is extracted at cost of \$1-2/b, Russian oil requires \$9-10/b. What is more alarming, is that the

aggravation of resource base additionally increases costs at the depleting deposits. According to some estimates, for example, if in 2002 extraction cost of gas in Yamal Peninsula stood at \$4/1000cm, by 2030 it is projected to reach \$14/1000cm. Furthermore, development of new gas deposits of Yamal entails cost of no less than \$20-25/1000cm.<sup>25</sup>

Evidently, the Russian energy sector entered a critical phase. From outside though Russian energy is increasingly regarded as a 'muscle' that is flexed in order to seize the nation's foreign policy targets. Although this perception is understandable, it is flawed in many aspects. The arguments to support this opinion are provided below.

Russian energy is not primarily about geopolitics. In fact, Russia has only a limited ability to use oil and gas as a 'weapon'. It is true that the state now controls a significantly higher share of the domestic oil industry than it did during the 1990s. As a result of series of takeovers of private companies by Gazprom and Rosneft, state-controlled and affiliated companies at present make up 39% of the country's oil production and 49.3% of its refining capacity,<sup>26</sup> as of 2007 (refer to Table 2).

**Table 2.** Oil production in Russia, mln t

Company	2006	2007	2007/2006, %
LUKOIL	90.4	91.4	1.1
Rosneft	81.7	101.7	24.5
Yukos	21.5	9.0	-58.3
TNK-BP	72.4	69.4	-4.1
Surgutneftegaz	65.6	64.5	-1.6
Gazpromneft	32.7	32.6	-0.3
Tatneft	25.4	25.7	1.3
Slavneft	23.3	20.9	-10.3
Russneft	14.8	14.2	-3.9
Bashneft	11.7	11.6	-1.0
Gazprom	13.5	13.2	-2.2
NOVATEK	2.6	2.6	0.3
Russian companies and JVs	19.9	20.7	3.7
PSA	5.1	13.8	170.6
Total	480.5	491.3	2.2

Source: Planovaya stagnatsiya// Kommersant. № 47(3864). 24.03.2008  
[<http://www.kommersant.ru/doc.aspx?DocsID=870348>] (in Russian)

In order to describe overall setting adequately, the following considerations seem to be worthy incorporation. Although, the government does not hold a majority in domestic oil production, it is still able to steer the oil industry for political purposes indirectly, i.e., via tax incentives, export regimes, pipeline access, oil and gas fields auctions, etc. Yet, a more explicit toolkit whereby the government proposes its

representatives to energy company's board of directors has been introduced. In accordance with this practice, for instance, the 2008 recommendations were as follows: to Rosneft - 7 appointees (from Ministry of Economic Development and Trade, Ministry of Industry and Energy, Agency for Administrating Federal Estate, etc.), Transneft - 12 candidatures (from Agency for Energy, Ministry of Trade and Development, Ministry of Industry and Energy, Agency for Administrating Subsoil Utilisation, etc.), Zarubezhneft - 7 members (Agency for Energy, Ministry of Finance, Ministry of Industry and Energy, etc.), Gazprom - 2 officials (the head of the government and Minister of Economic Development and Trade). This is not a negligible instrument.

Nonetheless, the domestic Russian oil market is seen as fairly competitive.<sup>27</sup> Indeed, the domestic energy price receives the world market signals. Naturally, it is being corrected by elimination of related to export levies, taxes and customs duties. As a means to liberalise domestic market, the electronic system for gas trading and oil products stock exchange was introduced in 2006 and 2008, respectively.

The other point is that Russian oil companies - state-controlled or private - trade on a global market and, therefore, they do not have great leverage over individual consumers. Whenever Russia decides to cut oil supply to a consuming country, it will have no major effect, as the targeted country can purchase the shortfall on the spot market and circumvent the 'blockade'.

Situation is pretty much different with the gas as Russia covers up to 100% of imports for some European countries. But once again despite this apparent dependence of European gas customers, there is no real case of "energy war" for two reasons, both of which lie in the nature of the gas market. First, since exploration of gas fields and pipeline construction are extremely expensive and time-consuming, producers and consumers engage in long-term contracts that usually cover 20 years or more and entail destination clauses prohibiting secondary trading. Second, gas is almost exclusively transported via pipelines. Hence, if either the producer or the consumer wants to terminate the contract, he has to build a substituting facility first. Given extremely high upfront costs, it becomes very costly for either involved party to leave an established bilateral contractual gas relation. A quick glance at the dense pipeline grid connecting Europe and Russia reveals that neither side can be interested in dumping all the money each have invested; nor do they have a real choice. It should be looked impartially: Russia does not use gas disputes as a means of 'flexing its energy muscles' or punishing renegade governments of the Near Abroad. Indeed, with the world gas price surging beyond \$ 300 a ton, what are the sound grounds for Ukraine, whose accumulated debt for Russian gas has reached \$ 2 bln (as of the end of March 2008), to claim from Russia to keep price at the level the country enjoined in 2007 - \$ 130 per ton ? Ukraine expresses its displeasure with the rise when even a price for the domestic Russian market is decided to be equaled with that for West Europe by 2011.

Perception, that Gazprom is instrumental in the government's foreign policy, also clashes against reality.

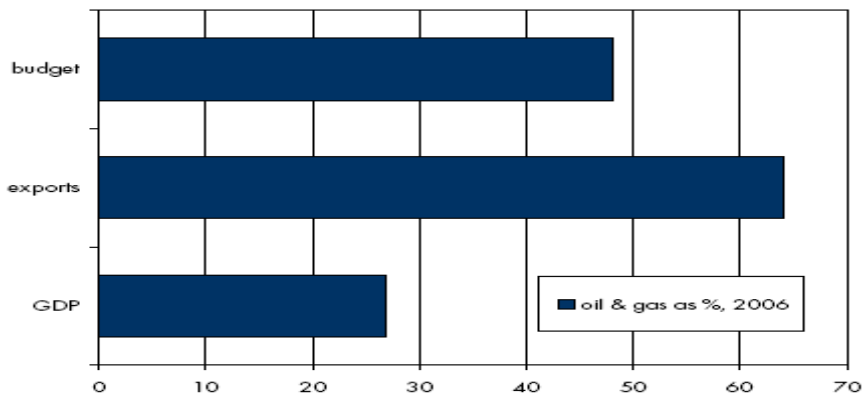
Indeed, the interests of Gazprom and the government are intertwined, but they not necessarily coincide. As gas makes up 52% (as of 2007) of Russia's energy consumption, the domestic gas market is highly politicized. Gazprom produces about 86% of gas and controls the entire domestic pipeline system. At the same time, it is obliged by federal law to ensure supplies for domestic consumption. To date, more than 2/3 of Russia's annually produced gas is used domestically. It is clear enough that Russia cannot cut gas exports without significantly affecting its own budget revenues. In order to generate revenues, Gazprom needs foreign markets. In fact, to date, Gazprom earns virtually all its profits from exports to Western Europe, the market which only accounts for 1/4. Gazprom has every right to charge prices at the full market rate. This is good business sense, especially since the domestic market is highly subsidized. To be fair, in case an affected country is unable to pay the new price, Gazprom offers other ways of settlement. For example, for the second quarter of 2008 Belarus was awarded with unbelievable gas price of \$ 128 a ton. Although, Gazprom more willingly accepts in-kind payments, which include shares of national or regional gas providers or pipeline grids.

A point of sensitivity also lies in the area of possible further renationalizations of energy assets and expansion of state control over the industry. As similar experience of the other countries is well analysed in Russia, there is awareness that such moves might profoundly diminish performance of the sector and reduce output.<sup>28</sup> Furthermore, national experts call for changes in the energy sector's structural organisation. According to their views, the sector's deadlocks of under-exploration, under-investment, deposits' depletion, etc. can be overcome if private and state-owned, small-/medium-sized companies and large corporations are operating in a somewhat shift manner. For example, during the stage of conducting a geological survey, a small-sized specialty company would be efficient. Once the exploration is finished, and results of the study are sold on the market, further development of the field depends on size of its reserves. Naturally, large deposits with specific geological and climatic conditions require extensive financial resources, sophisticated equipment, rich experience, etc. all of which can only a large corporation provide. Evidently, small deposits and declining fields are better off being run by smaller stakeholders. Their moderate operational costs would enable profitable business targeted at supplying the local markets. In a nutshell, this approach suggests a means to improve the current system of energy resources management. Obviously, the problem of management efficiency is tackled from the angle of existing correlation between the parameters of *size of deposit*, or *stage of deposit's life circle* and *size of stakeholder*, in other words, *type of ownership*.

Another common perception is that Russian economic growth is entirely due to the high energy prices. In fact, Russian economic recovery has originally been stemmed from a boom in domestic consumption and investment triggered by the 1998 ruble's devaluation. The first signs of domestic industrial revival were recorded in the last quarter of 1998, shortly after the August financial crisis has broke out. In the

recent years, Russia has been growing impressively, on average, over 6% a year.<sup>29</sup> The country's PPP based GDP hit a level of \$2 trln in 2007, rendering Russia 7<sup>th</sup> ranking. True, due to the country's natural endowments, hydrocarbons are a major factor in the Russian economy and in state finance. It made possible accumulation of reserves of foreign exchange of \$ 470 bln which places Russia the 3<sup>rd</sup> (after China and Japan).<sup>30</sup> Hydrocarbon sales account for a major part of state revenues, as increase in oil price automatically lead to the customs duties' and taxes' increment. The total share of revenues stemming from energy export has more than doubled during the past four years (refer to Graph 1).

**Graph 1.** Oil and gas sector's share in Russia's budget revenue, export, and GDP, as of 2006.



Source: Hanson, Philip, How Sustainable Is Russia's Energy Power? Russian Analytical Digest. # 38. 2 April 2008. p. 11 [<http://www.isn.ethz.ch/news/rad/>]

However, oil and gas add less to overall Russian GDP and economic growth than the above figures would suggest.<sup>31</sup> In fact, oil and gas presently contribute about 20% of national GDP. The energy sector grew below the Russian average during recent years. In 2007, for instance, gas production dropped by 0.8% and oil production grew by modest 2.1%, respectively.

The perception that Russia is an energy superpower is questionable. Given investment challenges in the Russian oil and gas sector, it is unclear whether Russia will keep its current position on world markets, let alone increase its market share. True, Russian oil and gas reserves are impressive. Russia owns 26.3 % (47.65 trln t) of the world's proven gas reserves, and 6.6% (10.9 bln t) of the world's proven oil reserves. In 2006, the country accounted for 21.3% (550.9 mln t) of global gas production and for 12.3% (480.5 mln t) of global crude oil production.<sup>32</sup> At present production levels, Russian oil reserves are sufficient for another 21 years, while gas reserves will last another 80 years. Russian oil production is expected to expand from 9.87 mln b/d in 2007 to 10 mln b/d in 2010, and 11 mln b/d in 2030. As for the gas, the



projections somewhat differ according to source. The Energy Strategy 2020 defines a possible range of output from 680 to 730 bln cm in 2020.

However, a striking lack of investment makes these projections appear highly optimistic. The giant fields in Western Siberia, which currently account for more than 60% of total Russian production, are depleted. In order to compensate for declining output from these fields and to meet contractual commitments, Russia urgently needs to make new upstream projects start producing. But as most new fields are smaller than the depleting ones and, in addition, are located in the far north, costs for exploration and production are about to rise significantly. As estimated, on average, the Russian gas sector will have to spend \$17 bln per year through 2030 in exploration and production projects and in the maintenance of current fields in order to meet domestic demand and to fulfil export commitments.

As for the oil sector, the picture looks similar. As important fields have peaked, development of new fields will have to cover all of Russia's annual oil growth in the next five years. Projected accumulated investment needs range from the Russian Ministry of Industry and Energy estimates of \$240 bln until 2020 to IEA forecasts of \$ 400 bln by 2030. While the Russian oil sector can be expected to respond to market signals, the prevalent monopolistic structure of the domestic Russian gas market is susceptible to avoiding necessary investments. At present, Gazprom has only committed to a total of \$11.5 bln of capital spending per year through the next 3 years<sup>33</sup> and the rest has to come from private companies. Yet, as Gazprom uses its control of the domestic pipeline grid to restrict third party access and prevents independent producers from exporting gas, private gas companies have little incentive to invest in upstream projects.

In sum, Russia has attributes of a petro-state, however the country's economic future will depend much less on energy prices than on its ability to manage unfavourable demographics, contain rampant corruption, and improve poor public management. Given the strong growth of the nonresource sectors, Russia's economic future will hopefully be based on industry and services rather than on oil and gas. Russian energy should be regarded as a commodity, even if politicized, and should be dealt with in terms of regulations on global and regional markets, through the means of dispute settlement mechanisms, and in the frame of investment regimes and trade agreements. Thus, we are far from idealising contemporary Russian energy policy and pretty much agree with those experts who view its pattern as highly inefficient and harmful.<sup>34</sup>

Obviously, Russia's power is linked to the energy sector's export capacity, which increasingly needs investment for further development. Therefore, the business-politics balance is tipping towards business rather than politics. An extensive list of endorsed and pending programs reveals an eventual arrival of long-term thinking to the national energy policy enabling business initiatives in the sector.

With regard to external factors that determine Russia's energy policy, at the current juncture of high energy prices, instability in the Middle East, increasingly independent energy policies of traditional allies

in Central Asia and Caspian Sea region, growing Asian energy demand, reserve depletion in traditional European energy exporters, etc. it is no more a dilemma of staying West or going East. A combination of geo-political and geo-economical considerations has even added new dimensions which are the Central Asia, Caspian Region, most recently, North Africa, etc. Thus, here again, “development”, both quantitatively and qualitatively is the most appropriate characteristic of the Russian energy policy.

### **1.5. Case of Mongolia: Calibration**

The nation is pretty much concerned about alleviation of dependence on Russia’s petroleum supply, energy infrastructure refurbishment and wider usage of renewables (in particular, wind, solar, and hydro energy). For the sake of the national energy sector development, Mongolia established regulative system favouring active participation of foreign capital. Given the nation’s Soviet legacy, it is not surprising that national energy policy is targeted to increase private sector’s participation and enhance commercialization of the energy enterprises.

Speaking about Mongolia’s energy policy tools, legislative framework is based upon the Energy Law. Institutionally, the policy is implemented by the established Energy Regulatory Agency. Sectoral reforms are unfolding in the context of overall economic liberalization.

Future policy actions envisage following measures: on the micro-level, to resolve inter-company arrears and increase private sector participation; and on the macro-level, to implement Mongolia’s Integrated Power System program, and Mongolia’s Sustainable Energy Sector Development Strategy (both adopted in 2002).

Mongolia perfectly realises disadvantage of its geographical location, that makes it a land-locked country. With the factor of petit domestic energy demand added, the nation’s attractiveness as a partner for intra-regional cooperation significantly decreases. These are, perhaps, the nation’s most strict limitations for international energy cooperation.

Over the years of economy transition, a number of projects was not realized due to political, energy security or cost constraints. Mongolia is forced to rely on bilateral partnerships, in particular with Russia. Although, Mongolia promotes its geographical setting as enabling cost effective solutions for energy infrastructure connecting Russia with China, and further to the Korean Peninsula, the country is almost excluded from participation in the multilateral energy projects. Seeking for the ways to compensate for that, in addition to accession to the regional energy related frameworks, Mongolia is actively partaking in international energy policy frameworks.

These tierce descriptions of Mongolia’s experience allow suggestion of the word “calibration” as a key characteristic of the nation’s energy policy.

## 1.6. Case of the DPRK: Refurbishment

It is not so much off the mark to suppose that in the past the DPRK had no national energy policy per se. The country's energy sector has been guided by mainly international frameworks, first through the KEDO initiative then succeeded by the Six Party Talks mechanism.

With regard to the DPRK's energy affairs, several points are eyed as crucially important. Among those are: stabilisation of petroleum products supply; reconstruction of coal-mining sector and coal transport infrastructure; diversification of energy mix switching to wider use of natural gas and renewables (hydro, wind, solar, and tidal energy); modernisation of electric grids and power facilities; and introduction of energy efficient technologies in the entire fuel-energy complex consisting of production, distribution, transmission, and utilisation segments.

To succeed with the DPRK's energy sector redevelopment in near-term, a number of coordinated actions is required. The most destructive to multilateral cooperation aspects include:<sup>35</sup> lack of financing from outside sources; lack of trained counterparts in the DPRK; need to couple energy sector redevelopment with economic redevelopment (which actually has taken a mild start<sup>36</sup>); the need to rebuild (or build anew) key transport, energy, and communications infrastructure; lack of information both inside and outside the DPRK about the DPRK's energy needs.

From consideration of security, the DPRK indeed plays a crucial role, defining the overall spatial design of pipeline and electric grid infrastructure in the NEA. The redevelopment stage is an indispensable condition for more profound reforms which may open the way to a regional community. Thus, "refurbishment", carried out through national and, or perhaps even more actively via external frameworks (with active involvement of the US), defines the DPRK's current energy policy agenda.

## 2. NEAs Energy Policies Compatibility

As follows from the analysis above, at the current juncture, the NEAs are utterly concerned about the means to ensure energy supply of sufficient quantity at affordable price.

In order to better answer a question if the NEAs' energy policies are compatible, let us represent the main findings of the previous examination in the form that makes comparison easier. Table 3 briefs on the national energy policies.

**Table 3.** NEAs energy policies: comparison on degree of compatibility

Country	Energy policy priorities	Susceptibilities	Gains sought	Factors to contribute	Limitations
Japan	By 2020: Increase EEC by 30%; Reduce oil consumption in transport sector to 80%; Reduce dependence on oil to 40%; Increase oil imports by NOCs to 40%; Increase share of electricity generated by nuclear power to 30-40%, etc.	High dependence on the ME supply; High reliance on oil; Toughening competition (with China, Korea) over access to resources in new regions (Africa, Central Asia, Caspian Region, etc.)	Energy cooperation of broad context to provide national energy security; etc.	Immense private and state capital; Advanced machinery; Cutting-edge construction technologies; etc.	Undeveloped domestic piped infrastructure; Accommodated to the ME crudes parameters refining; Power sector lobby; Territorial disputes; etc.
China	By 2010: Improve EEC by 20%; Balance domestic and external resources supply (ties with oil producing economies; NOCs "going abroad"); Build oil strategic reserves; Bring about market-adjusted style of energy management, etc.	Rapidly growing energy demand; Rising reliance on external sources; Deteriorating environment; Heaving external anxiety by China's energy policy; etc.	Means to narrow gap in regions development; Way to strengthen country's stance for leadership in NEA; etc.	Ample state capital; Enormous in number and cost- competitive work force; etc.	Non-market regulation; Sparsely developed energy infrastructure in north and east; Territorial disputes; etc.
Korea	Secure supply; Reinforce oil industry competitiveness; Build oil market; Decrease dependence on fossil fuels (to nuclear energy, alternatives, renewables); Pursue EEC; Establish trans-boundary energy systems in NEA, etc.	High dependence on ME; DPRK related security concerns; etc.	One of the means of unification; Active role in regional energy community's formation; etc.	Sufficient state and private capital; Constructing technology; Drilling and production machinery; etc.	Land-locked over the neighbourhood with the DPRK; Territorial disputes; etc.
Russia	Improve energy resources management; Develop energy infrastructure; Modernize down- and upstream sectors; Eliminate gap in economic development across the country; Diversify energy export; R&D in EEC; Environment protection; etc.	Obsolete production base; Declining resource production; Dilapidating energy infrastructure; Deficit in energy supply; Gap in economic development between the regions; High dependence on Europe; etc.	Lessening of dependence on Europe; Development of energy sector; Means to vitalize East Siberia and the Far East; etc.	Rich resource base; Adequate state and private capital; Exploration and exploitation technologies; Adequately skilled work force; etc.	Poorly developed deposits of East Siberia and the Far East; Unprecedented scope of investment required; Territorial disputes; etc.
DPRK	Expand use of coal, hydropower and renewable energy; Allow foreign participation for energy sector rehabilitation; etc.	Scarcity of resources for development, including energy; Severe economic conditions; etc.	Means to sustain economic system; etc.	Location of geostrategic importance; Cost- competitive work force; Six Party Talks cooperative framework; etc.	North-South tensions; Barely developed infrastructure; Cautiousness about harmless scope of international cooperation; etc.
Mongolia	Market reforms in energy sector; Development based on EEC; Incorporation of domestic energy network into international system; etc.	Periphery of regional and international energy infrastructure; etc.	Integration with NEA; Strengthen stance in the global arena; etc.	Legislation favouring foreign participation; Cost-competitive work force; etc.	Remoteness from proposed projects; Underdeveloped infrastructure; Small-scale economy; etc.

Note: EEC – energy efficiency and conservation; ME – Middle East; EC – energy cooperation

Source: composed by the author

Apparently, the NEAs' energy policies demonstrate a certain degree of complementary. It comes as no surprise that concerns about the ways to secure sustainable supply of energy resources, increase energy efficiency, exploit environment-friendly model of economic development, etc. are shared by NEA nations.

Whereas the NEAs pursue similar goals in the overlapping areas, a cooperative format seems to be the only way to succeed in national energy policies' implementation.

From viewpoint of the countries' resource endowment (Table 4), enlargement of intra-regional energy partnership promises to be a beneficial scheme.

**Table 4.** NEAs resources and factors of production endowment

Countries	Population	Labour	Managerial experience	Capital	Technology	Infrastructure/energy infrastructure	Oil & gas	Coal & minerals
China	R	R	A	M	I/M	I/ I	M/I	R
Japan	R	I	M	R	R	R/I	P	I
Korea	M	M	M	A	M	M/ I	None	I
DPRK	I	M	P	P	P	P/ P	None	M
Russia	R	A	M	M	I/M	I/ I	R	R
Mongolia	P	I	I	P	P	P/ P	I	M

Note: R – rich, A – adequate, M – moderate, I – inadequate, P - poor

Source: composed by the author

Under circumstances of heightening concerns about energy use, energy security, and sustainability of economic growth, China, Japan, and Korea are searching for affordable, diversified, and reliable supplies. Russia is able to mitigate such energy related anxiety providing an opportunity to diversify NEAs' energy supplies both geographically and in terms of energy mix.

### 2.1. Russia's Energy Policy towards NEAs

Economic growth of the NEAs is becoming increasingly interdependent with each other chiefly through the trade exchange that traditionally plays a central part in international economic relations. So it is in case of NEA, with the bilateral trade burgeoning and overall intra-regional ties thickening. Until recently, Russia's economic contacts with the NEA were of a very limited scope. Yet, to the Russian Far East and East Siberia, the NEA economies always were attractive destinations for beneficial economic exchange. Over the period of economic transition, the NEA has turned into the region of the Russian eastern provinces' prime interest. Numerically, especially in the context of Russia's entire foreign economic activity, it probably did not look that impressive. The figures on exchange with the NEAs were rather modest, and there were also periods of trade and investment significant sags either due to market fluctuations (timber trade, as an appropriate illustration), or bilateral investment-related disputes (Japanese investment to the airport project in Khabarovsk city and hotel in Yuzhno-Sakhalinsk city).

Speaking on the current state of affairs, there is a clear trend of Russia's more intensive involvement with the NEAs. Still, timber, fish and sea-products, non-ferrous metals, and machinery are principal items for the trade exchange, but energy resources are traded at steadily growing pace. Indeed, compared with the 1990s when the first oil deals were concluded between Yukos and CNPC, and the first oil was pumped at the Piltun-Astokh oil field of the Sakhalin-2 project, the structure of Russian exports has changed towards larger share of oil and oil products. And the tendency is expected to continue as, for example, the Sakhalin shelf is projected to deliver to the markets over 20 mln t of oil and 9.6 mln t of LNG annually.

NEA is set a priority dimension of the Russian external energy policy. In response to a reasonable query upon what ground such statement is raised, let us turn to some facts.

Not only did Russian government proclaim an "Asian vector" in its energy policy, eventually it started to undertake the actions to meet the goal. In the past few years, for example, the following strategic initiatives had been elaborated and put under implementation:

- the Program on refining industry development in the East of Russia up to 2015;
- the Program on long-term development of energy sector in Eastern Siberia and Far East up to 2020;
- the Development Program for the Integrated Gas Production, Transportation and Supply System with due regard of possible exports to China and Asia-Pacific markets (approved by the government on June 15, 2007, by the Ministry of Industry and Energy on September 3, 2007, Order # 340);
- the Federal Program on Economic and Social Development of the Far East and Trans Baikal Region up to 2013. Although the Program on Economic and Social Development of the Far East and Trans-Baikal Region has just been revised and prolonged to 2013, the government is tackling the issue anew - working under the long-term Strategy for Economic and Social Development of the Far East, Buryatia Republic, Irkutskaya Oblast and Chitinskaya Oblast up to 2025.

As of today, the most ambitious program on the regional development is the Eastern Gas Program (approved on September 3, 2007). According to the Program, annual natural gas output is to reach 140-160 bln cm by 2020-2030 (8 bln cm, as of 2006). Four centres of gas production defined in the Program are scheduled to be activated in order of their current degree of development: Northern Sakhalin, South-Western Yakutia, Irkutsk area and Krasnoyarsk area.

Almost untapped reserves of the Far East and Eastern Siberia are estimated as containing over 3.1 and 0.9 trln cm of natural gas onshore and offshore, respectively, and about 1.0 and 0.3 bln t of crude oil onshore and offshore, respectively.<sup>37</sup>

By all accounts, the Far East and East Siberia energy projects (refer to Table 3) are very much expected to bring an ample fruit.

**Table 5.** Energy projects in East Siberia and Far East

Name/ Route	Ownership	Fields/Reserves/ Capacity	Investment	Status
Sakhalin I	ExxonMobil (30%), SODECO (consortium of Japanese companies) (30%), Rosneft (20%: Rosneft-Astra - 8.5%, SMNG-Shelf-11.5%), ONGC Videsh Ltd. (India) (20%)	307 mln t of oil, 485 bln cm of gas at Chayvo, Odoptu, and Arkutun-Dagi fields capacity: 12.5 mln t/y and 10- 11 bln cm/y	\$ 17.8 bln (\$ 6.6 bln funnelled, as of June 2006)	drilling started on July 12, 2003, first oil exported in October 2006;
Sakhalin II	Gazprom (50% plus one share), Shell Sakhalin Holdings B.V. (27.5%, minus one share), Mitsui Sakhalin Holdings B.V. (12.5%), Diamond gas Sakhalin B.V. Mitsubishi (10%)	140 mln t of oil, 550 bln cm of gas at Piltun-Astokhskoye and Lunskeye fields capacity: 8.5 mln t/y and 15 bln cm/y (LNG 9.6 mln t / y)	\$ 19.4 bln (\$ 13 bln funnelled, as of April 2007)	oil exports started in July 1999; phase II - first LNG exports in summer of 2008*
Sakhalin III	Veninsky block- Rosneft (74.9%), Sinopec (25.1 %) Gazprom - gas fields (2008)  (Japan`s participation is very likely)	Veninsky block 163 mln t of oil, 1,200 bln cm of gas Yuzhno-Kirinsky block - 70 mln t of gas condensate, 700 bln cm of gas, 453 mln t of oil Ayashsky, Vostochno-Odoptinsky - 170 mln t of oil, 670 bln cm of gas	\$13.5 bln	drilling starts in 2008
Sakhalin IV Zapadno-Shmidtovskiy block	Rosneft (51%), BP (49 %)	Zapadno-Shmidtovskiy block - 235 mln tof oil,360 bln cm of gas Kayagano-Vasyuganskiy block - 1,172 mln t of oil, 432 bln cm of gas, Vostochno- Shmidtovskiy block - 516.5 mln tof oil, 408.2 bln cm of gas	estimated \$2.6 bln to develop	prospecting; development of exploration strategy
Sakhalin V Kayagano-Vasyuganskiy block, Vostochno-Shmidtovskiy block				
Sakhalin VI	Urals Energy (UK) - 97%, Sakhalin Oblast Authority - 3 %	1 bln t of oil, including Pogranichny block 240 mln t	-	geological survey showed good prospects
Zapadno- Kamchatsky Block	Rosneft (60%), KNOG (40%)	1,798 bln t of oil, 2,032 bln cm of gas	-	drilling starts in the first quarter of 2008
Kovykta Condensate Gas Field project	Gazprom, RUSIA Petroleum: TNK-BP (62.42%), Interros (25.82%); ESGC (11.24 %)	1,900 bln cm of gas, 2,300 bln cm of helium, 115 mln t of gs condensate  4,887 km: Kovykta gas field - northeastern China (20 bcm/y) -	estimated \$ 17-18 bln	intergovernmental Russian-Chinese general agreement, February 25, 1999; agreement

	CNPC, KoRus (consortium of Korean companies)	Korea (10 bcm/y)		on supplying gas to China and Korea signed by RUSIA Petroleum, CNPC and Kogas, November 2, 2000 expected to be started from 2017 marketing in Korea and China
Chayandinskoe Oil Condensate Gas Field project	Gazprom	1,240 bln cm of gas, 50 mln t of oil, capacity - 31 bln cm/y 7.2 bln cm of helium	-	to be started in 2008; completion for domestic consumption by 2013; Japan, China, Korea – potential markets
East Siberia Pacific Ocean Pipeline (ESPO)	Transneft, suppliers Rosneft, TNK-BP, Surgutneftegas, etc.	first stage of 30 mln t/y and 2,760 km Taishet – Ust-Kut-Talakanskoe-Aldan-Tyndu - Skovorodino; second stage – of 80 mln t/y Skovorodino - Kozmino	first stage \$ 11.5-12.5 bln; second - \$ 9.1 bln (Russia);	first stage launched in April, 2006 expected to be completed by the end of 2008;* beginning of the second phase is pending decision
ESPO tapping from Skovorodino to Daqin	CNPC	Skovorodino – Daqin of 1,090 km (by CNPC); second stage (of 80 mln t/y capacity)	\$ 436 mln (China)	CNPC starts Daqin trunk in the first quarter of 2008;*
Kozmino Oil Port at the Pacific shore of Russia		Skovorodino – Kozmino Oil Terminal (Japan and other Pacific countries) 50 mln t/y	\$ 420-500 mln	April – December 2008*

Note: \* most likely, will be delayed up to the end of 2009.

Source: composed by the author, revised and adopted in line with the recent developments.

Oil in East Siberia is sweet and light and could be sold at a higher price than the traditional Urals export blend. Additionally, major eastern gas fields contain valuable products for the gas chemical industry (in particular, helium). However, this attractiveness is significantly derailed by the low degree of exploration (the average density of drilling is 2 meters of deep wells per 1 sq km, while the Russian average is 23 meters per 1 sq km)<sup>38</sup>, costs associated with oil and gas exploration and production, severe climatic and specific geological conditions.

Contrary to what is often written in the Western media, the main point for Russia is not to balance Europe against Asia, but to establish a diversity of customers among the individual Asian countries (mainly, China, Japan, and Korea) and, in the case of Sakhalin, among NEAs and the US. Russia seeks a



diversity to reduce its dependence on any particular customer.<sup>39</sup> Such a shift can indeed help diversify supply directions and minimize risks associated with transit through the territories of third countries.

According to estimates by the Russian Ministry of Industry and Energy, if these gigantic projections accomplished, Russia could increase the Asia-Pacific Region's share in oil export from current 3% up to 30% in 2020 (increment by 100 mln t) and expand gas export from 5% to at least 25% (no less than 65 bln cm). However, to meet these ambitious targets gross investments are needed. As has been reported in the beginning of 2008, the government plans \$30 bln investment in exploration and development of oil and gas deposits in the Far East and Trans Baikal region. As a means to fulfil the target, the government intends to organise two investment forums.

The Russian government is genuinely interested in closer cooperation with NEA because it reasonably considers enhancement of energy cooperation as a very unique opportunity to develop economy of East Siberia and the Far East through a number of large-scale projects in energy, transport, industry, etc.<sup>40</sup> Regional energy cooperation would facilitate reconfiguration not only economic, but also political ties in NEA, with Russia moving into a position of advantage.

## **2.2. NEAs' Perceptions about Intra-Regional Energy Cooperation**

In one of her previous works, the author suggested that cooperative framework between the NEAs most likely will be shaped in a 'hub-and-spoke' manner with other arrangements supplementing.<sup>41</sup> Taking into account the scope of energy demands of China, Japan and Korea, this section will mainly examine cooperative grounds between the troika and Russia.

Despite Russia emphasized importance of the Asian market, cooperation is not going as smoothly as initially anticipated. Development of the East Siberian fields is linked to construction of an extensive energy infrastructure to NEA. Despite the fact that negotiations with Japan and China have been going on since the early 1990s, quite a number of uncertainties remains in place.

The Asian markets are clearly attractive to Russia but it would take billions to create the necessary infrastructure. The author does not agree with opinion that either China - or any other country in the NEA - is leery of becoming too dependent on Russian supply. There is no illusion: in terms of volumes, the Middle Eastern suppliers will remain dominant for the years to come. On the flip side, there is no harm to an energy importer to develop a rich portfolio of suppliers.

After decades of strained bilateral relations, and having solved border disputes in the Russian Khabarovsk krai in 2004, Russia and China have improved their relations in recent years. This trend has become obvious in joint military exercises, enhanced economic cooperation, and especially in collaboration in the SCO. Russia, as a major energy producer, and China, as the world's second largest

consumer are set to strategic energy cooperation.

Among the NEAs, China is undoubtedly the front-runner in energy cooperation with Russia.<sup>42</sup> A major milestone of Sino-Russia energy relations was the \$6 bln loan from the CNPC to Rosneft, in early 2005. This financial resource made it possible for Rosneft to purchase Yuganskneftegaz (subsidiary of the former Yukos) at a state-run auction. 2005–2006 saw a series of important deals between Rosneft and CNPC (joint venture for upstream projects in East Siberia), Transneft and CNPC (ESPO), Gazprom and CNPC, etc. The progress though is not that vibrant. There are multiple reasons for such state of affairs.

In the area of gas, a major obstacle is that Russia and China have not yet been able to agree on a price that will guarantee that Russia's large planned up-front investments will pay off within a foreseeable time span. Russia realizes that it has to engage with China for economic reasons, but it feels uneasy tightening itself too strongly to one consumer.

Indeed, as author learnt from exchange with Jianping Zhang, Director of Department of International Regional cooperation at the Institute for International Economic Research of the NDRRC,<sup>43</sup> China is most and foremost concerned about sufficiency of energy supply at *affordable price* (the latter was especially emphasized with the point being that China is still a developing nation). In the expert's opinion, the key challenges for the country include efficient medium and long term planning and implementation of energy strategy; coordination and adjustment of relationships within fuel-energy complex. Hydro power, nuclear and renewable energy are the areas to be intensively developed. Given the scope of China's energy demand, it is not surprising that desirable format for energy partnership with Russia is a long-term strategic cooperation.

It is chiefly over the issue of price that several high-profile energy contracts between Russia and China including the much debated Altai gas pipeline, have been put on hold. Moreover, after having considered China and Japan for years in the ESPO project, Russia has finally decided on route satisfying both sides. However despite the construction is going at full speed, there is no official agreement signed with either of the countries. It stands especially striking given the fact that the Russian section of China-oriented stage is to be completed by the end of 2009, and it was also reported that China has started construction of its section - the Daqin trunk - towards Russian Skovorodino.

With regard to the prospects for energy cooperation between Japan and Russia, one observation seems to be helpful as the outset. The answer if Russia is a viable energy source for Japan comes directly from the METI's White Paper on Energy.<sup>44</sup> Out of six projects listed there as the most important ones, three are related to Russia; two – Sakhalin I and II - are being run, and the ESPO project is sought to be participated in. A brief reference to figures also provides note-worthy information. For instance, the stakes of Japanese companies in Russian Sakhalin I and II projects are 30% and 22.5% (prior Gazprom's entry, 50%), respectively. Meanwhile, in Azerbaijani Azeri-Chirag-Guneshli (ACG) project Japanese companies hold

less than 14% stake (Inpex 10%, Itochu 3.92%), and in the BTC Pipeline project they possess less than 6% (Inpex 2.5%, Itochu 3.4%). Other telling examples are occurred due to different reasons cuts in Japanese companies' stakes. As such, in 2006, Inpex stake in Iranian Azadegan project shrunk to 10%, and in 2008, Inpex Holdings Inc. stake in Kazakhstani Kashagan project plummeted to 7.56%.<sup>45</sup>

Why Russia could be an important energy partner to Japan? The opportunities seem clear enough. It could allow Japan to diversify its oil imports away from the Middle East; it could allow Japan to diversify its gas supply geographically away from Southeast Asia; and possibly it could help shifting energy supply away from oil and more to towards natural gas.

Regarding colossal ESPO venture, Japan took the position that pipeline economics was not an issue since the governments (Russia, Japan and other countries concerned) could provide long-term credits, tax exemptions and subsidies to lower the pipeline's cost. This perspective led Tokyo to raise two points at the negotiating table: exploring reserves in East Siberia, and funding for feasibility studies and the construction itself.

After rather prolonged period of no official releases on bilateral energy cooperation, an importance of the bilateral ties in the area was stressed anew in Moscow on April 14, 2008. During the Japanese Foreign Affairs Minister Komura's talks with the Russian Industry and Energy Minister Khristenko, the parties expressed their adherence to the proposed by then Prime Minister Abe initiative on cooperation between Japan and Russia in the Far East and East Siberia.<sup>46</sup> Bilateral energy cooperation is to be further enhanced through the official, as well as business-to-business interchanges. It has been agreed on Japanese companies more active involvement into implementation of the large energy projects in East Siberia and the Far East. In particular, the ESPO project which is nearing the stage of the port Kozmino construction. That opens extensive opportunities for Japanese business' participation.

According to Japanese MOFA, steadily growing bilateral trade exchange reached unprecedented even for Soviet time level of \$21.2 bln, as of 2007. Over a half of the Russian exports consists of oil. Yet, judging against modest 1.6% that Russia holds in Japan's turnover, it remains a rather minor trade partner. However, a ground for careful optimism is emerging on pace with progression in bilateral cooperation.

Recently, Nippon Oil Corp., Japan's largest refiner, signed a long-term contract to buy oil from Sakhalin-1 project, the first such agreement by the country's refiners in a drive to diversify supply from the Middle East. Nippon Oil will purchase 720,000 barrels every quarter. Quantities and other conditions will be re-negotiated within three years. Imports of Russian oil to Japan quadrupled in 2007 to 6.99 mln t (44 mln barrels) compared with 1.71 mln t a year ago, according to the latest data from the METI.

An official Japan's approach towards Russia has always been watchful. The country has no formally instituted specialized bodies on energy partnership with Russia. The government established a dense

network of the institutions such as JBIC, JETRO, etc. that shapes NOCs' behaviour in a manner the government aspires to see, but with regard to Russia such capacity was utilised only slightly.

A more unbiased vision is sometimes lacking from both sides. A telling example is the ESPO project, which was over-politicized by foreign observers. If Russia were that greedy and cruel negotiator as it has been depicted by foreign media, it perhaps have had decided the matter long time ago. But it seems that there was no hypocrisy in then Transneft's spokesman Sergei Grigoriev comment that: "We are not building a pipeline to China or Japan. We are building a pipeline on the territory of Russia."<sup>47</sup>

Contemporary Japan's perception of Russian energy policy can be analyzed from the two angles: of official circles and business community. Opinions are a great deal varying within the groups, not to speak about differences observed between them. To exemplify this, reference to the views of two prominent experts in the field seems to be appropriate. Dr. Tsutomu Toichi, Senior Managing Director & CKO, Chief Executive Researcher, Charge of Strategic Planning Group of the IEEJ,<sup>48</sup> advocates the idea of Russia being self-centred and not so reliable. A historical legacy between the countries seems to be partially forming his personal opinion. Concluding from publications of two other outstanding experts at the IEEJ, Kensuke Kanekiyo Managing Director, Charge of Cooperative Research Group, and Dr. Ken Koyama Director, Strategy and Industry Research Unit, they examine Russia's stance towards the NEA and Japan, in particular, against a similar with Dr.Toichi ground.<sup>49</sup>

To be objective, Japanese business circles' general perception of Russian energy policy is pretty much different from that of the government. As such illustrations, it is tempting to represent opinions learned through the interviews with two prominent energy experts and practitioners - Masumi Motomura, who is a Chief Researcher of the Oil and Gas Business Environment Research Group at Japan Oil, Gas and Metals National Corporation (JOGMEC)<sup>50</sup> and Satoshi Sakai, a Deputy General Manager at the Department of Regional Strategy and Coordination of Mitsubishi Corporation.<sup>51</sup>

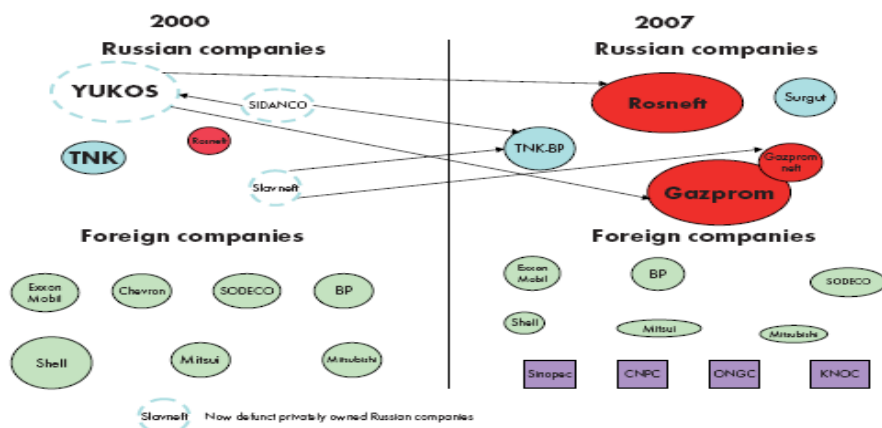
Masumi Motomura opines that Russia's contemporary energy policy enables foreign energy business cooperation. Furthermore, the expert's point is that compared with other energy-suppliers, Russia handles energy affairs more fairly. To support such view, Motomura draws attention to how the Sakhalin II project, in which Mitsui and Mitsubishi are investors, has been finally settled. With emotions left beyond the frame of this study, let us speak in impartial language of numbers. Gazprom purchased controlling share in the Sakhalin II for \$7.45 bln. By selling the stake to Gazprom, foreign investors not only recouped their expenses, but did reap a satisfactory benefit.<sup>52</sup> Although, Russia was pursuing its interest in developing Asia-oriented exports<sup>53</sup> by seeking share in the Sakhalin II project, it did not neglect the interests of the foreign parties involved. This stands at sheer difference with Kazakhstani case of Kashagan field. The situation was budding in somewhat analogous manner, but had been settled to the foreign investors' (including Japanese Inpex) less satisfaction, if not complete disappointment.

Satoshi Sakai, whose company is directly involved in development of Sakhalin II, expressed a similar view about fair deal between Gazprom and foreign investors in the project. The expert provided incredibly interesting observations on the overall system of Japanese energy companies' business practice and questioned if remaining internationally uncompetitive Japanese upstream corporations are able to fulfil an ambitious goal of producing 40% of the country's oil needs from Japanese-owned oilfields by 2030.

Korea's energy cooperation with Russia is mainly executed between Korean National Oil Corporation, KNOC and Rosneft. The companies made an impressive agreement to develop the West Kamchatka shelf that is estimated to hold about 900 mln t of oil equivalents at 26 sites. This deal will become a good model for the rest of NEAs aiming at pragmatic energy cooperation with Russian state-owned oil companies for two reasons. First, KNOC could successfully avoid the issue of strategically important field. Russian definition of "strategically important field" leaves a very small room for foreign companies' participation in projects at strategic deposits. Second, the Koreans have agreed to two key conditions and thus could satisfy Rosneft. The first condition is a 60:40 share division, i.e. Rosneft holds a 60% share of this project. This number is important for Rosneft, which wants to promote projects with foreigners from a superior position. The other condition is that the Korean company will invest in prospecting operations, taking on 100% of the risk in exploration, and Rosneft will be able to claim a share of the revenues once commercial production begins.

Be that as it may, a mere glance at the graph below may add an evidence that NEAs became more interested in the Far East and Siberia's energy resources development. While by the year of 2007 representativeness of the Western energy companies apparently diminished as compared to the year of 2000, the number of the NEAs' companies (in particular, Chinese) has significantly expanded.

**Graph 2.** Key stakeholders in oil and gas sector of Far East and Eastern Siberia, as of 2007.



Source: Poussenkova, Nina, All Quiet on the Eastern Front. Russian Analytical Digest # 33. 22 January 2008. pp. 14 [<http://www.isn.ethz.ch/news/rad/>]

## Conclusion

China, Japan, and Korea are the world's largest energy consumers. They are net-importers of crude oil with dependence on foreign sources ranging from China's 46% of the oil it consumes to nearly 100% for Japan and Korea.

To date, energy systems of NEA nations remain isolated that makes it difficult to jointly cope with the energy issues. At the same time, energy importing countries of NEA and abundant with energy resources Russia are naturally fitting into regional cooperative structure. Yet, Russia does not play a key part in energy supply of the troika. On the other hand, overcoming the barriers and using opening opportunities, the NEA countries have started the process of cooperation. On pace with the regional economies' energy demand increase, the need for energy collaboration will be only growing.

As the analysis of national energy policies reveals, the NEA countries have similar concerns and face the same set of challenges such as: dependency on foreign sources of energy, energy-related environmental impacts, energy conservation and efficiency, energy price spikes impact on national economies, etc.

A common perception that Russia got used to manipulating its energy resources as a foreign policy lever, that also looms high in NEA, is not necessarily accurate. Rather, dimensions for contemporary Russian energy policy are chiefly determined by economic conditions of the national energy fuel-energy complex, which is profoundly affected by prolonged period of lack of investment in the upstream sector, mismanagement, and overall short-sighted policy of squeezing the industry for colossal money.

Having experienced hardships associated with energy transit through the East European and post-Soviet states, Russia came to realize clearly the need to revise its geographical priorities in order to utilize benefits of the direct access to diversified export markets. Based on this, Russia stepped up the Asian vector in energy policy and embarked on strengthening ties with NEA nations.

What seems to be worth of noting is that from geographical and structural aspects of diversification the NEA countries, whose high dependence on the Middle East is infamous, have also started to consider seriously Russia's potential. Touching upon structural diversification, the NEAs aspire to go beyond a routine form of energy import. There is a number of new oil and natural gas projects in which NEA's NOCs are partaking or planning to stake in. In fact, energy cooperation between the NEAs already stretches beyond the crudes. To provide but a few examples, it is reported, that the LNG from Russian Sakhalin II project is fully contracted to Japanese, Korean,<sup>54</sup> and American companies. Also, Russian-Mongolian and Russian-Chinese ongoing collaboration in hydropower and nuclear energy segments, respectively, complement the picture of regional energy collaboration.

The following aspects seem to be especially favouring regional energy cooperation between the

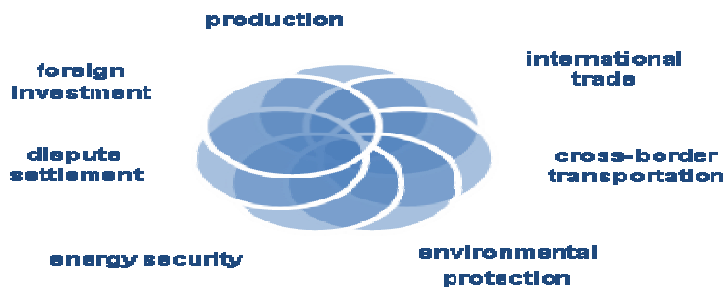
countries of NEA:

- geographical adjacency of NEAs;
- overall cooperation-oriented mood brewing in the NEA;
- significant degree of similarity between the interests and goals which is observed in the energy policies of NEAs;
- for regional energy producer – Russia - energy cooperation with the NEAs is secured as energy demand is gross and rapidly augmenting;
- for regional energy consumers, cooperation with Russia is a means of long-sought diversification which is a way to hedge national economies against heavy dependence on the Middle Eastern supply, etc.

Until recent, configuration of energy partnership in NEA was chiefly shaped by the NOCs that were guided by considerations of business` profitability. However, at the contemporary juncture of global energy affairs the role of the state in securing national energy supply has strengthened significantly. In NEA, where political, diplomatic, and economical aspects are intertwined into a complex setting, brining about multilateral large-scale energy initiatives makes national governments` active involvement absolutely indispensable. Once closer inter-government collaboration in NEA is established, energy cooperation between the regional economies would unfold smoothly. In turn, given the nature of energy-related initiatives, it would definitely spur a process of multilateral exchange on wide array of issues.

Evidently, energy cooperation brings countries to combine their resources and efforts because it is of long-term character; multi-faceted nature; high level of inter-linkage between the parties involved (as synchronisation between project`s stages is needed), etc. It also determines the necessity of regulatory regimes for investment, trade, transit, environment issues, dispute settlement, etc. and institutionalisation of frameworks to represent, promote and coordinate interests of large number of stakeholders (refer to Graph 3).

**Graph 3.** Spheres requiring cooperative mechanism for joint energy initiatives` implementation



Source: composed by the author.

The effects of two types can be expected, economic benefits - from freed capital and labour force migration, optimized trade exchange, eased formalities and elimination of disparities between nations' regulations, etc.; and political stability; both providing a sound impetus to formation a more integrated regional system.

## Acronyms

NOC - national oil company

EEC – energy efficiency and conservation

JOGMEC - Japan Oil Gas and Metals National Corporation

IEEJ – Institute of Energy Economics, Japan

IEA – International Energy Agency

CNPC - China National Petroleum Corporation

SOC – Shanghai Organization of Cooperation

NDPC – National Development Planning Commission, China

UNESCAP - United Nations Economic and Social Commission for Asia and the Pacific

ESPO – East Siberia Pacific Ocean pipeline project

## Endnotes and References

- 1 Engdahl, F.William, The Emerging Russian Giant Plays its Cards Strategically. October 20, 2006. p. 9 [http://www.engdahl.oilgeopolitics.net]
- 2 Linde, Coby van der, Energy Security in a Changing World. In: Bracken,P., Bremmer,I. and Gordon,D. (eds.), Managing Strategic Surprise. NY/ Washington DC/ London: Eurasia Group, 2005.
- 3 Goldthau, Andreas, Rhetoric versus reality: Russian threats to European energy supply// *Energy Policy* Kidlington: February 2008. Vol. 36, Issue 2. p. 686
- 4 Matsumura, Masahiro, Inside Japans' Energy Development Politics: What Outsiders Do Not Know. April 14, 2000 [http://taiwansecurity.org/IS/IS-Matsumura-0400.htm]
- 5 In particular, Satoshi Sakai, a Deputy General Manager at the Department of Regional Strategy and Coordination of Mitsubishi Corporation. Interview conducted on March 7, 2008.
- 6 Chrisstoffels, Jan-Hein, Getting to Grips Again with Dependency: Japan`s Energy Strategy. Clingendael International Energy Programme. 2007. p. 18.
- 7 Evans, Peter C., The Brookings Foreign Policy Studies Energy Security Series. Japan. December 2006 [http://www.brookings.edu/~media/Files/rc/reports/2006/12japan/12japan.pdf]
- 8 New National Energy Strategy. METI, May 2006.
- 9 Energy in Japan 2006. Agency for Natural Resources and Energy, METI, 2007.
- 10 Chrisstoffels, Jan-Hein, Getting to Grips Again with Dependency: Japan`s Energy Strategy. Clingendael International Energy Programme. 2007. p. 40.
- 11 Opinion expressed at the 2008 Working Group on Energy Cooperation in Northeast Asia (organized by the NEAEF in cooperation with KEEI, JCPAEC, and University of Hawaii. Hawaii. 19-21 March, 2008) to which the author was a



- member.
- 12 David G. Victor, What Resource Wars? (posted December 11, 2007)  
[ <http://www.nationalinterest.org/Article.aspx?id=16020>]
- 13 Understanding China's Energy Policy Economic Growth and Energy Use, Fuel Diversity, Energy/Carbon Intensity, and International Cooperation Background Paper Prepared for Stern Review on the Economics of Climate Change By Research Centre for Sustainable Development, Chinese Academy of Social Sciences [ [www.hm-treasury.gov.uk/media/B/B/Climate\\_Change\\_CASS\\_final\\_report.pdf](http://www.hm-treasury.gov.uk/media/B/B/Climate_Change_CASS_final_report.pdf)]
- 14 Lin, Jiang, Nan Zhou, Mark D. Levine, and David Fridley. Achieving China's Target for Energy Intensity Reduction in 2010: An exploration of recent trends and possible future scenarios. Ernest Orland Lawrence Berkeley National Laboratory. December 2006 [ [http://china.lbl.gov/china\\_pubs-policy.html](http://china.lbl.gov/china_pubs-policy.html)]
- 15 Zhongxiang Zhang, Putting China's African Oil Hunt into Perspective. East-West Center. Honolulu. 2006. [ [http://www.eastwestcenter.org/news-center/east-west-wire/archived-news-wires/?class\\_call=view&news\\_ID=358&mode=view](http://www.eastwestcenter.org/news-center/east-west-wire/archived-news-wires/?class_call=view&news_ID=358&mode=view)]
- 16 Penn, Michael, Director of the Shingetsu Institute for the Study of Japanese-Islamic Relations. Newsletter on 16th annual conference of the Korean Association of Middle East Studies held in Seoul on December 7<sup>th</sup>, 2007. [ <http://www.shingetsuinstitute.com/newsletter/december2007/december2007n839.htm>]
- 17 The Second National Energy Plan. Retrieved from [ <http://keei.re.kr>]
- 18 Bustelo, Pablo, Energy security with a high external dependence: the strategies of Japan and South Korea. Elcano Royal Institute. Working Paper WP 16/2008. April 14, 2008  
[ [http://mpira.ub.uni-muenchen.de/8323/1/MPRA\\_paper\\_8323.pdf](http://mpira.ub.uni-muenchen.de/8323/1/MPRA_paper_8323.pdf)]
- 19 Moon Young-Seok, Energy Demand Forecast and Energy Policy of Korea. In Energy Policy of Korea, 2004; Pak, Y. D., A Study on Establishment and Operation of Northeast Asia Energy Cooperation Network, 2004  
[ <http://www.keei.re.kr>]
- 20 Retrieved from [ <http://neae.keei.re.kr>]
- 21 Harrison, Selig S., Gas and Geopolitics in Northeast Asia: Pipelines, Regional Stability, and the Korean Nuclear Crisis// World Policy Journal. Vol. XIX, No 4, Winter 2002/03 [ <http://www.worldpolicy.org>]
- 22 For more details see: Shadrina, Elena, Energy Cooperation in NEA: An Insight into Frameworks and Dimensions// Journal of the Japan Sea Rim Studies. 2008 (forthcoming)
- 23 Katja Yafimava, Jonathan Stern, The 2007 Russia-Belarus Gas Agreement. Oxford Energy Comment. January 2007 (accessed at < [http://www.oxfordenergy.org/pdfs/comment\\_0107-3.pdf](http://www.oxfordenergy.org/pdfs/comment_0107-3.pdf)>)
- 24 Sevastyanov, Sergey. "The More Assertive and Pragmatic New Energy Policy (NEP) in Putin's Russia: Security Implications for Eurasia and Northeast Asia" Paper presented at the annual meeting of the International Studies Association 48th Annual Convention, Feb 28, 2007 [ [http://www.allacademic.com/meta/p179841\\_index.html](http://www.allacademic.com/meta/p179841_index.html)]
- 25 Gazprom – risk opravdan. Research by Investment Company Financial Bridge. April 2, 2007. p. 5 (in Russian).
- 26 Planovaya stagnatsiya// Kommersant. № 47(3864). 24.03.2008 [ <http://www.kommersant.ru>] (in Russian)
- 27 Woodruff, Yulia, Russian Oil Industry Between State and Market. Fundamentals of the Global Oil and Gas Industry, Petroleum Economist Publications. 2006.
- 28 As such, the examples of Venezuela and Bolivia are often referred to.
- 29 Sutela, Pekka, Economic Growth Remains Surprisingly High. Russian Analytical Digest. # 38. 2 April 2008. pp. 2-7  
[ <http://www.isn.ethz.ch/news/rad/>]
- 30 [ <https://www.cia.gov>]
- 31 Goldthau, Andreas, Five myths about the “energy superpower”// Policy Review. February&March 2008  
[ <http://www.hoover.org/publications/policyreview/14931716.html>]
- 32 Statistical Review of World Energy. British Petroleum. 2006 [ <http://www.bp.com>]
- 33 Repin, Konstantin, Chayandinskoe: pretседent sozdan// RusEnergy. April 21, 2008 [ <http://www.rusenergy.com>]
- 34 Krutikhin, Michail, Rossiiskaya neftegazovaya politika idyot v rusle iranskih metodov regulirovaniya otrasli// RusEnergy. Online Edition. February 14, 2008.

- 35 Von Hippel, David, Hayes, Peter, The DPRK Energy Sector: Recent Status, Problems, Cooperation Opportunities, and Constraints. Nautilus Institute [vps.stanleyfoundation.org]
- 36 Mimura, Mitsuhiro, Current Status of the Economy in the Democratic People's Republic of Korea. Discussion Paper # 0706e. ERINA. December 2007.
- 37 Gulidov, Ruslan, Kim, Kyuryoon, Northeast Asian and South-North Korean Energy Cooperation. In: Kim Kyuryoon (ed.) New Linkages of Northeast Asian Regional Cooperation. Seoul: Korean Institute for National Unification, 2007. p. 165.
- 38 Poussenkova, Nina, All Quiet on the Eastern Front. Russian Analytical Digest # 33. 22 January 2008. pp. 13-18 [http://www.isn.ethz.ch/news/rad/]
- 39 Perovic, Jeronim, Russian Energy Power Abroad. Russian Analytical Digest. # 33. 22 January 2008. pp. 2-5 [http://www.isn.ethz.ch/news/rad/]
- 40 Ahn, Se Hyun, Energy Security in Northeast Asia: Putin, Progress and Problems Asia Research Centre Working Paper 20. 2007 [http://www.lse.ac.uk]
- 41 Shadrina, Elena, Energy Cooperation in NEA: An Insight into Frameworks and Dimensions// Journal of the Japan Sea Rim Studies. 2008 (forthcoming)
- 42 Takeda, Yoshinori, Russia's New Political Leadership and its Implication for East Siberian Development and Energy Cooperation with North East Asian States. Russian Analytical Digest # 33. 22 January 2008. pp. 5-8 [http://www.isn.ethz.ch/news/rad/]
- 43 Personal communication at the 2008 Working Group on Energy Cooperation in Northeast Asia. 19-21 March, 2008.
- 44 第4章第1節2. 主要なプロジェクト. エネルギー白書 2007年版 [http://www.enecho.meti.go.jp/topics/hakusho/2007energyhtml/index2007.htm]
- 45 JOGMEC 50 %, Inpex 45 %, Mitsubishi Corp. 2.5 %, and Japan Petroleum Exploration Co. 2.5 %
- 46 高村外務大臣のロシア訪問(結果概要)日露外相会談. 貿易経済日露政府間委員会共同議長間会合. 平成20年4月15日. [http://www.mofa.go.jp/mofaj/kaidan/g\_komura/russia\_08/kg.html]
- 47 Helmer, John, China beats Japan in Russian pipeline race// Central Asia. Online edition. 29 April, 2005 (accessed on April 18, 2008) [http://www.atimes.com/atimes/Central\_Asia/GD29Ag01.html]
- 48 Interview conducted on January 28, 2008. 10:00 – 11:00 am. Office of IEEJ, Tokyo
- 49 [http://eneken.ieej.or.jp/en/data/pdf/402.pdf]
- 50 Interview conducted on January 28, 2008. 12:30 – 13:30 pm. Office of JOGMEC, Tokyo
- 51 Interview conducted on March 7, 2008, 15:00 – 16:30 pm. Office of Mitsubishi Corporation, Tokyo.
- 52 Motomura, Masumi, Japan-Russia Cooperation on Oil and Gas Development// RBC's International Business Conference, Tokyo, Japan Day Two: Bilateral Fuel and Energy Cooperation. November 6, 2007 [http://www.rotobo.or.jp/activities/rbc/rbc3\_2.pdf]
- 53 Krysiak, Timothy, Agreement from Another Era: Production Sharing Agreements in Putin's Russia, 2000-2007. Oxford Institute for Energy Studies, 2007. p. 4.
- 54 Tokyo Gas (1.1 MT – 2007-2031); Tokyo Electric (1.5 – 2007-2029); Hiroshima Gas (0.21 – 2008-2028); Kyushu Electric (0.5 – 2009-2031); Toho Gas (0.5 – 2010 – 2033); Tohoku Electric (0.42 – 2010-2030); Saibu Gas (0.0085 – 2010-2028); Chubu Electric (0.5 – 2011-2025); Osaka Gas (0.2 – 2008-2028); KoGas (1.5 – 2008-2028); Shell (1.6 MT – 2008-2026)// Morikawa, Tetsuo, Natural Gas and LNG Supply/Demand Trends in Asia Pacific and Atlantic Markets (2006). IEEJ: September 2007 [http://eneken.ieej.or.jp/en/data/pdf/401.pdf]

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