PROSPECTS AND CONDITIONS FOR MUTUALLY BENEFICIAL COOPERATION RUSSIA AND NEA COUNTRIES IN THE GAS FIELD

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1. Current status and main indices of Russia’s fuel and energy complex

2. The Eastern vector is a strategic direction in Russia’s energy development in the first half of the 21st century

3. Gas supply to NEA: Russian perspectives

4. Necessary conditions and initiatives for successful mutually beneficial energy cooperation between Russia and East Asian countries

5. Conclusion
1. CURRENT STATUS AND MAIN INDICES OF RUSSIA’S FUEL AND ENERGY COMPLEX
## Indices

<table>
<thead>
<tr>
<th>Indices</th>
<th>Energy sector share, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years</td>
</tr>
<tr>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>Industrial production volume</td>
<td>47.5</td>
</tr>
<tr>
<td>Gross domestic product</td>
<td>13.0</td>
</tr>
<tr>
<td>Tax proceeds to the federal budget</td>
<td>40.0</td>
</tr>
<tr>
<td>Export</td>
<td>52.6</td>
</tr>
<tr>
<td>Investment in fixed assets</td>
<td>25.7</td>
</tr>
</tbody>
</table>
RUSSIA’S ROLE IN ENSURING GLOBAL ENERGY SECURITY

- Russia possesses 19% of the world proved coal reserves, 27% of the world proved natural gas reserves and 7% of the world proved oil reserves

- Russia produces (as of 2010):
  - Electricity - 1037 billion kWh (4.9%)
  - Coal - 317 million t (4.4%)
  - Oil - 505 million t (12.9%)
  - Natural gas - 649 billion m³ (18.4%)

( %) – of the world production

- Russia is the largest exporter of fuel and energy products

Sources: Russia in Figures, 2011
BP Statistical Review of World Energy, June, 2011
EXTRACTION OF RUSSIAN ENERGY RESOURCES (2010)

Electricity - 20 billion kWh (0.1 %)
coal - 116 million t (12/7 %)
Gas - 200 billion m³ (21 %)
Oil - 247 million t (13 %)

(%) – share in the world trade
(12/7) : 12% – steaming coal share in the world trade
7% – coking coal share in the world trade

> EXPORT OF FUEL AND ELECTRICITY FROM RUSSIA IN 2010

<table>
<thead>
<tr>
<th>Fuel and electricity</th>
<th>Export, total</th>
<th>Including export to East Asian countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil, mln. t</td>
<td>247.0</td>
<td>38.0 (15.4%)</td>
</tr>
<tr>
<td>Oil products, mln. t</td>
<td>132.0</td>
<td>11.8 (8.9%)</td>
</tr>
<tr>
<td>Gas, bln. m³</td>
<td>200.0</td>
<td>13.3 (6.7%)</td>
</tr>
<tr>
<td>Coal, mln. t</td>
<td>116.0</td>
<td>28.0 (24.1%)</td>
</tr>
<tr>
<td>Electricity, bln. kWh</td>
<td>20.0</td>
<td>1.1 (5.6%)</td>
</tr>
</tbody>
</table>
2. THE EASTERN VECTOR IS A STRATEGIC DIRECTION IN RUSSIA’S ENERGY DEVELOPMENT IN THE FIRST HALF OF THE 21ST CENTURY
EASTERN VECTOR OF RUSSIA’S ENERGY POLICY

- National interests of Russia require intensification of its mutually beneficial cooperation with Japan, China, Korea and other countries in Northeast Asia.

- Creation of new energy centers in East Siberia and the Far East will increase energy security of Russia, restore and strengthen broken fuel and energy ties between the regions and solve many important federal, interregional and regional problems.

- Fast and large-scale development of energy sectors in these regions and penetration to the energy markets in Japan, China, Korea and other countries of Northeast Asia should be considered as a primary means of timely ensuring the appropriate positions of Russia in this strategically important region of the world.

- Creation in the East of Russia and in Northeast Asia of a developed energy infrastructure in the form of interstate gas-, oil pipelines and transmission lines will decrease the cost of energy carriers, enhance reliability of energy and fuel supply to consumers in different countries and make easier the solution of environmental problems.
Russia completed the work on preparation of a large number
of policy documents determining the strategic development of
the economy and energy in the East of the country until 2030 in
the context of energy cooperation between Russia and EAST
Asia countries, such as "Energy Strategy of Russia until 2030",
"Program for Creation in East Siberia and the Far East of a
Unified System of Gas Production, Transport and Supply with
Potential Gas Export to the Markets of China and other APR
Countries" (Eastern Gas Program), “Strategy of Socioeconomic
Development of the Far East and the Baikal region until 2025",
"Strategy of Socioeconomic Development of Siberia until
2020", "Energy Development Strategy of East Siberia and the Far
East until 2030", "Program for Development of Oil Refining
Capacities in East Siberia and the Far East”, etc.

These documents suggest a considerable increase in mutually
beneficial supplies of Russian energy resources to the markets of
China, Japan, Korea, and other East and Northeast Asian countries
# POSSIBLE EXPORT OF ENERGY RESOURCES FROM RUSSIA

<table>
<thead>
<tr>
<th>Indices</th>
<th>2010 fact.</th>
<th>Forecast</th>
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<tr>
<td></td>
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<td>2015</td>
</tr>
<tr>
<td>Export, mln. tce., total</td>
<td>826</td>
<td>915-930</td>
</tr>
<tr>
<td>including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Oil, mln. t</em></td>
<td>247</td>
<td>230-240</td>
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<tr>
<td>Eastern direction</td>
<td>38</td>
<td>40-45</td>
</tr>
<tr>
<td><em>Gas, bln. m³</em></td>
<td>200</td>
<td>265-285</td>
</tr>
<tr>
<td>Eastern direction</td>
<td>13</td>
<td>20-25</td>
</tr>
<tr>
<td><em>Coal, mln. t</em></td>
<td>116</td>
<td>120-125</td>
</tr>
<tr>
<td>Eastern direction</td>
<td>28</td>
<td>30-35</td>
</tr>
<tr>
<td><em>Electricity, bln. kWh</em></td>
<td>20</td>
<td>20-25</td>
</tr>
<tr>
<td>Eastern direction</td>
<td>1</td>
<td>4-8</td>
</tr>
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</table>

Source: Substantiating materials to “The Energy Strategy of Russia until 2030”, Estimations of the author
3. GAS SUPPLY TO NEA: RUSSIAN PERSPECTIVES
PROSPECTIVE GAS PRODUCING CENTERS IN EAST SIBERIA AND THE FAR EAST

Total reserves $C_1 + C_2$ – 9054 billion m$^3$

Krasnoyarsk center reserves $C_1 + C_2$ – 1380 billion m$^3$

Yakutia center reserves $C_1 + C_2$ – 2386 billion m$^3$

Irkutsk center reserves $C_1 + C_2$ – 4026 billion m$^3$

Sakhalin center reserves $C_1 + C_2$ – 1262 billion m$^3$

Factor 1

Russian gas and oil resources become more and more attractive in the markets of NEA countries as a result of increasing investment and other risks in the Middle East.
Oil and natural gas markets for the Russian consumers in the East of Russia will be relatively limited:

- Potentialities of oil and natural gas production are many times higher than domestic demands
- Reliability of oil and natural gas supplies from the eastern regions of Russia to NEA countries is very high
Prices of natural gas become the priority in negotiations.

Natural gas will not be cheap in Russia, since the policy of leveling the prices of energy carriers and adjusting the price structure of some kinds of fuel to the world ratios comes into play.
• Natural gas of the Siberian platform is unique in the content of helium and ethane, which essentially increases *its consumer value*

• Natural gas of the Siberian platform contains more than 0.3% of helium and 5-7% of ethane

• Helium reserves in the gas fields of the Siberian platform are estimated at 8.6 billion m$^3$, or above 20% of the world helium reserves

• In the future Russia can be the world largest helium exporter
At present the necessity to deliver not only hydrocarbon resources, but products of their advanced processing with higher value added to the international markets is clearly recognized at all levels in Russia. For this purpose it is planned to increase in the eastern regions of Russia output of oil products and create gas-chemical industry, whose products are in rather high demand in Russia and in NEA countries.
The Russian government, regional authorities and companies have started large-scale development of energy resources in the East of the country.
PROSPECTS FOR NATURAL GAS SUPPLIES TO THE MARKET OF APR COUNTRIES

Source: V.P. Timoshilov, FIEF-2011
Probable reserves of the Okhotsk sea shelf are estimated at 1.6 bln. t of oil and 5.0 trln.m³ of natural gas
5. CONCLUSIONS
ENERGY IN EAST SIBERIA AND THE FAR EAST: CURRENT STATE AND PROSPECTS (Strategic scenario of development)
Perspective energy development in East Siberia and the Far East till 2030 requires huge investments. The estimated cost of such a strategy is $200-250 billion, $80-85 billion should be invested in development of oil and gas production and main oil and gas pipelines (only for new energy enterprises).

This strategy of energy development in East Siberia and the Far East will probably not be realized without attraction of foreign investments. This is the next specific feature of Russia as a player in the energy markets of NEA countries.
II. FIVE REQUIREMENTS FOR MUTUALLY BENEFICIAL COOPERATION IN THE FIELD OF ENERGY

1. Political will and serious intentions of participants to implement a specific energy project mutually beneficial for each country.

2. Coordination of economic and energy policy between the central, regional authorities and business of the countries in development of inter-country energy projects.

3. Comprehensive and system estimation of consequences (effects) of implementation of large-scale interstate energy projects, particularly under high uncertainty of future development, economic risks and global challenges for the countries, regions and energy companies.

4. Generation of mutually acceptable mechanisms for implementation of interstate energy projects (organizational, economic, legal and other mechanisms).

5. Development and implementation of the interstate projects by the international team (at all the stages: from feasibility study and design works to their realization).
THE NECESSITY TO ELABORATE AN INTEGRATED SCIENTIFICALLY GROUNDED STRATEGY OF ENERGY DEVELOPMENT IN THE NORTHEAST ASIA COUNTRIES TAKING INTO ACCOUNT IMPORT OF RUSSIAN ENERGY RESOURCES HAS BECOME URGENT

- Currently the main outlines of the energy cooperation in NEA are clear enough. The resource base of countries supplying energy resources and the energy markets of consuming countries have been properly studied. Intensive attention should be paid to the implementation mechanisms of coordinated actions of participants (countries, regions, companies) in terms of economic, legislative and other initiatives aiming to implement large-scale interstate energy projects.

- Energy companies and their research Institutions in Russia and in the NEA countries should stimulate the work in this direction in order to make an appropriate contribution to solution of the problem significant for all the countries of the regions.
Thank you very much for your kind attention!