Russian Oil and Gas: At a Crossroad

Dr. Tatiana Mitrova
Head of Oil and Gas Department
Energy Research Institute of the Russian Academy of Sciences

London
September 6, 2013
The role of oil and gas for the Russian Federal budget is huge and it is growing: 40% in 2012 compared to 9% in 2000

Source: http://www.roskazna.ru/reports/fb.html
1. Changing global gas markets: implications for the Russian gas exports to Europe

2. Gas export diversification and domestic market development

3. Russian oil production: how to sustain volumes?
Global LNG supply is expected to boom by the end of this decade with Australia, USA and Canada becoming the largest market players.
Situation on the European gas market during the last years did not favor Russian exports...

- Growing supplies of LNG
- Diversification of pipeline supply sources

- Spot volumes are increasing very fast (30-40% p.a.)
- Majority of the European stakeholders support transition to the spot pricing

- Lower than contracted volumes
- Recovers very slowly
- In the power sector gas is strongly competing with coal

- Unbundling
- Gas Target Model requires all gas to be supplied at the virtual hubs
...but European gas market is going to be tight until 2015-2016 as LNG is diverted to Asia; post 2016 very limited new supplies will become available and there will be an additional call on the over-take-or-pay volumes: good opportunity for Russia to enhance its position

**European gas balance**

Source: WEO2011, IEA; Cedigaz; ERI RAS.
Russian position in Europe will largely depend on gas pricing: traditional “Groningen” model is questioned now, as even renegotiated oil-linked contract prices are higher than spot-based.
Evolution of the Russian gas export strategy: what will be the Russian response?

<table>
<thead>
<tr>
<th>Period</th>
<th>Strategy</th>
<th>Volume maximization, Price damping</th>
<th>Price maximization and volume growth</th>
<th>Minimal price adjustments acceptable for the consumers (price maximization in the new conditions), stagnating volumes</th>
<th>Most probably price maximization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-2002</td>
<td>Traditional strategy</td>
<td>Volume maximization, Price damping</td>
<td>Price maximization and volume growth</td>
<td>Minimal price adjustments acceptable for the consumers (price maximization in the new conditions), stagnating volumes</td>
<td>Most probably price maximization</td>
</tr>
<tr>
<td>2002-2008</td>
<td>Miller`s team strategy</td>
<td>Price maximization and volume growth</td>
<td>Price maximization and volume growth</td>
<td>Minimal price adjustments acceptable for the consumers (price maximization in the new conditions), stagnating volumes</td>
<td>Most probably price maximization</td>
</tr>
<tr>
<td>2009-2013</td>
<td>Anti-crises strategy</td>
<td>Volume maximization, Price damping</td>
<td>Price maximization and volume growth</td>
<td>Minimal price adjustments acceptable for the consumers (price maximization in the new conditions), stagnating volumes</td>
<td>Most probably price maximization</td>
</tr>
<tr>
<td>2013-2020</td>
<td>??</td>
<td>Volume maximization, Price damping</td>
<td>Price maximization and volume growth</td>
<td>Minimal price adjustments acceptable for the consumers (price maximization in the new conditions), stagnating volumes</td>
<td>Most probably price maximization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market/Role</th>
<th>Traditional strategy</th>
<th>Miller`s team strategy</th>
<th>Anti-crises strategy</th>
<th>???</th>
</tr>
</thead>
<tbody>
<tr>
<td>One target market – Europe</td>
<td>Only pipeline gas</td>
<td>One target market – Europe</td>
<td>Only pipeline gas</td>
<td>Attempts to diversify markets (Asia)</td>
</tr>
<tr>
<td>Russian role – dominant regional supplier</td>
<td>Russian role – dominant regional supplier</td>
<td>Russian role – regional swing producer</td>
<td>Russian role – global swing producer?</td>
<td>Russian role – global swing producer?</td>
</tr>
</tbody>
</table>
Gazprom could give further price discounts and increase its market share, but Russia’s strategic choice is in favor of the short-term profit maximization...

We were faced with the choice of whatever was to maintain the supply volumes and the market share, or make the profit our high priority. As a public and commercially oriented company, Gazprom is interested in increasing profits to provide income to shareholders. Therefore, the choice was made, the correct one, in favor of the revenues, and the year results confirmed that.

Alexander Medvedev,
Gazprom Export
...ensured by the existing portfolio of the long-term contracts, which guarantees stable sales volumes for Russia until at least 2022.
## Oil indexation vs. gas indexation: "a bird in hand is worth two in the bush" approach

<table>
<thead>
<tr>
<th>Oil indexation</th>
<th>Spot indexation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Disappearing gas glut on the European gas market in the medium term – gap between oil-indexed and spot prices already started to narrow</td>
<td>- Strong pressure from the customers side</td>
</tr>
<tr>
<td>- Gazprom will face next price reopening only after 2015, and contract expiration – only by 2022</td>
<td>- Investigation of the European Commission against Gazprom`s pricing</td>
</tr>
<tr>
<td>- With high oil prices even lower volumes are providing high revenue</td>
<td>- Gazprom could demand financial compensation for contract review + 3rd Package exemption for the South Stream and NEL + transitional period for price adjustments + European-level financial support for its mega-projects (like EBRD and other European financial institutions)</td>
</tr>
<tr>
<td>- New projects demand high prices (they have negative margins under spot prices, given that they have to pay export duties) and oil indexation is more convenient for the project financing</td>
<td>- Gazprom could become a dominant player manipulating the spot market by adjusting its supply volumes</td>
</tr>
<tr>
<td>- Russian Government needs the money right now</td>
<td></td>
</tr>
</tbody>
</table>

There are strong commercial reasons for Gazprom to protect the oil indexation at least during the next 3-5 years
1. Changing global gas markets: implications for the Russian gas exports to Europe

2. Gas export diversification and domestic market development

3. Russian oil production: how to sustain volumes?
Everybody is expecting new opportunities on the booming Asian gas markets, but by 2020 there is already no market niche in China...

Sources: IEA, Cedigaz, Enerdata, ERI RAS.
…and OECD Asia is quickly contracting the North American LNG

Japan and South Korea contracts and gas balance

Sources: IEA, Cedigaz, Enerdata, ERI RAS.
Eastern Gas Program is developing, but as there are still no SPAs, the window of opportunities is becoming smaller and price negotiations have now to take into account Henry Hub pricing of the US LNG.
There are 7 Russian LNG projects under consideration currently, but all of them face commercial, technical and regulatory challenges. LNG export permissions might be approved only for special cases and only under very strict control of the State. Due to the limited volumes and long lead time these LNG projects will not significantly affect Russian and global balance during this decade. In the longer term Russian LNG export could reach up to 50-70 bcma. 
Independents are improving their positions on the domestic market, though complete market liberalization and Gazprom`s ownership unbundling are not currently under discussion.

**Russian gas production structure**

- **Gazprom**
- **Other producers**
- **Share of non-Gazprom producers**

*Other producers include PSA and APG*

Sources: CDU TEK, ERI RAS
But at the same time the industry is consolidating, now there are only three major non-Gazprom players left on the market: NOVATEK, Rosneft and LUKOIL

**Natural gas production by the companies with access to the UGSS**

*Sources: CDU TEK, ERI RAS*
Limited demand growth on the domestic market enforces competition between major players for the most attractive market segments.

**Russian gas demand by sector until 2020 (optimistic scenario)**

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2020</th>
<th>Δ</th>
<th>AGR 2012-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total consumption</td>
<td>428</td>
<td>468</td>
<td>40</td>
<td>1,12%</td>
</tr>
<tr>
<td>Power generation</td>
<td>188</td>
<td>201</td>
<td>14</td>
<td>0,88%</td>
</tr>
<tr>
<td>Centralized heating</td>
<td>72</td>
<td>64</td>
<td>-7</td>
<td>-1,36%</td>
</tr>
<tr>
<td>Industry and feedstock</td>
<td>79</td>
<td>94</td>
<td>15</td>
<td>2,17%</td>
</tr>
<tr>
<td>Residential</td>
<td>75</td>
<td>86</td>
<td>11</td>
<td>1,78%</td>
</tr>
</tbody>
</table>

Sources: Rosstat, ERI RAS.
At the same time the Government frightened by the industrial output decline is ready to slow gas prices growth down to the rate of inflation, which is justified by lower European prices and weak domestic demand.

Sources: MED, ERI RAS.
1. Changing global gas markets: implications for the Russian gas exports to Europe

2. Gas export diversification and domestic market development

3. Russian oil production: how to sustain volumes?
Main part of the Russian conventional oil is concentrated in the declining Soviet-time fields

Structure of the Russian oil production

<table>
<thead>
<tr>
<th>Category</th>
<th>2012</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional oil</td>
<td>30%</td>
<td>41%</td>
</tr>
<tr>
<td>Oil deposits with low recovery factor</td>
<td>59%</td>
<td>34%</td>
</tr>
<tr>
<td>Heavy oil and bitumen</td>
<td>4%</td>
<td>12%</td>
</tr>
<tr>
<td>Oil from gas deposits</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Shale and tight oil</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

* According to the Energy Strategy-2030 and Social-Economical Development Forecast Up To 2030

Source: ERI RAS.
In order to sustain production, Russia needs to develop new fields, which, however, are not competitive under the current tax regime. Higher production estimates are justified by the vast resource base, but require completely different taxation system.

Sources: CDU TEK, LUKOIL.
Russia has a huge potential for Enhanced Oil Recovery: best practices would provide additional 4 bln t without the need to build new infrastructure, but adjustments of the tax regime are the must.

Potential for increasing ORF in Russia

~4 bln t of recoverable conventional oil reserves

target ORF 37%

achieved ORF 20%

~43%

achieved ORF

~50%

achieved ORF

Russia

USA

Norway

Sources: Energy Ministry, LUKOIL.
Unconventional oil and Artic: huge potential, but high costs and lack of technologies make these projects marginal under the current taxation.

Unconventional oil reserves

Arctic production volume forecast

Sources: Energy Ministry, LUKOIL.
The normal Mineral Extraction Tax and export tax require much lower breakeven costs, then all sources of new supply have; the Government is not ready to change the system for profit-based taxation, therefore all the exemptions are currently adjusted in the manual regime.

Source: ERI RAS.
Conclusions

- More competitive external environment and domestic challenges are creating less favorable conditions for the Russian oil and gas industry. It will hardly be able to provide the same high share of the budget incomes in the future. ERI RAS estimates show, that unfavorable situation on the export markets could lead to lower export volumes and slow down Russian GDP growth by 1% p.a.

- Russian gas industry still has a huge potential for export growth, but without strict costs control, cautious evaluation of the export projects and more flexible pricing system these opportunities could be lost.

- Under current conditions, oil production in Russia can be maintained through development of the following areas:
  - enhanced oil recovery at existing fields
  - development of unconventional reserves
  - development of the new frontiers: new provinces in the Eastern Siberia and Arctic offshore

But to develop these areas, the Government has to change the whole taxation system, not just to give few exemptions.
Contacts

Energy Research Institute of the Russian Academy of Sciences

Nagornaya st., 31, k.2, 117186, Moscow, Russian Federation

phone: +7 985 368 39 75
fax: +7 499 135 88 70

web: www.eriras.ru
e-mail: mitrovat@rambler.ru