Prospects of Turkmen gas deliveries to Europe

18th REFORM Group Meeting, Salzburg
August, 2013
Agenda

- Overview of the Turkmen gas sector
  - Challenges of Turkmen gas supplies to Europe
  - Conclusions
Proven Gas Reserves of Turkmenistan (in tcm)

Source: BP Statistical Review 2013
Global Proven Gas Reserves (in tcm)

Source: BP Statistical Review 2013
Turkmen gas production(exports) (in bcm)

Source: BP Statistical Review 2013
Export Routes

The boundaries and names shown and the designations used on maps included in this publication do not imply official endorsement or acceptance by the IEA.

Source: IEA
## Turkmen Gas Exports (in bcm)

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>36,2</td>
<td>38,0</td>
<td>39,1</td>
<td>10,66</td>
<td>9,68</td>
<td>10,14</td>
<td>9,9</td>
</tr>
<tr>
<td>Iran</td>
<td>5,8</td>
<td>6,10</td>
<td>6,50</td>
<td>5,77</td>
<td>6,50</td>
<td>10,20</td>
<td>9,0</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td>3,55</td>
<td>14,25</td>
<td>21,3</td>
<td></td>
</tr>
<tr>
<td>Kazakhstan</td>
<td></td>
<td>0,30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0,9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>42,0</td>
<td>44,1</td>
<td>45,6</td>
<td>16,73</td>
<td>19,73</td>
<td>34,49</td>
<td>41,1</td>
</tr>
</tbody>
</table>

*Source: BP Statistical Review 2007-2013*
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The Nabucco Pipeline Project

Targeted gas supply sources for Nabucco and export route options

Austria

Nabucco

Turkey

Russia

Kazakhstan

South Caucasus Pipeline

Azerbaijan

Caspian Crossing

Turkmenistan

New feeder pipeline projected

Source: RWE
Transport Challenge

Transkaspische Pipeline

1. über 300 km lange Offshore-Pipeline verbindet Turkmenistan und Aserbaidschan

Offshore technische Pipeline

2. Verbindung der Offshore-Plattformen zwischen Turkmenistan und Aserbaidschan

CNG/LNG Schiffstransporte

3. Transport von Compressed Natural Gas (CNG) oder LNG

Transitroute durch den Iran

4. Ausbau der bestehenden Pipeline durch den Iran bis zur türkischen Grenze

Source: RWE
Challenges of the Trans-Caspian Gas Pipeline Project

- Strong opposition from Russia
  - Uses the unsolved legal status of the Caspian Sea as instrument to block the construction of the pipeline and citing ecological concerns
  - Avoidance of competing Turkmen gas in the (current oversupplied) European gas market
  - Keeping Turkmenistan in the Russian sphere of influence

- Border conflict between Azerbaijan and Turkmenistan

- Insistence of the Turkmen government to deliver gas only to the own border
The Southern Corridor

TANAP: 16 bcm/year in 2020
        23 bcm/year in 2023
        31 bcm/year in 2026
TAP: 10 bcm/year (initial capacity, expandable to 20 bcm/year)
### Delivery Commitments

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exports to China</strong></td>
<td>37-40</td>
<td>37-40</td>
<td>40-47</td>
<td>40-47</td>
</tr>
<tr>
<td><strong>Exports to Iran</strong></td>
<td>10-14</td>
<td>10-14</td>
<td>10-14</td>
<td>10-14</td>
</tr>
<tr>
<td><strong>Exports to Russia</strong></td>
<td>6-30</td>
<td>6-30</td>
<td>6-30</td>
<td>6-30</td>
</tr>
<tr>
<td><strong>Total Exports</strong></td>
<td>53-84</td>
<td>53-84</td>
<td>56-91</td>
<td>56-91</td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
<td>18-25</td>
<td>18-25</td>
<td>19-25</td>
<td>19-25</td>
</tr>
<tr>
<td><strong>Total (Exports + Consumption)</strong></td>
<td>71-109</td>
<td>71-109</td>
<td>75-116</td>
<td>75-116</td>
</tr>
<tr>
<td><strong>Production (IEA)</strong></td>
<td>66</td>
<td></td>
<td>84</td>
<td></td>
</tr>
<tr>
<td><strong>Production (OIES)</strong></td>
<td>74,7</td>
<td></td>
<td>83,9</td>
<td></td>
</tr>
<tr>
<td><strong>Production (Turk. Gov.)</strong></td>
<td></td>
<td>95</td>
<td></td>
<td>155</td>
</tr>
</tbody>
</table>

Source: BP, IEA, OIES
Is Azerbaijan really interested in being a transit country for Turkmen gas?

<table>
<thead>
<tr>
<th>Field</th>
<th>Reserves, proven or estimated</th>
<th>Companies</th>
<th>Production (bcm/yr)</th>
<th>Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shah Deniz 2</td>
<td>1.2 tcm, (condensate: 240 Mt)</td>
<td>BP 25.5%, Statoil 25.5%, Socar 10%, Total 10%, LukAgip 10%, OIEC 10%, TPAO 9%.</td>
<td>16-20</td>
<td>Q3 2018</td>
</tr>
<tr>
<td>Absheron</td>
<td>150 bcm to 340 bcm (condensate: 45 Mt)</td>
<td>Socar (40%), Total (40%), GDFSuez (20%)</td>
<td>6-15</td>
<td>2020-22</td>
</tr>
<tr>
<td>Umid</td>
<td>200 bcm; (condensate: 40 Mt)</td>
<td>Socar (possibly Nobel Oil)</td>
<td>2-10</td>
<td>2014</td>
</tr>
<tr>
<td>Babek</td>
<td>400 bcm; (condensate: 80 Mt)</td>
<td>Socar, foreign partners</td>
<td>6-15</td>
<td>2020-25</td>
</tr>
<tr>
<td>Zafar-Mashal</td>
<td>300 bcm (condensate: 37 Mt)</td>
<td>Socar</td>
<td>n/a</td>
<td>2025</td>
</tr>
<tr>
<td>ACG deep gas</td>
<td>300 bcm</td>
<td>Socar (a foreign partner is likely)</td>
<td>6-15</td>
<td>2020</td>
</tr>
<tr>
<td>Nakhichevan</td>
<td>300 bcm (condensate: 40 Mt)</td>
<td>Socar, RWE</td>
<td>6-15</td>
<td>2020-25</td>
</tr>
<tr>
<td>ACG deep gas</td>
<td>300 bcm</td>
<td>Socar (a foreign partner is likely)</td>
<td>6-15</td>
<td>2020</td>
</tr>
</tbody>
</table>

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Prospects of Turkmen gas supplies to Europe are rather slim due to following reasons:

- The transport problems are not solved, the transit option via Iran seems more probable than the construction of a Trans-Caspian Gas Pipeline, which is strongly opposed by Russia.

- The decisions taken concerning the Southern Corridor do not match the interest of the Turkmen government to supply large volumes (30 bcm/year), while Azerbaijan wants to increase supplies to Europe beyond Shah Deniz II and is being less interested in transiting Turkmen gas.

- Growing production and export capacities are bound to China in the next years, so the availability of large volumes for Europe is questionable.
Thank you for your attention!

Questions?