UKRAINE’S GAS PRODUCTION OPPORTUNITY ENCOURAGING INVESTMENT

Central and Eastern European Energy Policy Forum
May 2018
The government announced the plan to make Ukraine self-sufficient by 2020.

**Imported gas need in 2017**
- Consumption: 32 BCM
- Domestic production: 20.5 BCM
- Import need: 11.5 BCM

Note: Demand excludes natural gas, which was injected into storages.

**Ambitious goal for 2020 is to achieve energy independence**
- Consumption: ~27 BCM
- Domestic production: 27 BCM
- Import need: 0 BCM

Legend:
- Blue: State-owned UGV
- Blue: Other producers
Ukraine has a promising resource potential and attractive market prices.

**Reserves / Production Ratio Highest in Europe**

Years

<table>
<thead>
<tr>
<th></th>
<th>33</th>
<th>17</th>
<th>15</th>
<th>14</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Functional Domestic Gas Market with International Prices**

$/thcm, Wholesale Avg. 2017

<table>
<thead>
<tr>
<th></th>
<th>280</th>
<th>184</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: BP Statistical Review

Note: Wholesale commercial price includes VAT and does not cover transmission and distribution costs.
EXTENSIVE INFRASTRUCTURE ALLOWS RAPID COMMERCIALIZATION OF NEW DISCOVERIES

WELL DEVELOPED GAS TRANSMISSION INFRASTRUCTURE

DIRECT EXIT CAPACITY TO SIX COUNTRIES

RICH HISTORICAL LEGACY

Source: AGPU
PRODUCTION SHOWS STRONG CURVE OF GROWTH

NATURAL GAS PRODUCTION IN UKRAINE

<table>
<thead>
<tr>
<th>Year</th>
<th>UGV (BCM)</th>
<th>Uknafta</th>
<th>Independent</th>
<th>Growth dynamics</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>14.5</td>
<td>19.9</td>
<td>-0.7%</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>14.6</td>
<td>20.0</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>15.2</td>
<td>20.5</td>
<td>2.4%</td>
<td></td>
</tr>
</tbody>
</table>

UGV

<table>
<thead>
<tr>
<th>Year</th>
<th>BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>14.5</td>
</tr>
<tr>
<td>2016</td>
<td>14.6</td>
</tr>
<tr>
<td>2017</td>
<td>15.2</td>
</tr>
</tbody>
</table>

INDEPENDENT PRODUCERS

<table>
<thead>
<tr>
<th>Year</th>
<th>BCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.9</td>
</tr>
<tr>
<td>2016</td>
<td>4.1</td>
</tr>
<tr>
<td>2017</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Source: AGPU, UTG data
Technologies and investment are critical to ramp up production.

**Gas Wells Drilled Has Twofold**

Q-TY

- 2016: 98
- 2017: 120
- 2018: 190
- ... (Dotted line)
- 2020: 275 (230% increase from 2016)

**CapEx Is Expected to Double**

- 2016: 260
- 2017: 550
- 2018: 1,400 (330% increase from 2016)
- ... (Dotted line)
- 2020: 1,800

Sources: AGPU
UKRAINE IS ON THE RIGHT PATH TO LEAD INVESTORS BELIEVE

- Fiscal policy
- Regulatory framework
- Licensing rounds
FROM 2018 UKRAINE PROPOSES FAVORABLE AND STABLE FISCAL REGIME

UKRAINE IS CALLING FOR INVESTMENT IN GAS PRODUCTION

STIMULATING ROYALTY RATES

above 5 км
12%

5-YEAR STABILIZATION CLAUSE

below 5 км
6%

PSA 1,25%
50-YEAR STABILIZATION CLAUSE

Source: AGPU
Ukraine’s upstream sector has become much more attractive on an international scale.

Government share of pre-tax cash flow (onshore)

Note: discounted rate 10%, nominal terms, 250 bcm onshore field, long-term gas price: $6/mcf, cost: onshore - $1.55/mcf

Source: Wood Mackenzie, 2018
The new rules cut the red tape, advancing drastically E&P regulation for industry.
Around 50 blocks is supposed to be offered on gross acreage up to 15 000 sq.km.