Uranium Mining Capabilities in the Russian Federation

ARMZ Uranium Holding Co., Russia
Alexander Boytsov, Deputy Director General
ARMZ in Russian Nuclear Industry

**ARMZ**
- Uranium mining and supply
- Worldwide mining and exploration
- World’s #2 in uranium resources
- World’s #5 in uranium production

**Energoatom**
- Nuclear power plant operation, generation and sales

**Rosatom**
- 1st in the world in terms of nuclear power plants construction abroad
- 2nd in the world in terms of electric power generation at nuclear power plants

**Tenex**
- Uranium enrichment, export sales
- 40% of world’s uranium enrichment capacity

**TVEL**
- Nuclear fuel fabrication, export sales
- 17% or world’s nuclear fuel market (every 6th reactor)
ARMZ at a Glance

• The only uranium mining company in Russia
• 2nd world company by uranium resources
• 5th largest by uranium production
• Russian Priargunsky - the world’s largest in terms of aggregated historical uranium production
• Highly diversified by mining technology and geography - exploration and mining projects on 3 continents
• 14,000 employees at production sites and service companies

2008 Uranium Resources by Company (in situ)

- ARMZ 13%
- Kazatomprom 8%
- CAMECO 8%
- BHP Billiton 38%
- VOSTGOK 3%
- Uranium One 4%
- KAZ Minerals 8%
- Rio Tinto 10%
- AREVA 12%
- Navoi 4%

2008 Uranium Production by Company

- Rio Tinto 21%
- AREVA 17%
- CAMECO 19%
- ARMZ 10%
- Navoi 6%
- BHP Billiton 10%
- Kazatomprom 13%
- Paladin Energy 2%
- Uranium One 3%

Source: ARMZ
ARMZ Growth Results 2006-2008

ARMZ Uranium Production
- Priargunsky
- Zarechnoe
- Dalur
- Khiagda

Number of ARMZ Mines and Projects
- Operational and under construction facilities
- Planned mines
- Exploration ventures and new projects
- Management and service companies

- 16% growth of uranium output in two years
- 4-fold growth of uranium resources
- 16 uranium deposit licensed
- Number of subsidiaries and projects increased from 4 to 18. New joint ventures set up to mine, drill and explore for uranium in Russia and abroad, new management and service companies in operation
Uranium Production in Russia

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (t U)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>3253</td>
</tr>
<tr>
<td>2006</td>
<td>3190</td>
</tr>
<tr>
<td>2007</td>
<td>3413</td>
</tr>
<tr>
<td>2008</td>
<td>3521</td>
</tr>
<tr>
<td>2009</td>
<td>3611</td>
</tr>
</tbody>
</table>

**Production method**
- Underground mining: 87%
- In situ leaching: 13%
- Heap leaching: 6%

**Processing method**
- Conventional: 81%
- In situ leaching: 23%
- Heap leaching: 6%

**Deposit type**
- Sandstone: 13%
- Volcanic and caldera-related: 87%
ARMZ Global Presence

Operational and under construction facilities
1. Priargunsky
2. Khiagda
3. Dalur
4. Akbastau + Karatau
5. Zarechnoe

Planned facilities
6. Elkon
7. Gornoe
8. Olovskaya

Exploration ventures and Prospective projects
9. Mongolia
10. Canada
11. Russia
12. Namibia
13. Armenia
14. Ukraine
ARMZ projects pipeline

Perspective projects

Exploration projects

Planned mines

Mines existing and under construction

Mongolia

Africa

ARGK (Armenia)

SWA Uranium (Namibia)

NBUL (Canada)

Karkhu (Russia)

Elkon Lunnoe

Gornoe Olovskoe

Priargunsky Khiagda Dalur

Zarechnoe Akbastau Karatau

Perspective projects

Exploration projects

Planned mines

Mines existing and under construction
Existing uranium centers in Russia

<table>
<thead>
<tr>
<th>Location</th>
<th>Kurgan region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits</td>
<td>Dalmatovskoe, Kholovskoe</td>
</tr>
<tr>
<td>In-Situ U reserves (RAR+Inferred)</td>
<td>11 379 tU</td>
</tr>
<tr>
<td>Ore grade, %</td>
<td>0.03</td>
</tr>
<tr>
<td>Mining Method</td>
<td>In situ leaching</td>
</tr>
<tr>
<td>2008 U production</td>
<td>410 t</td>
</tr>
<tr>
<td>U production plan</td>
<td>800 t/year (to 2017)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Buryat Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits</td>
<td>Vitim district</td>
</tr>
<tr>
<td>In-Situ U reserves (RAR+Inferred)</td>
<td>27 356 tU</td>
</tr>
<tr>
<td>Ore grade, %</td>
<td>0.04</td>
</tr>
<tr>
<td>Mining Method</td>
<td>In situ leaching</td>
</tr>
<tr>
<td>2008 U production</td>
<td>61 t</td>
</tr>
<tr>
<td>U production plan</td>
<td>1 800 t/year (to 2018)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Zabaikalsky region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits</td>
<td>Streltsovky district</td>
</tr>
<tr>
<td>In-Situ U reserves (RAR+Inferred)</td>
<td>132 823 tU</td>
</tr>
<tr>
<td>Ore grade, %</td>
<td>0.159</td>
</tr>
<tr>
<td>Mining Method</td>
<td>Underground</td>
</tr>
<tr>
<td>2008 U production</td>
<td>3 050 t</td>
</tr>
<tr>
<td>U production plan</td>
<td>5 000 t/year (to 2020)</td>
</tr>
</tbody>
</table>
### Planned new uranium centers in Russia

<table>
<thead>
<tr>
<th>Location</th>
<th>Zabaikalsky region</th>
<th>Zabaikalsky region</th>
<th>Republic Sakha (Yakutia)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gornoe</strong></td>
<td>Gornoe - Berezovoe</td>
<td>Olovskoe</td>
<td>Elkon Ore Field</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
<td>Location</td>
</tr>
<tr>
<td><strong>Deposits</strong></td>
<td></td>
<td></td>
<td>Deposits</td>
</tr>
<tr>
<td><strong>In-Situ U reserves (RAR+Inferred)</strong></td>
<td>8 794 tU</td>
<td>12 868 tU</td>
<td>319 614 t</td>
</tr>
<tr>
<td><strong>Ore grade, %</strong></td>
<td>0,226</td>
<td>0,088</td>
<td>Au Reserves, t</td>
</tr>
<tr>
<td><strong>Mining Method</strong></td>
<td>Underground + Heap Leaching</td>
<td>Underground + Open pit, Block Leaching +Heap Leaching</td>
<td>Mining Method Underground</td>
</tr>
<tr>
<td><strong>U production plan</strong></td>
<td>600 t/year</td>
<td>600 t/year</td>
<td>U production plan Up to 5 000 t/year</td>
</tr>
</tbody>
</table>
ARMZ Uranium JVs in Kazakhstan

<table>
<thead>
<tr>
<th>JV</th>
<th>Capacity, tons U/y</th>
<th>Resources B+C1+C2, tons (U)</th>
<th>Resources (P1), tons (U)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JV Akbastau</td>
<td>3 000</td>
<td>25 100</td>
<td>58 900</td>
</tr>
<tr>
<td>Karatau</td>
<td>2 000</td>
<td>18 202</td>
<td>31 600</td>
</tr>
<tr>
<td>Zarechnoe</td>
<td>2 000</td>
<td>18 904</td>
<td>30 100</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7000</td>
<td>62 206</td>
<td>120 600</td>
</tr>
<tr>
<td>ARMZ share</td>
<td>3500</td>
<td>31 103</td>
<td>60 300</td>
</tr>
</tbody>
</table>

ARMZ U Production in Kazakhstan (tons U/y)
ARMZ uranium production outlook

- ARMZ plans to ramp up mines’ uranium production capacity to 16000 t per annum by 2026, including 12000 t in Russia
- Major part of required financing will be contributed by strategic investors
Russian Known Uranium Resources (as of 01/01/2009)

<table>
<thead>
<tr>
<th>Uranium Resources by Deposit Type</th>
<th>&lt;USD 80/kgU</th>
<th>&lt;USD 130/kgU</th>
<th>&lt;USD 260/kgU</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAR</td>
<td>100 400</td>
<td>181 400</td>
<td>181 400</td>
</tr>
<tr>
<td>Inferred</td>
<td>57 700</td>
<td>298 900</td>
<td>384 900</td>
</tr>
<tr>
<td>RAR+Inf</td>
<td>158 100</td>
<td>480 300</td>
<td>566 300</td>
</tr>
</tbody>
</table>

**Russia total known uranium recoverable resources 566.3 ths.t**
World economic & financial crunch: how U miners are affected

Uranium prices

U Miners Share Price

- Rio-Tinto, A$  
- BHP Billiton, A$  
- Cameco, C$  
- Uranium One, C$  
- Paladin Energy, A$  
- ERA, A$
World economic & financial crunch: how U miners are affected

Primary Uranium Producers
- Ramping up uranium production
- Expanding existing mines and mills,
- Acquisition of junior companies with attractive projects
- Establishing joint ventures in exploration for and mining of uranium

Junior Uranium Companies
- Maintaining or scaling down uranium production plans
- Lack of financial resources for project development/
  Raising capital becoming increasingly difficult
- Plans to build new mines delayed or abandoned
In the face of the world economic and financial crisis, ARMZ has expanded and developed its plans.

- Supported by Ministry of Natural Resources and Federal Agency of Resources & Mining, ARMZ implements a program for Russia’s uranium resources expansion.
- Expanded resources at operational mines and facilities under construction in Russia and Kazakhstan: Priargunsky, Dalur, Khiagda, Akbastau, and Karatau.
- Started exploration projects overseas.
- Started the program of uranium assets merging and acquisition.
Innovative Development of ARMZ Projects

Operational Enterprises
- Project’s expertise and implementation of project management systems
- Application of advanced technical tools and materials
- Implementation of modern underground mining equipment

Planned Enterprises
- Application of advanced methods for designing of uranium mining enterprises
- Implementation of up-to-date methods for construction of uranium mining enterprises
- Development and application of in situ leach methods of uranium mining

Mining and processing methods
- Development of efficient technologies for U mining, sorting, processing and production
- Intensification and further development of In-Situ uranium leaching method
ARMZ advantages and goals

To ensure the competitiveness of ARMZ through the creation of a diversified world-class mining company

- Unique Resource Base
- High level of experience and expertise
- Sustainable Uranium Demand
- Diversified Projects
- Long-Term Development Plans
- Governmental support

ARMZ Projects