

# Uranium Mining Capabilities in the Russian Federation

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#### **ARMZ Overview**

- 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 Production by Company**



Source: ARMZ

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# **ARMZ Growth Results 2006-2008**



**ARMZ Uranium Production** 

ARMZ Uranium Resources





#### 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**

Production	t U		
2005	3253		
2006	3190		
2007	3413		
2008	3521		
2009	3611		



#### Uranium production in 2008 – 3521 t







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

- Planned facilities
  - 6. Elkon
- 7. Gornoe
- 8. Olovskaya

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



#### **ARMZ** projects pipeline





# Existing uranium centers in Russia

Dalur		Khi	Khiagda		Priargunsky		
Location	Kurgan region	Location	Buryat Republic		Location	Zabaikalsky region	
Deposits	Dalmatovskoe, Khohlovskoe	Deposits	Vitim district		Deposits	Streltsovky district	
In-Situ U reserves (RAR+Inferred)	11 379tU	In-Situ U reserves (RAR+Inferred)	27 356 tU		In-Situ U reserves (RAR+Inferred)	132 823 tU	
Ore grade, %	0,03	Ore grade, %	0,04	1	Ore grade, %	0,159	
Mining Method	In situ leaching	Mining Method	In situ leaching	35	Mining Method	Underground	4
2008 U production	410 t	2008 U production	61 t	) Ones	2008 U production	3 050 t	P
U production plan	800 t/year (to 2017 )	U production plan	1 800 t/year (to 2018)	2	U production plan	5 000 t/year ( to 2020)	
	ротностно-тенических	КУРАЛЬСКИЙ Атыст Р-53 ыйоны ыйоны оны и провинции	Аликале Каликале	роснай - 120 Вит 43.7 ПР			A relief of the second s

ARMZ U

# Planned new uranium centers in Russia

Gornoe			Olovskaya			Elkon			
Location			Location	Zabaikalsky region		Location	Republic Sakha		
	region		Deposit	Olovskoe			(Yakutiya)		
Deposits	Gornoe - Berezovoe		In-Situ U reserves (RAR+Inferred) Ore grade, % 0,088			Deposits	Elkon Ore Field		
In-Situ U	8 794 tU	кон				In-Situ U reserves (RAR+Inferred)	319 614 t		
reserves (RAR+Inferred)		ö (			4	Au Reserves, t	140		
. ,	0.226	The .	Mining Method	Underground + Open pit, Block Leaching		Ore grade	0,146% U		
Ore grade, %	0,226	2							0,84 g/t Au
Mining Method	Underground + Heap Leaching	N		+Heap Leaching	i.	Mining Method	Underground		
U production	600 t/year	N	U production plan	600 t/year	1	U production plan	Up to 5 000 t/year		
plan		ЗАУРАЛЬСІ 34 тыс.т			Romer	N. T	N		
	прав портинано-металлогенически сперований		Оповское	Чарский ПР 120 Северо- Байкальский ПР 73 ВИТИМС 43.тыс.я ПР - 50 ВОСТОЧНО- ЗАБАЙКАЛЬСВИЙ 42.тыс.я	5	ньцовск			



# ARMZ Uranium JVs in Kazakhstan



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

#### ARMZ U Production in Kazakhstan (tons U/y)





## **ARMZ** uranium production outlook

Tons of U 18000 16000 JVs in 14000 Kazakhstan 12000 10000 Planned new 8000 enterprises 6000 Operating 4000 and under construction 2000 enterprises 0 

- 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)



#### **Uranium Resources by production method**

ARMZ

#### Uranium Resources by deposit type



Russia total known uranium recoverable resources 566.3 ths.t





# World economic & financial crunch: how U miners are affected



ARMO

#### **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



# **ARMZ Weathering the Crisis**



•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

In the face of the world economic and financial crisis, ARMZ has expanded and developed its plans

# Innovative Development of ARMZ Projects



ARMZ

- 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-todate 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