

**Russian Nuclear Materials & Enrichment Services
in the World Nuclear Fuel Market
(Supply & Demand) in 2017-2035.**

SC Rosatom's Plans and IBR's Forecasts

**International Business Relations, LLC (IBR™)
Department of Nuclear Power & Nuclear Fuel Cycle**

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List of Abbreviations & Measurement Units

ARMZ – JSC “Atomredmetzoloto” also called Uranium Holding Atomredmetzoloto

FA - Fuel assembly

HEU - Highly enriched uranium

LEU - Low enriched uranium

ERU – Enriched reprocessed uranium

EUP - Enriched uranium product. This term is used in the report to describe all kinds of LEU (UF₆, UO₂, FAs)

MEU - Medium enriched uranium

NIS – New Independent States (also known as CIS – the Commonwealth of Independent States, countries of the former Soviet Union except the Baltic States)

NU – Natural uranium

RepU - Reprocessed uranium (uranium recovered during reprocessing of spent nuclear fuel)

SC – State Corporation

JV – Joint venture

SWU - Separative work unit (the same as kgSWU)

kgSWU - 1 kg of SWU

tSWU - 1,000 kg of SWU

MSWU – 1,000,000 kg of SWU

tU – Metric ton of uranium as metal (for natural uranium 1 tU = 2,610 lb U₃O₈). This unit is used in the report for both natural uranium and enriched uranium.

THM – Tons of heavy metal. This term is used for low enriched uranium and MOX fuel.

Summary

In this report IBR™ collected information about the current official plans of the Russian nuclear industry, including plans concerning construction and FA supplies of Russian-designed NPPs in Russia and abroad, uranium mining by SC Rosatom's assets in Russia and abroad and use of secondary sources of uranium, extension of Russian SWU capacities, export of EUP and FA (FA-Square of Russian design) for Western-designed reactors.

We also prepared our own forecasts of future development in these key areas of the Russian nuclear industry. In this edition of the report we based our forecasts of the future demand for enriched uranium in regions outside the former USSR on a detailed analysis provided in **WNA report**. "Global Scenarios for Demand and Supply Availability 2016-2035". However, we took into account relatively recent changes in the Rosatom's plans and provided our own vision of nuclear power development in Russia and the former USSR and some others countries¹.

Official Russian plans and our vision of realistic development of the nuclear power and industry in the former USSR and other countries presented in this study are based on our analysis of numerous Russian and foreign sources and our understanding of future developments in the industry. Using these forecasts we numerically analyzed future supply-demand balances in the front-end part of the Russian nuclear fuel cycle industry for both official and our own scenarios of the future development for the period from 2016 through 2035. Results obtained in this study include distribution of Russian SWU capacity between various separation tasks (enrichment of natural uranium, tails stripping etc.), sources of natural uranium and other nuclear materials used to produce enriched uranium and assessment of future market share occupied by Russia in key regions of the world. The initial data, including detailed plans for Russian-designed NPP construction around the world and detailed results of our calculations are presented in Microsoft Excel tables and discussed at length in the text of the study allowing the reader to use them in his/her own analytical work.

¹ Analysis of WNA previous publications "The Global Nuclear Fuel Market. Supply and demand", suggests that realistic (bottom-line) scenarios of nuclear energy development formulated by WNA have always been too optimistic in contrast to IBR forecast made in the immediate past, which is much better correlated with the observed rates of global nuclear energy development.