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Kazakhstan's Uranium Exports and its Prospects

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The production and export of uranium lies at the very foundation of the well-being of the Republic of Kazakhstan. The huge reserves of this ore, the ease of its extraction (uranium in Kazakhstan is available for extraction at shallow depths) are all contributing to it being a major business advantage of this state. Therefore, it comes as no surprise that the cost of uranium production is relatively low, which transforms Kazakhstan into the largest uranium exporter in the world and a strategically important partner for a handful of states interested in the development of nuclear energy.

However, in recent years local exporting companies have faced a number of difficulties that was provoked by an abrupt drop in demand for uranium due the unfortunate Fukushima Daiichi nuclear disaster that occurred back in 2011. This event was followed by the decision to abandon nuclear energy that was taken by a number of countries, which resulted in an abrupt drop in uranium prices. In 2016, the price of uranium on the world market reached its lowest point in a decade. To prevent the prices from going down any further, Kazakhstan was forced to introduce a limit on the extraction levels of this ore.

In January 2017, it was decided to reduce uranium production levels in Kazakhstan by 10%, which amounts to the whopping 3% of all uranium production worldwide. The management of Kazatomprom, the national nuclear company, hoped that such a radical move would prevent the

prices from going down any further. Undoubtedly, a reduction in uranium production levels was to lead to certain losses suffered by the Kazakh economy, but should Astana have failed to cut down on the uranium production volumes, then the price drop tendency could become irreversible. However, this decision has actually resulted in prices getting stabilized.

Last month, Kazakhstan's energy minister Kanat Bozumbayev, while addressing the parliament announced that the worldwide price of uranium increased by 20%. The government of Kazakhstan believes that a decline in production is a temporary measure, and soon the demand for nuclear fuel will begin to grow again. This must happen due to the fact that a number of nuclear power plants in Japan, which has come to grips with the fact that it cannot survive without atomic energy, is going to be restarted. Additionally, there's a list of new nuclear power plants in different Asian and African countries that are about to be launched. In spite of the grim experience that the world has got with the Fukushima Daiichi, most experts agree that nuclear power niche will keep growing steadily, therefore the price drop trend that was provoked by the events that occurred in Japan back in 2011 is going to be reversed. Nevertheless, the difficult years convinced Kazakh political elites that the uranium production industry needs a large-scale modernization. In 2016, a long-term reform of Kazatomprom started, aimed at improving both the efficiency of company's management and its production units. At the same time, modern technologies are now being introduced at every level of the production chain to make all procedures more cost-efficient.

In order to ensure that its nuclear industry will not be suffering from price fluctuations in the future, Astana needs two things: reliable export markets and the transition to the production of high-tech products, which will allow the country to get a considerably higher return than the one it had while it was exporting crude uranium. Both of these tasks are being addressed due to the cooperation that Kazakhstan has established with two largest nuclear market players of our time – China and Russia. China has already become the major importer of raw uranium from Kazakhstan, since it needs a lot of fuel to feed the 30 industrial reactors that are already operating in its territory, while another 20 are now being constructed. In the near future, Beijing plans to start the construction of dozens more of new reactors, so its demand for uranium will only grow.

In 2016, National Atomic Company Kazatomprom and China General Nuclear Power Corporation (CGNPC) have agreed to make a step forward in the area of joint projects. The Construction of this FA Manufacturing Plant is one of the breakthrough projects to be implemented under Kazatomprom's strategy which focuses on development of a vertically integrated fuel cycle company with advanced nuclear fuel fabrication capabilities. The plant will be managed through a joint venture "Ulba-FA", the founders of which are Ulba Metallurgical Plant JSC and CGN-URC. According to the existing agreements, China is going to be buying the products that the plant is going to produce for at least 20 years since the moment once the plant gets fully operational, which is supposed to happen in 2020. The scope of Chinese nuclear projects, the need for a large amount of nuclear fuel and the territorial proximity to Kazakhstan, transform China into an extremely profitable partner for Kazakhstan.

Another key partner of Astana in the nuclear industry is the Russian Federation. If China is the main buyer of locally produced uranium, then Russia occupies the position of a major exporter of

its top-notch technologies. As mentioned above, Kazakhstan wants to independently process natural uranium and export products with high added value. To this end, Kazakhstan needs to master all stages of the nuclear fuel cycle production, including the process of uranium enrichment. Since Kazakhstan is not prepared to take this step, it's been using the assistance provided to it by Russian specialists. With the purpose of enriching Kazakhstan's uranium, a joint Russian-Kazakh enterprise, the Uranium Enrichment Center, has been established, operating on the basis of the Urals Electrochemical Combine on the territory of the Russian Federation. As a result, a high-quality fuel is produced, which ensures the efficient operation of modern nuclear power plants. Over time, Kazakhstan expects are to be able to undergo the entire nuclear fuel cycle on its territory. In developing the necessary technologies, Russian experts will certainly help their Kazakh colleagues. It should be remembered that both Russian and Kazakh atomic scientists have been brought up by the one Soviet school, which greatly facilitates cooperation among them.

Another promising area for the Kazakhstan uranium mining industry is cooperation with the Islamic Republic of Iran, which continues to work on its nuclear program and needs fuel for its Bushehr nuclear power plant. The supply of uranium to Iran is currently hampered by the existing US veto. Nevertheless, given the crisis that has affected the uranium industry of Kazakhstan in recent years, it is difficult to expect that this country will turn its back on this market. In March 2017, Kazakhstan and Iran signed an agreement on the supply of 950 tons of uranium. Now the leadership of Kazakhstan is holding negotiations with the member countries of the "Comprehensive Action Plan", adopted in late 2015 to address the Iranian nuclear issue. The Kazakh side hopes to bypass the American veto diplomatically.

In conclusion, it should be noted that, in spite of the temporary difficulties associated with low uranium prices, the export of this mineral was and will be a reliable source of income for Kazakhstan. There is a reason to believe that nuclear power will soon be in major demand around the world, since it's not just the cheapest and most environmentally friendly, but also efficient. The sad lesson of Fukushima was not in vain, since modern nuclear reactors are now equipped with a security system capable of withstanding such impacts as Fukushima Daiichi couldn't.