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Kazakhstan Mining 2015

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«Национальный центр по комплексной переработке
минерального сырья Республики Казахстан»



МИССИЯ

Обеспечение устойчивого развития горно-металлургической отрасли Казахстана посредством создания научных основ, разработки и реализации конкурентоспособных технологий и научного сопровождения государственного регулирования ГМК

ВИДЕНИЕ

Стать отраслевым центром передовых технологий для ГМК. Интегрироваться в международную инновационную среду, обеспечив повышение уровня конкурентоспособности отечественной науки и экономики и вхождение Казахстана в число мировых лидеров

ДЕЯТЕЛЬНОСТЬ

Системное решение проблем в области геологоразведки, добычи и переработки минерального и техногенного сырья в целях модернизации действующих и создания новых предприятий по выпуску инновационных продуктов

Kazakhstan's Steady Rise to Mining Stardom

The largely unexplored country has a bright future ahead

Kazakhstan has long been overlooked as a major mining destination, but with vast untapped riches, it seems destined to become the next mining hotspot. The mining and metals sector of Kazakhstan already contributes around 19% to its GDP and represents about 16% of overall exports. It is the fourth largest copper producer with 40 million metric tons (mt) in proven reserves and has the world's ninth largest proven gold reserves and nearly similar levels of zinc. Almost all gold mining companies and properties have been fully privatized in Kazakhstan. The country is estimated to have major reserves representing the entire world's supply with 30% of chrome, 25% of manganese, 10% of iron ore, 10% of copper and 13% of lead zinc. Kazakhstan is also the largest producer of uranium as of 2009, and, in 2013, was responsible for 38% of global production. To top all this, Kazakhstan's substantial mineral resources include the world's largest chromium, vanadium, bismuth and fluorine deposits, and the country is also richly endowed with bauxite, coal, phosphate, titanium and tungsten. Kazakhstan is mainly focused on extraction and export of its raw materials with higher-value added processing done abroad.

Despite these prodigious resources, Kazakhstan has seen little exploration in the last 30 years, with the last large-scale exploration happening in the 1950s. The Soviet era data is still available and, although, is of good quality, it is not always complete. The government has recognized that Kazakhstan, already harnessing its oil and gas resources, can become a major mining destination that could rival countries such as Canada, Australia, and Russia; however, new exploration projects and substantial changes to its mining laws as well as the investment environment are needed. "Investors do not want to know that reputedly all the elements of the periodic table can be found in Kazakhstan, but rather what the investor benefits are, and most importantly what is the differentiator that would make Kazakhstan a more appealing investment target than another destination," said Tony Thornton, general director of SRK Consulting.

One example of foreign players entering the Kazakh market and being successful is the 2013 acquisition of Voskhod Chrome, a chrome mine and processing plant in northwestern Kazakhstan, by Istanbul based Yildirim Group from Russian mining giant Mechel. "Voskhod Chrome's integration process into YILMADEN Holding was flawlessly



Big Almaty Lake and surroundings. Photo courtesy of Lubo Novak.

executed, and the results have progressively improved almost every single month, with record-breaking performance in mine output, plant efficiency, machine uptime and finally sellable product output. Intense collaboration was achieved between Yildirim’s mining team and the already existing mechanized mining contractor at Voskhod,” said Alp Malazgirt, CEO of Yildirim Group.

Another recent announcement is a good example of how new investment may encourage others to enter the country. Rio Tinto and Kazgeology verbalized plans to invest \$6 million in the exploration of copper porphyry ore in the Korgantas area in the Karaganda province. While other mining majors like BHP and Vale have left Kazakhstan after encountering significant challenges, Rio Tinto has decided to stay and continues to conduct exploration activities. If they are successful and the Kazakh government commits to further improve the investment climate for the mining industry, more international players can be expected to enter and re-enter the market, which is Kazakhstan’s ultimate goal. Rio Tinto’s presence in Kazakhstan has been characterized by a patient and careful approach. They have first explored the possibility of working with Tau-Ken Samruk, but later decided to partner with Kazgeology instead on the previously mentioned project. Another project that is being discussed with Kazgeology is Balkhash-Saryshagan in central Kazakhstan. However, the negotiations there are ongoing and an agreement is yet to be reached.

The Kazakh government has allocated close to \$1 billion to aid exploration before 2019 and is looking to develop mining laws similar to those found in Australia and Canada. Additionally, Kazakh national companies will invest another \$3.3 billion in geological exploration in areas with good potential. The government wants to focus its search for minerals around single-industry cities, so-called mono-cities. Towns like Arkalyk are becoming uninhabitable due to depleting reserves of bauxite and the possibility of companies like ERG leaving the area. A billion mt of iron ore was discovered north of Arkalyk, in a town called Yesil, and now the state mining company Tau-Ken Samruk is looking to develop the deposit and possibly bring the 1,500 workers working in bauxite mines to the new location over the period of eight years, the time when bauxite is



supposed to run out. In 2012, President Nazarbayev instructed the government to develop a program for the development of mono-cities in 2012-2020. 27 such towns were selected with the total population of over 500,000 people. The largest ones to participate were Temirtau, Balkhash and Zhezkazgan in Karaganda region, Ekibastuz in Pavlodar region, Rudniy in Kostanai region, Zhanaozen in Mangistau region. These towns will receive significant support and investment to help their economies.

As previously mentioned, Kazakhstan has been working on details of a new mining law that will make it easier for foreigners to tap the nation’s riches and plans to award 50 to 100 exploration licenses in 2015. White & Case law firm reports that, “Kazakhstan will continue to roll out reforms at an ambitious pace. Several state authorities have already begun preliminary hearings to consider approvals for a draft code scheduled for the end of 2015 and a new framework to be implemented in early 2016. If the reforms pass as envisioned, they will enable international arbitration as a mechanism for dispute resolution, adopt international standards for calculating and reporting reserves, introduce retention rights, bring in simplified state control procedures and modify the tendering process, increase access to information including geological data, cut expert review requirements and approval times further and implement a comprehensive field development plan.”

Although progress on the new mining laws has been slow, it is certainly a step in the right direction. White & Case added: “The government has effectively limited the state’s pre-emptive rights,

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- Tony Thornton,
General Director,
SRK Consulting



The recently acquired Voskhod Chrome has been breaking performance records in output and efficiency. Photo courtesy of Yildirim Group.

eased and clarified the state's ability to unilaterally terminate mining contracts, reduced review requirements for project-related contracts, liberalised rules relating to exploration and production rights, and overhauled the frameworks for ownership, contract areas and disposal of rights."

Kazakhstan's mining industry is set to grow in value reaching \$30 billion by 2017 already taking the declining commodity prices into account. Coal, copper and gold are expected to be the main drivers of growth. Kazakhstan will need substantial foreign investment to make this a reality. Not only capital, but also the technology and technical know-how will be necessary to bring about these developments. Inadequate infrastructure is also another reason why Kazakhstan lags behind other mining countries. The country is well-developed in its urban centers, but as many new deposits are located in remote areas, a comprehensive infrastructure plan must be put in place. Transport routes, both road and rail, will be needed as well as sources of power and water. "It is very difficult to work in remote areas very far from the cities. To overcome this challenge, Kazdrilling is trying to work closer to the three main cities where we have our branches and we try to provide services not further than 500 km from these three cities. Many times the limitations of infrastructure increase the price of the services that we can provide," said Yernat Sergazinov, CEO of Kazdrilling, an Almaty based blasting services provider.

The country is holding a number of events, such as the Astana Mining and Metallurgy Congress in June, Mining World Central Asia in September, and Minex Central Asia in April 2016 to increase its vis-

ibility on the world stage. Kazakhstan is poised to become a booming mining destination, but a lot of work remains to be done ranging from legislative and regulatory framework to ensuring continued political stability in the foreseeable future as well as the development of its infrastructure in the more remote regions. The Kazakh government is taking positive steps toward change and is working hard to present itself as an investment friendly nation. •

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Yildirim Group**



Albert Rau

Vice Minister, Ministry of Investment and Development, Republic of Kazakhstan



"Historically, the mining industry has played a special role in the social life of Kazakhstan. Many mining facilities and processing plants are located in mono-cities, which were built around mining deposits, and today are fully dependent on the mining industry. The development of these cities relates directly to the development of a competitive mining industry."

The mining industry in Kazakhstan is governed by the Ministry of Investment and Development. What does this say about the importance of this sector for the country's economy?

The Ministry of Investment and Development has been governing the mining industry for the past five years. The ministry is continuously supporting the industry and provides resource base, energy resources, works on lowering tariffs for railway transportation and provides other incentives for further development of mining sector. Moreover, the ministry is continuously working on improving legislation, so that it can reduce unnecessary administrative barriers for international and local investors.

Historically, the mining industry has played a special role in the social life of Kazakhstan. Many mining facilities and processing plants are located in mono-cities, which were built around mining deposits, and today are fully dependent on the mining industry. There are 60 mono-cities in Kazakhstan, and support and promotion of these cities, as well as further development of mining facilities, has been one of the top priorities for the government of the past couple of years. The development of these cities relates directly to the development of a competitive mining industry.

The government amended the Law on the Subsoil and Subsoil Use in January 2015. What specific problems did the amendments address and why were they made at this time?

In January 2015, new changes were implemented in the Law on the Subsoil and Subsoil Use. These changes sought to strengthen the legislation governing the mining industry, improve the investment climate, and attract foreign direct investment in the mining sector. The main new feature of the law is the simplified process of granting rights, based on the Australian method, for unexplored pieces of land (not more than two square kilometers per one block). We expect to see the first contracts based on this scheme in the second and third quarter of 2015 and to auction at least 100 areas in total this year.

The law will also simplify access to geological data. We managed to dramatically decrease the time required to obtain such information from 240 days to one day. Moreover, we simplified the procedure for granting exploration contracts and small deposits, to remove extra administrative barriers.

Overall, the new law will increase transparency in decision-making as well as remove administrative barriers on all levels. These changes should boost the development of junior companies and simplify procedures for all mining companies.

Another revolutionary change was the introduction of a Mining Code, which will reflect the specificity of minerals more clearly. The code will also create an impetus to switch to international resource estimation standards.

Kazakhstan is competing with mining jurisdictions such as Peru, Chile, the DRC and others for international investment. What does Kazakhstan need to do to attract international investment?

We work on several events to attract international investors and companies to work in Kazakhstan. For the last six years, we have organized the international "Astana Mining & Metallurgy" (AMM) Congress. Recently, Kazakhstan received the right to host International Mining Congress in 2018. After EXPO 2017, we will have the infrastructure in place to host an event of such multitude and with so many international guests.

Kazakhstan remains largely undervalued by the international mining community, which is why events such as the AMM Congress and International Mining Congress will help to increase the country's visibility and recognition.

Mining companies globally have difficulties finding qualified staff. How do the government and local universities address this problem?

We certainly see a problem with finding the right talent, and indeed within the Exploration and Mining Works Program 2015-2019, we emphasized the importance of staff issues, training, attracting young people to work in mining, improving the image of mining professions, and increasing the competitive advantage of Kazakhstan on international arena for engineering talent. In this regard, we work closely with the Ministry of Education and Science of the Republic of Kazakhstan. In the new school year, the ministry will start new master's programs in fields of geology, hydrogeology and geophysics.

We identified 10 institutes and universities for technical industrialization and are planning to have 532 graduates from bachelor's programs in geology, including 21 "Bolas-hak" graduates. We always try to attract students from mono-cities to these programs because they will be the ones who will come back to the mining towns and continue to work in the industry.

Together with the assistance of Ministry of Investment and Development, the Association of Mining Companies and Association of Petroleum Geologists created a corporate fund called Zhas Geolog. This fund will increase awareness about geology as a career field and will attract more young school children and student to study geology.

Also in 2015, 60 specialists from Kazgeology will go through a training process at Rio Tinto, 10 employees will train with Geotech, and 16 employees will train with Iluka Resources.

What changes to the mining industry in Kazakhstan do you expect to see over the next three to five years?

2015 will be a difficult year for the mining industry and the Kazakh economy in general. The current difficulties will reveal those companies who are properly prepared to withstand the challenges presented by the global economy. Amendments to the Subsoil Law and development of a Mining Code will be crucial for the development of mining industry in Kazakhstan. •



Central Downtown Astana. Photo courtesy of [wikimedia commons/ken fairfax](#).

A Haven of Opportunities Abound in Kazakhstan

Kazakhs are eager to work with foreign partners to explore their country's resources



Kazakhstan is home to vast unspoiled natural beauty. Photo courtesy of Lubo Novak.

Despite the country finding itself in need of foreign investment both financial and technological, Kazakhstan's people are educated and hungry to succeed. Since the Soviet times, the country has fallen behind in terms of innovation and creativity, but, nevertheless, pockets of local innovation continue to thrive. Not only are Kazakhstan's companies engaged in successful joint ventures with foreign ones, but they themselves are shining examples of how to conduct their operations to a high standard. Kazatomprom, the national operator of Kazakhstan's exports of uranium and its compounds, runs some of the most advanced uranium mines in the world. The company also engaged in a number of joint ventures with the likes of Areva, Atomredmetzoloto, Cameco and Westinghouse.

One example of locally researched and produced innovative solutions is the National Center on Complex Processing of Mineral Raw Material of the Republic of Kazakhstan. The Center is committed to helping the mining industry in Kazakhstan develop. They strive to cooperate with both local and international players and have found substantial success in providing their technology to their clients. "Our Center united academic and industrial institutes in the sphere of mining and mineral processing in Kazakhstan. It was considered that the Soviet organiza-

tions were not working efficiently in terms of industrial application of scientific developments and the role of our Center was to accelerate and improve this situation, ensure scientific development, strengthen the scientific and technical potential of the country and aim for technological breakthroughs in Kazakhstan. In the beginning of the process, there was not enough capital to support all the scientific projects within the Center; similarly, our clients, both private and governmental organizations, also did not have the money to invest in our projects. Thus, we came up with an idea to also create production facilities within our Center to turn scientific ideas into actual products. Today, this aspect is one of our key competitive advantages, especially compared to other scientific organizations. Firstly, we are now acting as producers, and thus can create perfect solutions, and think of every single detail when it comes to developing new products. Secondly, we implemented dozens of projects and developed innovative solutions in Kazakhstan which are now also being used across the world. Thanks to this we can now communicate better with our clients and we now speak 'the same language'. Moreover, when we speak about the implementation of projects in Kazakhstan, we are confident that nobody knows our mineral wealth better than we do, and this factor has allowed us to



"Looking at most of the other mining projects in Kazakhstan; there are many apparent mistakes that have been made in the project development stage. Companies try to rush through development—skipping critical stages—and do not hire enough mining and project management professionals, all in an effort to save money."

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CEO, Syrymbet**

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- Abdurasul Zharmenov,
General Director, National
Center on Complex Processing
of Mineral Raw Material of the
Republic of Kazakhstan

be extremely successful in our market," said Abdurasul Zharmenov, general director of the National Center on Complex Processing of Mineral Raw Material of the Republic of Kazakhstan. "We have created technology for smelting of the ferro-aluminum-silicon and the 'Kazhastanskiy' alloy for deoxidation, modification and alloying of steel, based on the use of off grade carbonaceous feed. This became a truly global scientific revolution. Current technology is patented in 15 countries. Another example is KIVCET technology for processing lead-containing raw materials, based on the combined process of batch burning –smelting as a spray type with oxygen, recovering of oxide melt in a layer of carbon material and defending of depleted melt in an electric furnace, continuously carried out in a single unit of original design. This technology is patented in Kazakhstan, Russia, China, India, Mexico, Brazil, and Chile," explained Zharmenov.

Another example of how local companies have successfully navigated Kazakhstan's business landscape and brought about thriving projects is Syrymbet, the exploration and soon-to-be production company of the Syrymbet tin deposit in northern Kazakhstan, which is the largest undeveloped tin deposit in the world. Tengiz Bolturuk, CEO of Syrymbet said: "In 2012, I was brought in to properly assess the resource, which we confirmed by infill drilling to be one of the largest undeveloped tin deposit in the world. We invested heavily and subcontracted to reputable companies in the mining world such as AMEC, AMC, SGS, ALS and Golder Associates. We will know the fixed numbers in mid-summer when the Pre-Feasibility Study is completed. At that point, we will know the exact amount of tin, copper, fluoride, and tungsten that are present and recoverable, and we will know the total amount and quality of each product we will be able to produce. The updated Joint Ore Reserves Committee (JORC) report will soon be released, and the mine design will be done by AMC. From there we will select the best economically and technically viable option and move on to the feasibility study, which will begin by the end of August 2015 and should be completed by February 2016. We hope to start preliminary mine stripping and plant construction in the middle of next year, and production by the end of 2017. The Syrymbet deposit is surrounded by a national park, which



INTERESTED IN PROSPERITY?



Syrymbet is the only tin polymetallic in Kazakhstan and largest not-yet-developed tin polymetallic deposit in the world. In addition to tin being a major element, 2015 JORC Mineral Resource Estimate Report also included copper, zinc, tungsten, fluorine and others. In addition to these elements Syrymbet ore contains over 70 other minerals.

The Syrymbet company plans to start onsite construction of metallurgical plant to produce tin and other associated elements once the Definitive Feasibility Study is completed in early 2016.



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may cause some problems on the environmental side, therefore we are working with Golder Associates and a local consulting company Terra since 2013 to assess the environmental impact of our project in this area. It looks like our project should not have any negative impact on the surrounding environment and local population due to usage of environmentally friendly technology. We do have a good relationship with the local and provincial government. They are very supportive of the project. They understand that the mine will have a great social impact for the area. The area already has solid infrastructure, such as a railway located 30 km from the mine site. Additionally, the government has committed to investing \$10 million in 24 km of 110 kV power line, which is under construction since April 2015. Working so closely with the state and local governments reduces the political risk of the project and increases the confidence of investors.” Bolturuk went on to urge other companies to be careful in the preparation stages of a project to avoid problems later on: “Looking at most of the other mining projects in Kazakhstan; there are many apparent mistakes that have been made in the project development stage. Companies try to rush through development—skipping critical stages—and

do not hire enough mining and project management professionals, all in an effort to save money. However, this approach only produces a mine that cannot operate as designed, and then the company must spend millions more to correct their earlier mistakes on the project development stage.” Overall, Kazakhstan does present interesting opportunities for international investors ranging from exploration to production to providing services. Kazakhs are open and welcoming to the outside world and eager to explore their country jointly with foreign partners; they are also very capable at creating their own solutions and opportunities as demonstrated in the previous two examples. Once changes to the Mining Code are finally implemented, Kazakhstan will only keep creating more opportunities and rewards at the same time. “In preparation for its enactment, we are seeing more and more interest in the country’s potential with people coming for preliminary discussions. People assume that what is coming next is going to be an improvement and they are imagining what their presence here might look like. This is a positive trend for Kazakhstan,” explained Terrance Powell, Almaty Advisory Board Chairman of the Canadian Eurasia Russia Business Association. •



Syrymbet in northern Kazakhstan is the world’s largest undeveloped tin deposit. Photo courtesy of Syrymbet.



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Cover Photo: Zailiysky Alatau, also known as Trans-Ili Alatau, is a part of the Northern Tian Shan mountain range in Kazakhstan. Photo courtesy of Katya Koryakovtseva.

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Thank you,

GBR would like to thank all the companies and institutions interviewed for their time and dedication. We are very excited to be back in Kazakhstan reporting on the country’s vast mineral wealth and investment potential.

This publication is a pre-release edition of GBR’s full special report on Kazakhstan mining, which will be released in September 2015.

If you would like to be interviewed for the report, please contact Katya Koryakovtseva, katya@gbreports.com.

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